STAGE 2 SOURCE CONTROL EVALUATION
TECHNICAL MEMORANDUM
RP - PORTLAND SITE

June 21, 2007

Submitted to:

Oregon Department of Environmental Quality
Northwest Region
2020 S.W. 4th Avenue
Portland, Oregon 97201

Submitted for:

SLLI
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Submitted by:

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0-61M-107030/Phase 69/T1

June 21, 2007

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Mr. Tom Roick
Project Manager, Cleanup & Portland Harbor
Department of Environmental Quality
2020 S.W. 4th Avenue
Portland, Oregon 97201

Dear Mr. Roick:

Re: Stage 2 Source Control Evaluation Technical Memorandum
RP - Portland Site

On behalf of SLLI, AMEC Earth & Environmental, Inc. (AMEC) is submitting to the Oregon Department of Environmental Quality (DEQ) the enclosed Stage 2 Source Control Evaluation (SCE) Technical Memorandum (Stage 2 SCE TM). Activities described herein include monitoring well installation, and soil and groundwater sampling, on the Siltronic Corporation and BNSF Railway Company properties.

Field activities associated with Stage 2 of the SCE were completed in general accordance with the DEQ-approved Draft Stage 2 SCE Work Plan (Stage 2 SCE WP) dated July 24, 2006, and the Stage 2 SCE Modification to Scope letter dated September 11, 2006. DEQ approved the Stage 2 SCE WP on September 6, 2006. Although there were some minor variations from the Stage 2 SCE WP, none of the variations affect the quality of the monitoring well installation or soil and groundwater sampling event results.

Please find enclosed two bound copies and one compact disk containing a Portable Document Format (PDF) file of this technical memorandum. If you should have any questions, feel free to call Roger Gresh at (503) 639-3400.

Sincerely,

AMEC Earth & Environmental, Inc.

FOR
Roger T. Gresh, P.G.
Project Manager

Christy L. Johnson, R.G.
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REGISTERED
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Encl: Stage 2 Source Control Evaluation Technical Memorandum

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LIST OF ACRONYMS AND ABBREVIATIONS

µg/kg	micrograms per kilogram
µg/L	micrograms per liter
1,2-DCB	1,2-dichlorobenzene
Alluvium	Alluvium Geologic Zone
Alluvium Zone	Alluvium Hydrogeologic Zone
AMEC	AMEC Earth & Environmental, Inc.
Arkema	Arkema, Inc.
Basalt	Basalt Geologic Zone
Basalt Zone	Basalt Hydrogeologic Zone
bgs	below ground surface
BNSF	BNSF Railway Company
cis-1,2-DCE	cis-1,2-dichloroethene
COC	chain of custody
CRBG	Columbia River Basalt Group
CSM	Conceptual Site Model
DAG	Deep Alluvial Gravel Geologic Zone
DDD	4,4'-DDD
DDE	4,4'-DDE
DDT	4,4'-DDT
DEQ	Oregon Department of Environmental Quality
DGZ	Deep Gravel Hydrogeologic Zone
Dioxins	polychlorinated dibenzo-p-dioxins
DQO	data quality objective
DRO	diesel range organics
EPA	United States Environmental Protection Agency
Fill Zone	Fill Hydrogeologic Zone
FSP	Field Sampling Plan
ft/day	feet per day
Furans	polychlorinated dibenzofurans
GCR	Groundwater Characterization Report
HASP	Health and Safety Plan
IDW	investigative derived waste
ISCM	Interim Source Control Measure

JSCS	Joint Source Control Strategy
LAHI	Lake Area Hydrologic Investigation
LCS	laboratory control samples
MCL	maximum contaminant level
MDL	method detection limit
mg/L	milligrams per liter
MGP	manufactured gas plant
ng/kg	nanograms per kilogram
ng/L	nanograms per liter
NRWQC	National Recommended Water Quality Criteria
NDL	North Doane Lake
QA	Quality Assurance
OAR	Oregon Administrative Rule
QC	quality control
ORP	oxygen reduction potential
PCE	tetrachloroethene
PDF	Portable Document Format
PID	photoionization detector
PVC	polyvinyl chloride
QAPP	Quality Assurance Project Plan
RP	Rhône-Poulenc
RRO	residual range organics
SCE	Source Control Evaluation
Siltronic	Siltronic Corporation
silvex	2,4,5-TP
SLV	screening level value
SVOC	semi-volatile organic compound
TCE	trichloroethene
TEQ	toxicity equivalent quotient
TPH	total petroleum hydrocarbons
WDL	West Doane Lake
WP	work plan
VC	vinyl chloride
VOCs	volatile organic compounds

1.0 INTRODUCTION

This Stage 2 Source Control Evaluation (SCE) Technical Memorandum (Stage 2 SCE TM) presents lithologic and laboratory analytical data collected by AMEC Earth & Environmental, Inc. (AMEC) on behalf of SLLI in October and November 2006 on the Siltronic Corporation (Siltronic) and BNSF Railway Company (BNSF) properties. The work was conducted as part of ongoing SCE activities at the former Rhône-Poulenc (RP) Portland Site (Site). The former RP property is located at 6200 N.W. St. Helens Road in Portland, Oregon (Figure 1).

The SCE is being conducted in response to a letter from the Oregon Department of Environmental Quality (DEQ) dated February 22, 2005. A Stage 1 SCE investigation was conducted in accordance with the Final Stage 1 SCE Work Plan dated October 31, 2005 (AMEC, 2005a; DEQ, 2005b, c). Reconnaissance activities and analytical results from the portions of the Stage 1 SCE investigation completed on Arkema Inc. (Arkema) Lots 1 and 2 and the Siltronic riverbank were submitted to DEQ in the Stage 1 SCE TM dated May 19, 2006 (AMEC, 2006a).

Activities described herein were conducted in accordance with the DEQ-approved Draft Stage 2 SCE Work Plan (Stage 2 SCE WP), dated July 24, 2006 (AMEC, 2006b; DEQ, 2006), and the Stage 2 SCE Modification to Scope letter dated September 11, 2006 (AMEC, 2006c).

The investigative activities described in the Stage 2 SCE WP were implemented in general accordance with procedures outlined in the Stage 1 SCE Field Sampling Plan (FSP) (Appendix A, Final Stage 1 SCE Work Plan dated October 31, 2005, AMEC, 2005b); the Revised Quality Assurance Project Plan (QAPP), dated June 13, 2001 (AMEC, 2001) and Draft QAPP Addendum No. 1, dated August 1, 2002 (AMEC, 2002); and the site-specific Health and Safety Plan (HASP), dated June 24, 2005 (AMEC, 2005b), including more recent job safety analyses prepared for new project tasks since June 2005.

The specific data quality objectives (DQOs) of the Stage 2 SCE are to collect the data necessary to evaluate:

1. Regional groundwater flow direction within the Deep Gravel Hydrogeologic and Basalt Hydrogeologic Zones;
2. Baseline hydrogeologic data, such as depth to the Basalt Geologic Zone, grain size, and total organic carbon, to aid in the design of potential interim source control measures (ISCM), if deemed appropriate;

3. The distribution and concentration of RP-related constituents as they relate to the Joint Source Control Strategy (JSCS) screening level values (SLVs) as presented in Table 3-1 of the JSCS document (DEQ, 2005d); and
4. Whether constituents detected in groundwater beneath the Siltronic property are potentially from an RP source or other sources.

Appendices to this Stage 2 SCE TM consist of: completed soil and groundwater sampling field forms (Appendix A); soil boring logs and grain size analysis (Appendix B); data validation reports for soil and groundwater sample analytical results (Appendix C); and electronic copies in Portable Document Format (PDF) of the laboratory data reports (Appendix D).

2.0 FIELD ACTIVITIES

The Stage 2 SCE scope of work was designed to facilitate the refinement of the conceptual hydrogeologic site model and evaluate the distribution of RP-related constituents at various depths within multiple water-bearing zones beneath the Siltronic and BNSF properties. Activities consisted of collection of lithologic data, and collection and analysis of soil and groundwater samples.

The Stage 2 SCE scope of work to achieve the above-listed DQOs was divided into two tasks:

- **Task 1** - Installation of five new monitoring well clusters (RP-20 through RP-24) and installation of two additional monitoring wells each at existing well clusters MW-03 and RP-06 within the east-central portion of Siltronic and near the north-central property boundary of BNSF, as well as soil sampling at each new monitoring well location; and
- **Task 2** - Groundwater sampling to evaluate groundwater quality and water elevation monitoring of newly installed monitoring wells and selected existing monitoring wells necessary for groundwater gradient assessment.

This section describes field activities associated with Tasks 1 and 2.

2.1 Task 1 - Soil Sampling and Monitoring Well Installation

Task 1 consisted of the installation of five new monitoring well clusters (RP-20 through RP-24), and the installation of two additional monitoring wells each at existing well clusters MW-03 and RP-06. At existing well clusters MW-03 and RP-06, one well each was installed within the Deep Alluvial Geologic Zone, and one well each was installed in the Basalt Geologic Zone. Zone definitions are presented in Section 3.0. Drilling,

soil sampling, and monitoring well installation and development occurred between October 2 and November 15, 2006. The locations of newly installed Stage 2 SCE monitoring wells are presented on Figure 1.

Soil sampling and well installations were accomplished using sonic drilling technology. A remote access sonic rig was used to install the RP-24 cluster to reduce the impact to the landscaping at the request of Siltronic. The remaining monitoring wells were installed using a truck-mounted sonic drill rig. All drilling activities were conducted by a driller licensed in the State of Oregon and were monitored and recorded by an AMEC State of Oregon Registered Geologist. Drilling and well installations were conducted in accordance with applicable Oregon Water Resources Department regulations as outlined in Oregon Administrative Rules (OAR) 690-240.

2.1.1 Field Procedures

At each boring location, soils were sampled continuously from the surface to total boring depth. Individual boring depths ranged from 25 feet below ground surface (bgs) at RP-20 to 151 feet bgs at RP-22. Soil extracted from each boring was classified, logged, and field-screened for the presence of volatile organic compounds (VOCs) using a photoionization detector (PID). Soil samples for physical analysis were collected from each anticipated monitoring well screened interval as specified in the Stage 2 SCE WP. In addition, a single additional soil sample was collected from each well cluster where manufactured gas plant (MGP) waste impact was observed during drilling activities. MGP waste was observed at well clusters RP-20, RP-21, and RP-24. These soil samples were submitted for chemical analysis as described in Section 2.1.2.

A summary of planned versus actual soil samples collected from the Stage 2 SCE investigation is presented in Table 1. Field documentation included Soil Sampling Forms (Appendix A-1), Soil Boring Logs (Appendix B-1 and B-2), and Chain of Custody (COC) forms (Appendix D).

2.1.2 Sample Handling and Analysis

Soil samples collected for laboratory analysis, including physical and chemical analytical methods, are summarized in Table 1. The contract laboratories used for chemical analyses were TestAmerica in Beaverton, Oregon and Food Quality Laboratories in Portland, Oregon. Physical testing was conducted by Soil Technology in Bainbridge Island, Washington.

2.1.3 Quality Assurance/Quality Control Requirements

One soil field duplicate quality control (QC) sample was collected during the Stage 2 SCE investigation, from location RP-22-29. A complete quality assurance (QA) review of the analytical data associated with the QA/QC sample is provided in the data validation reports in Appendix C.

2.1.4 Monitoring Well Construction

Monitoring well clusters RP-20, RP-21, RP-22, RP-23, and RP-24 were installed on Siltronic property, and two monitoring wells were added to the existing MW-03 well cluster, also on Siltronic property. In addition, two monitoring wells were added to the existing RP-06 monitoring well cluster on the adjacent BNSF property. Final installation locations for each of the monitoring wells are shown on Figure 1. Monitoring well clusters included wells screened within each hydrogeologic zone (i.e., Fill Hydrogeologic Zone, Alluvium Hydrogeologic Zone, Deep Gravel Hydrogeologic Zone, and Basalt Hydrogeologic Zone). Zone definitions are presented in Section 3.0. At four monitoring well cluster locations (RP-06, RP-23, RP-24, and MW-03), the Deep Gravel Hydrogeologic Zone was encountered at a sufficient thickness for a 5-foot screened interval to provide a representative sampling location, resulting in one additional monitoring well installation at each of these four locations, as outlined in the Stage 2 SCE WP.

The monitoring wells were installed with approximately 10 feet of lateral separation between each monitoring well within a cluster. Monitoring well designations had been temporarily assigned to the proposed wells for clarity during planning. As planned, these designations (e.g., RP-20-S, RP-20-A, RP-20-G, and RP-20-B) were changed to reflect the actual completion depth of each well. Table 2 provides a summary of final monitoring well designations, screened intervals, and completion depths.

All monitoring wells were installed in accordance with the Stage 2 SCE WP and the Stage 1 SCE FSP, except as noted below in Section 2.1.5. Final well construction details are provided in Appendix B.

2.1.5 Variations from the Stage 2 SCE WP and Stage 1 SCE FSP for Soil Sampling and Monitoring Well Installation

Variations from the Stage 2 SCE WP and Stage 1 SCE FSP, including planned versus actual sampling locations, are summarized in Table 1 and discussed below.

- Gravel water-bearing unit monitoring wells were not installed at well clusters RP-20, RP-21, and RP-22 because the gravel water-bearing unit was of insufficient thickness for a 5-foot screened interval.
- Screened intervals were increased to 10 feet instead of 5 feet for Alluvium Zone wells at monitoring well clusters RP-20 and RP-22, to provide a greater cross section of the observed lithology (silt and sand, respectively) within the screened interval.
- A soil sample for analysis of metals and natural attenuation parameters was not collected from the screened interval of RP-20-97 (91 to 97 feet bgs) due to no core recovery on three successive attempts. A Shelby tube sample was successfully collected from 89 to 91 feet bgs, and was submitted for grain size analysis as planned.
- The location of the RP-21 monitoring well cluster was moved to the east approximately 200 feet, based on comments received from DEQ on the Stage 2 SCE WP (DEQ, 2006) and on the lithology observed during the drilling of RP-20, RP-22, and RP-23.

These variations from the Stage 2 SCE WP and Stage 1 SCE FSP did not adversely affect the quality of the Task 1 soil sampling and monitoring well installation, and assisted in a better understanding of the lithology on the Siltronic and BNSF properties.

2.1.6 Monitoring Well Development

Monitoring wells were developed following installation to remove particles that may have been trapped in the filter pack material during installation, and to ensure that the monitoring well is in hydraulic connection with the surrounding formation. Monitoring well development activities were recorded on the Well Development Logs, which are provided in Appendix A-2.

2.1.7 Monitoring Well Survey

The location and elevation of each newly installed monitoring well were surveyed by David Evans and Associates on November 27, 2006. Survey data were collected consistent with the RP Site coordinate system. Monitoring well elevations are provided on the monitoring well construction logs provided in Appendices B-1 and B-2.

2.2 Task 2 - Groundwater Sampling

One groundwater monitoring event was conducted at monitoring wells installed during the Stage 2 SCE. The groundwater sampling event was conducted between

November 7 and 28, 2006. In addition to the groundwater sampling, groundwater elevations were measured at 25 monitoring well clusters on the RP property and adjacent properties on November 16 and 17, 2006. This event included all the new Stage 2 SCE wells. A discussion of the groundwater monitoring activities within the SCE area is provided below.

2.2.1 Field Procedures

All monitoring wells were sampled using a low-flow dual valve pump, except for monitoring well RP-24-30, which was sampled using a low-flow peristaltic pump. At each well location, the groundwater parameters ferrous iron, turbidity, dissolved oxygen, pH, specific conductivity, oxygen reduction potential (ORP), and temperature were measured and recorded.

A summary of planned versus actual groundwater samples collected from the Stage 2 SCE monitoring locations is presented in Table 1. Field documentation was completed for each sample collected including a Groundwater Sampling Field form (Appendix A-3) and a COC form (Appendix D).

Depth to groundwater measurements for 25 monitoring well clusters on the RP property and surrounding properties were converted to groundwater elevations and are presented in Table 3.

2.2.2 Sample Handling and Analysis

Groundwater samples submitted for analysis, as well as the analytical methods, are summarized in Table 1. The contract laboratories used for analyses were: Severn Trent Laboratories in Burlington, Vermont; SGS in Wilmington, North Carolina; TestAmerica in Beaverton, Oregon; Food Quality Laboratories in Portland, Oregon; and the University of Oklahoma in Norman, Oklahoma.

2.2.3 Quality Assurance/Quality Control Requirements

One equipment rinsate blank, two field duplicates, and two interlaboratory split samples were collected during the Stage 2 SCE groundwater monitoring event. One trip blank was submitted and analyzed for VOCs by United States Environmental Protection Agency (EPA) Method 8260B on each day that sampling for VOC analysis occurred. A complete QA review of the analytical data associated with the QA/QC samples is provided in the data validation reports in Appendix C.

2.2.4 Variations from the Stage 2 SCE WP and Stage 1 SCE FSP for Groundwater Sampling

There were no variations from the Stage 2 SCE WP and the Stage 1 SCE FSP affecting the quality of the groundwater samples collected during this groundwater monitoring event.

3.0 CONCEPTUAL SITE MODEL

In the Final Groundwater Characterization Report (GCR), a hydrogeologic conceptual site model (CSM) of the Site was developed to evaluate groundwater fate and transport (AMEC, 2003). The hydrogeologic CSM consisted of three characterization zones (i.e., Fill/Shallow Alluvium, Alluvium, and Basalt Zones) defined by soil lithology, rock lithology, magnitude of vertical gradients and aquifer properties (e.g., hydraulic conductivity). The characterization zones were designated to describe groundwater flow and constituent transport that supported a hydrogeologically representative analysis of groundwater characterization results. Geologic and hydrogeologic data collected during the Stage 1 SCE, Stage 2 SCE, and Lake Area Hydrologic Investigation (LAHI) at RP and surrounding properties has resulted in the re-evaluation of the Site CSM originally presented in the GCR. This re-evaluation has led to defining both a geologic CSM and a revised hydrogeologic CSM for the Site, as presented in the following sections.

A series of nine lithologic cross sections have been developed using available lithologic data presented on Site boring logs. The locations of these cross sections are provided in Figure 2. Individual cross sections are presented in Figures 3 through11. Figure 12 provides an elevation contour of the surface of the basalt.

3.1 Geologic CSM

The geologic CSM was developed based on a review of lithologic boring logs completed in the area. Three geologic zones have been defined and are distinguished by soil and rock lithology. The geologic CSM is comprised of the Alluvium, Deep Alluvial Gravel, and Basalt Geologic Zones, as presented below.

3.1.1 Alluvium Geologic Zone

The Alluvium Geologic Zone (Alluvium) consists of unconsolidated fill and alluvial material. Both the fill and alluvial material contain silty sand, sandy silt, and clay; therefore, to distinguish fill material from alluvial material is not always obvious unless debris (i.e., bricks, gravel, battery casings, etc.) is present.

Fill material extends to depths of approximately 20 to 30 feet bgs, and is comprised of variable amounts of sand, silt, clay, organic material, gravel, and miscellaneous debris used to infill the former Doane Lake and the western bank of the Willamette River (River). Wood, wire, plastic, concrete, brick, foundry slag, and battery casings have been observed in the fill material at the Site.

The alluvial material underlying the fill is comprised of sediments deposited by the River. The alluvium is broadly characterized as silty sand and sandy silt extending to depths ranging from 55 feet bgs on the RP property to at least 205 feet bgs on the Siltronic property. Silty clay and clay with an average thickness of 15 feet is observed at approximately 25 feet bgs beneath the former Doane Lake area.

3.1.2 Deep Alluvial Gravel Geologic Zone

A Deep Alluvial Gravel Geologic Zone (DAG) underlies the Alluvium beneath much of the Site, and consists of subrounded to rounded colluvial and alluvial gravels with cobble-sized clasts in a sand matrix. The DAG ranges from approximately 5 to 40 feet thick, and has bottom depths ranging from 60 feet bgs on the RP property to at least 205 feet bgs on the Siltronic property. In general, the thickness of the DAG increases with proximity to the River and decreases with proximity to the Tualatin Mountains. At the RP property, the DAG is present primarily in the LA, with small deposits or isolated lenses interpreted in the HA and IA. Underlying the ESCO property, the DAG appears to be present in a relatively uniform layer (less than 10 feet thick) at the base of the Alluvium. At Arkema Lots 1 and 2, the DAG is present in a thin layer (less than 10 feet) on the western portion of the property and a small isolated deposit near the River at well cluster W-19. Observations to date indicate the greatest thickness of the DAG is approximately 40 feet bgs and its greatest depth is approximately 205 feet bgs, at RP-07 and SIL-01 respectively, both on Siltronic property.

3.1.3 Basalt Geologic Zone

The Basalt Geologic Zone (Basalt) underlies the alluvial deposits of the Alluvium and, where present, the DAG. The Basalt beneath the Site is part of the Columbia River Basalt Group (CRBG). In the west Portland business district, the Columbia River Basalt is at least 700 feet thick and consists of a series of lava flows separated by discontinuous layers of interflow tuff and sediment. At the Site, the uppermost portion of the Basalt is observed as highly fractured to massive and highly weathered to fresh.

A contour map depicting the top of the Basalt surface is provided in Figure 12. The Basalt surface at and near the RP property slopes downward toward NW Front Ave, and then rises to a high located near the center of Lots 2 and 3 of the Arkema property, resulting in a trough centered beneath the northern portion of the ESCO

property. The trough deepens to the north, near the BNSF-Siltronic property boundary, and continues its downward trend, dropping approximately 100 feet between boring SIL-03 and the RP-11 well cluster.

3.2 Hydrogeologic CSM

The hydrogeologic CSM for the RP site consists of four hydrogeologic zones distinguished by groundwater elevation, aquifer permeability, and constituent concentrations in groundwater, and was developed to evaluate groundwater fate and transport at the Site. The hydrogeologic CSM is comprised of the Fill, Alluvium, Deep Gravel, and Basalt Hydrogeologic Zones.

3.2.1 Fill Hydrogeologic Zone

The Fill Hydrogeologic Zone (Fill Zone), part of the Alluvium Geologic Zone, consists of saturated fill material (e.g., dredge sand and silt, gravel, debris) associated with the infilling of former Doane Lake and a low-lying marshy area north of the BNSF railroad tracks. The Fill Zone is discontinuous and is distinguished from the Alluvium, Deep Gravel, and Basalt Hydrogeologic Zones by:

- Relatively high groundwater elevations, and
- Groundwater flow direction toward West Doane Lake (WDL) south of the BNSF railroad tracks, toward North Doane Lake (NDL) north of the BNSF railroad tracks, and toward the River near the River shore north and south of the BNSF railroad tracks.

The upper boundary of the Fill Zone is the water table; therefore, groundwater in the Fill Zone is unconfined (Freeze and Cherry, 1979). The depth to groundwater in the Fill Zone is generally less than 15 feet bgs. Groundwater elevations in the Fill Zone do not exhibit tidal fluctuation; therefore, the Fill Zone does not appear to be hydraulically connected to the River (URS, 2000).

Water enters the Fill Zone on the south side of the BNSF tracks by precipitation and leakage from the northern portion of WDL. Water leaves the Fill Zone by discharge to the southern portion of WDL and to the underlying Alluvium Hydrogeologic Zone which flows towards the River (AMEC, 2005a). Water enters the Fill Zone on the north side of the BNSF tracks by precipitation and leakage from the northern portion of NDL. Water leaves the Fill Zone on the north side of the BNSF tracks by groundwater discharge to the southern and western portions of NDL and to the underlying Alluvium Hydrogeologic Zone which flows towards the River (AMEC, 2005a).

RP Site groundwater flow in the Fill Zone consists of a horizontal component toward WDL and NDL, and a vertical component toward the underlying Alluvium Zone caused by downward vertical hydraulic gradients (i.e., greater than 0.1 feet/feet) between the Fill and Alluvium Zones.

The average hydraulic conductivity of the Fill Zone is similar to that of the Alluvium Zone, is at least an order of magnitude less than that of the DGZ, and is slightly less than that of the Basalt Zone. Nine slug tests conducted at monitoring wells screened in the Fill Zone indicate that hydraulic conductivity ranges from 0.08 feet/day (ft/d) to 13.40 ft/d, with a geometric mean of 0.97 ft/d.

Groundwater monitoring wells assigned to the Fill Zone were identified based on the following criteria:

- A downward vertical gradient greater than 0.1 feet/feet between the shallow and deep monitoring well screens of the same well cluster completed in the Alluvium;
- A screened interval within fill material or above what appears to be a low permeability layer of sandy silt, organic silt, or clay; and/or
- Located within the former NDL, former Doane Lake footprints, or former marshy area north of the BNSF as observed in historical aerial photographs.

3.2.2 Alluvium Hydrogeologic Zone

The Alluvium Hydrogeologic Zone (Alluvium Zone) consists of saturated native silty sand and sandy silt. The Alluvium Zone is distinguished from the Deep Gravel and Basalt Hydrogeologic Zones by its lithology and low permeability. The Alluvium Zone is part of the Alluvium Geologic Zone.

Groundwater in the Alluvium Zone occurs under both unconfined and semi-confined conditions, but not under confined conditions. Unconfined conditions occur in the upper portion of the Alluvium Zone when the overlying Fill Zone is absent and the upper boundary of the Alluvium Zone is the water table (Freeze and Cherry, 1979). The Alluvium Zone exhibits semi-confined conditions when the overlying Fill Zone is present, or when shallow portions of the Alluvium Zone (which contain a higher percentage of silt) confine deeper portions of the Alluvium Zone (which contain a higher percentage of sand). Evidence for semi-confined conditions in the deeper portion of the Alluvium Zone includes:

- Groundwater elevations that rise above the bottom of the overlying Fill Zone (Fetter, 1994), indicating that groundwater in the Alluvium Zone is pressurized, which is a property of semi-confined groundwater;

- Drawdown observed in piezometers during a 24-hour pumping test at RP-03-52 indicate semi-confined conditions (Fetter, 1994); and
- Groundwater elevations in the Alluvium Zone exhibit tidal fluctuation as far inland as the W-11 well cluster on ESCO property; therefore, the Alluvium Zone appears to be semi-confined and hydraulically connected to the River (URS, 2000).

Water enters the Alluvium Zone by infiltration from precipitation (where the Fill Zone is not present), leakage from the overlying Fill Zone (where present), leakage from the underlying Deep Gravel and Basalt Hydrogeologic Zones, and lateral inflow from the Tualatin Mountains. This hydraulic pathway has allowed for constituents present in overlying shallower source areas to leak downward to deeper groundwater zones at some locations. Groundwater in the Alluvium Zone generally flows northeast, from the Tualatin Mountains toward the River. Groundwater elevations in the Alluvium Zone are similar to groundwater elevations in the Deep Gravel and Basalt Hydrogeologic Zones, and are lower than groundwater elevations in the Fill Zone.

The average hydraulic conductivity of the Alluvium Zone is similar to that of the Fill Zone, but is at least an order of magnitude less than that of the DGZ, and is slightly less than that of the Basalt Zone. Thirty-nine slug tests conducted at monitoring wells screened in the Alluvium Zone indicate that hydraulic conductivity in the Alluvium Zone ranges from 0.01 ft/d to 10.70 ft/d, with a geometric mean of 0.89 ft/d.

Groundwater monitoring wells assigned to the Alluvium Zone were identified based on the following criteria:

- A vertical gradient less than 0.1 feet/feet between the shallow and deep monitoring well screens of the same well cluster completed in the Alluvium; and/or
- Monitoring well screened interval within alluvial material that does not appear to be associated with fill, alluvial or colluvial gravels, or basalt.

3.2.3 Deep Gravel Hydrogeologic Zone

The Deep Gravel Hydrogeologic Zone (DGZ) consists of transmissive alluvial gravel, colluvial gravel, and weathered basalt that has hydrogeologic properties similar to the DAG. The DGZ is distinguished from the Alluvium and Basalt Hydrogeologic Zones by its relatively high permeability, and gravel and weathered basalt lithology. The DGZ is comprised of the DAG and the uppermost weathered portion of the Basalt.

The evidence for groundwater in the DGZ existing under semi-confined, but not confined, conditions includes:

- Groundwater elevations that rise above the top of the Deep Gravel Zone (Fetter, 1994), indicating that groundwater in the Deep Gravel Zone is pressurized, which is a property of semi-confined groundwater; and
- Groundwater elevations in the DGZ exhibit tidal fluctuation; therefore, the DGZ appears to be semi-confined and hydraulically connected to the River (URS, 2000).

Groundwater enters the DGZ by lateral inflow from the Tualatin Mountains, leakage from the overlying Alluvium Zone, and leakage from the underlying Basalt Hydrogeologic Zone. This hydraulic pathway has allowed for constituents present in overlying shallower source areas to leak downward to deeper groundwater zones at some locations. Groundwater in the DGZ flows northeast, from the Tualatin Mountains toward the River.

Average hydraulic conductivity of the DGZ is at least one order of magnitude greater than that of the Fill, Alluvium, and Basalt Zones. Thirty-two slug tests conducted at monitoring wells screened in the DGZ indicate that hydraulic conductivity ranges from 0.68 ft/d to 263 ft/d, with a geometric mean of 11.96 ft/d.

Groundwater monitoring wells assigned to the DGZ were identified based on the following criteria:

- Relatively large hydraulic conductivities indicating a relatively high permeability zone; and
- A screened interval within DAG and/or uppermost (15 feet) weathered basalt.

In defining the DGZ, consideration was also given to RP constituent concentrations within the alluvial gravel, colluvial gravel, and weathered basalt.

3.2.4 Basalt Hydrogeologic Zone

The Basalt Hydrogeologic Zone (Basalt Zone) consists of weathered basalt exhibiting hydrogeologic properties that are different than the DGZ, and competent basalt. The Basalt Zone is distinguished from the Alluvium and DGZ by its relatively low permeability and basalt lithology. The Basalt Zone is contained entirely within the Basalt Geologic Zone.

Groundwater in the Basalt Zone is semi-confined, as indicated by:

- Groundwater elevations that rise above the top of the Basalt Zone (Fetter, 1994), indicating that groundwater in the Basalt Zone is pressurized, which is a property of semi-confined groundwater; and

- Groundwater elevations in the Basalt Zone exhibit tidal fluctuation as far inland as the W-11 well cluster on ESCO property; therefore, the Basalt Zone appears to be semi-confined and hydraulically connected to the River (URS, 2000).

Groundwater enters the Basalt Zone by lateral inflow from the Tualatin Mountains and leakage from the overlying DGZ and Alluvium Zone, where present. Groundwater in the Basalt Zone flows northeast, from the Tualatin Mountains toward the River.

Average hydraulic conductivity of the Basalt Zone is one order of magnitude less than that of the DGZ, and is slightly greater than that of the Fill and Alluvium Zones. Three slug tests conducted at monitoring wells screened in the Basalt Zone indicate that hydraulic conductivity ranges from 1.70 ft/d to 8.0 ft/d, with a geometric mean of 3.20 ft/d.

Groundwater monitoring wells assigned to the Basalt Zone were identified based on the following criteria:

- A screened interval located entirely within Basalt; and
- Hydraulic conductivity that is low relative to hydraulic conductivity in the DGZ.

4.0 DATA QUALITY EVALUATION

AMEC validated 100% of the analytical results generated as part of the Stage 2 SCE sampling activities. Validation reports for the data quality evaluation are presented in Appendix C. In addition, all data entered into the project database from electronic data deliverables were verified against hard copy laboratory reports. This level of validation exceeds requirements agreed upon in the DEQ-approved Project QAPP (AMEC, 2001) and the QAPP Addendum (AMEC, 2002). The remainder of Section 3.0 of this report provides a brief overview of any data quality issues identified. For a full description of data quality limitations, please refer to the complete validation reports in Appendix C. Electronic copies of the laboratory data reports are provided in Appendix D.

Overall quality of the dataset is sufficient to meet DQOs previously established in the Stage 2 SCE WP and Stage 1 SCE FSP. Overall completeness of the data set exceeded 95%. Any limitations to usability noted during data validation were documented in the project database by the addition of review qualifiers assigned by qualified AMEC chemists to any affected result, as described below.

- Seventy-three results out of 8,376 total results, or 0.9%, were rejected during data validation. AMEC R-qualified and rejected 18 of the benzoic acid groundwater results due to very low recoveries in the associated laboratory control samples

(LCSs). This analyte is not a primary constituent of concern and the rejected results do not impact overall data usability. AMEC also R-qualified and rejected 33 herbicide results from three soil samples 1003-01 (RP-20-97 at 23 to 25 feet bgs), 1012-01 (RP-21-150 at 15 to 25 feet bgs), and 1018-01 (RP-24-85 at 30 to 32.5 feet bgs) due to severe hydrocarbon matrix interferences. Finally, AMEC R-qualified and rejected 22 insecticide results from soil sample 1018-01 (RP-24-85 at 30 to 32.5 feet bgs) because they could not be verified due to discrepancies between the original and re-extract concentrations, matrix spike recoveries, and dual-column concentrations, and apparent hydrocarbon matrix interferences related to probable presence of manufactured gas plant wastes.

- No VOCs, metals, or dioxin results were rejected by AMEC due to data quality issues.
- AMEC qualified 13% of the detected analyte concentrations as being not detected, with elevated reporting limits, because of target analyte detections in laboratory and/or field blanks.
- AMEC qualified less than 1% of the detected analytes as being tentatively identified because method-specified identification criteria were not met.

All other identified QC anomalies were relatively minor, resulting in data being qualified as estimated values, which did not adversely affect overall usability of the Stage 2 SCE data set.

5.0 DISCUSSION OF ANALYTICAL RESULTS

This section presents a discussion of soil and groundwater analytical results from the Stage 2 SCE investigation. Soil analytical results are tabulated on Tables 4A through 4H and groundwater results are tabulated on Tables 5A through 5J. Grain size analysis results are provided in Appendix B-3. Original laboratory reports generated during the Stage 2 SCE are provided on compact disk in Appendix D.

5.1 Soil

A total of 21 soil samples were collected for analytical testing, using a limited suite of chemical analyses, as originally described in the Stage 2 SCE WP and the modification to scope letter (AMEC, 2006bc). Below is a discussion of soil sample analytical results.

VOCs

Three soil samples from three monitoring well clusters were analyzed for VOCs (Table 4A). Chlorinated benzenes or other chlorinated VOCs were detected in one soil

sample collected from RP-24 (30 to 32.5 feet bgs) with estimated concentrations at or below 4.80 micrograms per kilogram (µg/kg). Additional VOCs were detected in three soil samples collected from RP-20 (23 to 25 feet bgs), RP-21 (15 to 25 feet bgs), and RP-24 (30 to 32.5 feet bgs). Detected VOCs include benzene, n-butylbenzene, sec-butylbenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, ethylbenzene, isopropylbenzene, m,p xylenes, and o-xylenes. These VOCs are typical of MGP waste.

SVOCs

Three soil samples from three monitoring well clusters were analyzed for SVOCs (Table 4B). SVOC detections in soil samples collected from RP-20 (23 to 25 feet bgs), RP-21 (15 to 25 feet bgs), and RP-24 (30 to 32.5 feet bgs) were primarily PAHs. Detected individual PAH concentrations ranged from 980 µg/kg (estimated, indeno(1,2,3-cd)pyrene, RP-24) to 290,000 µg/kg (phenanthrene, RP-21). The range and concentration of PAHs in these soil samples are consistent with MGP waste.

Chlorinated Herbicides

Three soil samples from three monitoring well clusters were analyzed for chlorinated herbicides (Table 4C). As previously described in Section 4.0, chlorinated herbicide analytical results for all three soil samples were rejected by AMEC during data validation due to hydrocarbon matrix interferences.

Organochlorine Insecticides

Three soil samples from three monitoring well clusters were analyzed for organochlorine insecticides (Table 4D). Beta-BHC and heptachlor epoxide were detected in two of the three soil samples. Beta-BHC was detected at RP-20 (23 to 25 feet bgs) at 210 µg/kg and RP-21 (15 to 25 feet bgs) at 1,100 µg/kg. Heptachlor epoxide was detected at RP-20 (23 to 25 feet bgs) at 83 µg/kg and at RP-21 (15 to 25 feet bgs) at 240 µg/kg, though the detection at RP-21 is qualified as a “tentatively identified compound” in the data validation report. All organochlorine insecticide analytical results from the third soil sample (RP-24 at 30 to 32.5 feet bgs) were rejected by AMEC during data validation due to hydrocarbon matrix interferences. Because of the extremely complex sample matrix related to presence of MGP waste, further insecticide analyses, if warranted, should be performed using either high resolution mass spectrometry (HRMS) or tandem mass spectrometry (MS/MS) techniques to help minimize interferences.

Dioxins-Furans

Three soil samples from three monitoring well clusters were analyzed for dioxin and furan congeners (Table 4E). The highest detected concentration for an individual congener was 1,2,3,4,6,7,8,9-OCDD at RP-21(15 to 25 feet bgs) with a concentration of 2,580 nanograms per kilogram (ng/kg), which is equivalent to 0.774 ng/kg as a toxicity equivalent quotient (TEQ) concentration. 2,3,7,8-TCDD was not detected in any of these soil samples.

Total Petroleum Hydrocarbons

Three soil samples from three monitoring well clusters were analyzed for diesel range organics (DRO) and residual range organics (RRO) (Table 4F). DRO and RRO were detected in all three soil samples analyzed. DRO was detected at a maximum concentration of 1,970 mg/kg at RP-24 (30 to 32.5), and RRO was detected at a maximum concentration of 1,190 mg/kg at RP-21 (15 to 25 feet bgs). These concentrations are consistent with MGP waste.

Metals

Twenty-four soil samples from the seven monitoring well clusters were analyzed for total metals (Table 4G). All 16 metals analyzed were detected in one or more soil samples. In general, the highest metal detections were observed at RP-06 (100 to 105 feet bgs), RP-22 (146 to 151 feet bgs), RP-23 (120 to 125 feet bgs), and RP-24 (80 to 85 feet bgs).

Natural Attenuation Parameters

Twenty-one soil samples from seven monitoring well clusters were analyzed for selected natural attenuation parameters. The analytical results from these tests will be used, as appropriate, for the evaluation of potential remedial options and remedial design. Results are summarized on Table 4H.

5.2 Groundwater

Below is a discussion of groundwater analytical results from the Stage 2 SCE investigation. Tabulated groundwater analytical results are presented on Tables 5A through 5I. The analytical results for the groundwater samples collected from the Stage 2 SCE monitoring wells were compared to preliminary ecological and human health SLVs as presented in the JSCS Table 3.1 (DEQ, 2005d). Screening results are summarized in Table 6. Note that Table 6 includes only those results that exceeded the appropriate SLVs. The preliminary screening values provided in Table 6 do not

represent cleanup goals and do not represent the level of potential risk at the River, but rather are included for discussion and presentation purposes only.

Figures 13 through 28 summarize analyte concentrations detected in groundwater within the four Site hydrogeologic zones (Fill Zone, Alluvium Zone, DGZ, and Basalt Zone) for selected VOCs including 1,2-dichlorobenzene (1,2-DCB), trichloroethene (TCE), tetrachloroethene (PCE), cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride (VC), and benzene. Compound specific carbon isotopic composition, as determined by the University of Oklahoma stable isotope laboratory, are presented on Figures 29 through 32.

Constituent distributions in groundwater within the four hydrogeologic zones are presented for the chlorinated herbicide 2,4,5-TP (silvex) on Figures 33 through 36; the sum of organochlorine insecticides 4,4'-DDD (DDD), 4,4'-DDE (DDE), and 4,4'-DDT (DDT) on Figures 37 through 40; polychlorinated dibenzo-p-dioxins (dioxins) and polychlorinated dibenzofurans (furans) provided as TEQ concentrations on Figures 41 through 44; and total and dissolved arsenic on Figures 45 through 52.

Figures 53 through 56 are based on similar figures presented in the Stage 1 SCE TM (AMEC, 2006a) that provided the estimated extent of selected constituents in groundwater. The figures have been updated to include the analytical results from the Stage 1 SCE reconnaissance activities on Arkema Lots 1 and 2 and Siltronic riverbank, as well as the Stage 2 SCE monitoring wells per DEQ's request in its comment letter to the Draft Stage 1 SCE WP (DEQ, 2005c). Screening values used to define the lateral and vertical extent of constituents are based on criteria provided in Table 7. The criteria used for the constituent extents were those identified by DEQ in its August 1, 2005 letter regarding the Draft Stage 1 SCE WP (DEQ, 2005c), and its January 23, 2007 letter regarding the Stage 1 SCE TM (DEQ, 2007). It should be noted that well clusters W-19 and RP-02, located on Arkema Lots 1 and 2, have not been sampled more recently than Spring 2005 because Arkema would not provide access. Likewise, wells installed on Arkema Lots 1 and 2 during the Stage 1 SCE, monitoring well clusters RP-08, RP-09, RP-10, also were not sampled as scheduled for during calendar years 2005-06 (note that as of April 2007, Arkema has granted access to Lots 1 and 2, and groundwater samples were collected in May as part of the Spring 2007 Groundwater Monitoring Event; results from this event will be reported as outlined in the Spring 2007 Groundwater Monitoring Event Work Plan).

VOCs

Chlorinated benzenes were detected in groundwater samples from one or more wells screened in the four hydrogeologic zones within the Stage 2 SCE study area (Table 5A). Concentrations of 1,2-DCB exceeded the most conservative fish consumption

SLV in DGZ monitoring wells RP-06, RP-21, RP-23, RP-24, and MW-03. Detections of 1,3-DCB occurred at eight monitoring wells screened in the DGZ and one monitoring well in the Alluvium Zone; however, concentrations did not exceed JSCS SLVs. Concentrations of 1,4-DCB exceeded the most conservative fish consumption SLV in one Alluvium Zone well and eight DGZ groundwater monitoring well locations. The distribution of 1,2-DCB from groundwater samples collected from well clusters installed during the Stage 2 SCE investigation exceeding the most conservative fish consumption SLV in the four hydrogeologic zones are presented on Figures 13 through 16. The distribution suggests the western extent of 1,2-DCB exceeding JSCS SLVs is limited to the southern portion of the Siltronic property, and generally within the DGZ.

TCE, cis-1,2-DCE, and VC were detected in one lower Alluvium Zone and six DGZ groundwater monitoring well samples collected during the Stage 2 SCE (Table 5A). As shown on Figures 21 through 24, the majority of the detections were from depths greater than 80 feet bgs within the lower Alluvium Zone and DGZ. TCE and VC results exceeded the most conservative fish consumption SLV in groundwater samples from RP-06-87, RP-06-95, RP-06-105, RP-23-125, and RP-24-85. VC results also exceeded the most conservative fish consumption SLV at monitoring well RP-23-100 (Table 6). PCE was not detected above the method detection limit (MDL) in any groundwater sample collected from Stage 2 SCE monitoring wells.

Benzene was detected in six groundwater samples collected during the Stage 2 SCE (Table 5A). As shown on Figures 25 through 28, two detections were observed in the Fill Zone, three in the DGZ, and one in the Basalt Zone. Concentrations of benzene exceeded the most conservative fish consumption SLV for two groundwater samples collected from the RP-23 monitoring well cluster (RP-23-100 and RP-23-125).

Methyl-t-butyl ether (MTBE) was detected in five groundwater samples collected from monitoring well clusters MW-03, RP-20, RP-21, and RP-22 (Table 5A). Detections were from depths greater than 90 feet bgs within the lower Alluvium, DGZ, and Basalt Zones, with concentrations ranging from an estimated concentration of 0.71 µg/L at RP-20-100, to 11.0 µg/L at RP-21-150.

Compound specific isotope analyses were conducted on 16 groundwater samples collected during the Stage 2 SCE that exhibited reportable detections of selected VOCs (Table 5J). The most recent compound specific isotope data available for all monitoring wells sampled to date, including those installed during the Stage 2 SCE investigation, are shown on Figures 29 through 32. Evaluation of these analytical results will be completed and presented as part of the upcoming SCE Report.

SVOCs

PAHs were detected in one or more groundwater samples from each of the Stage 2 SCE monitoring well clusters (Table 5B). PAH detections were limited to the Fill and Alluvium Zone, except for monitoring well cluster RP-20 at which PAHs were detected in all three monitoring wells. The highest detections of PAHs were observed at monitoring wells MW-03-S(27), RP-20-25, RP-21-28, and RP-23-30. Several PAHs exceeded the most conservative fish consumption SLV and their MCLs at Fill Zone monitoring wells RP-20-25, RP-21-28, RP-22-29, RP-23-30, and Alluvium Zone monitoring well RP-22-75 (Table 6). Analogous to the soil sample results discussed in Section 5.1, the PAH distribution in primarily shallow wells suggests the presence of MGP waste on the Siltronic property.

Other SVOCs detected in groundwater samples include benzoic acid, bis(2-ethylhexyl)phthalate, 2-chlorophenol, 2,4-dichlorphenol, and dimethylphthalate.

Chlorinated Herbicides

The only chlorinated herbicide detected in groundwater during the Stage 2 SCE was silvex, with concentrations ranging from 0.180 µg/L (estimated) at RP-21-28 to 58.0 µg/L at RP-06-95 (Table 5C). Silvex distribution beneath the Stage 2 SCE study area, as shown on Figures 33 through 36, is limited to the lower Alluvium Zone and DGZ, with the exception of Fill Zone monitoring well RP-21-28. Silvex concentrations exceeded the JSCS SLV at RP-06-95 and RP-06-105 (Table 6).

Organochlorine Insecticides

The organochlorine insecticide gamma chlordane was detected at RP-22-29 at 0.055 µg/L (Table 5D); however, this detection was qualified as a “tentatively identified analyte” by AMEC during data validation. No other organochlorine insecticides were detected in groundwater samples from the Stage 2 SCE.

Dioxin-Furans

Dioxin-furan congeners were detected in nine groundwater samples collected during the Stage 2 SCE (Table 5E). 2,3,7,8-TCDD detections were limited to monitoring wells RP-23-85 and RP-23-125, with concentrations exceeding the most conservative fish consumption SLV (Table 6). However, these concentrations were qualified as estimated by AMEC during data validation. Total dioxin TEQs for the four groundwater characterization zones are presented on Figures 41 through 44.

TPH

DRO was detected in one or more groundwater monitoring wells in each well cluster from the Stage 2 SCE. RRO was detected only in two Fill Zone monitoring wells (RP-23-30 and RP-24-30; Table 5F). The highest concentrations of DRO and RRO were observed at Fill Zone monitoring well RP-24-30 at 3.81 milligrams per liter (mg/L) and 1.85 mg/L, respectively. These concentrations are consistent with MGP waste.

Metals

All requested metals were detected in the total metals and dissolved metals analysis of one or more groundwater samples collected during the Stage 2 SCE except for cadmium (total metals; Table 5G) and cadmium, chromium, mercury, and zinc (dissolved metals; Table 5H). Metals with detections exceeding JSCS SLVs for ecological receptors included aluminum, arsenic, copper, lead, manganese, mercury, nickel, and zinc (Table 6). In addition, arsenic and manganese exceeded the most conservative fish consumption SLV. The distributions of total and dissolved arsenic are presented on Figures 45 through 48 and Figures 49 through 52, respectively. The maximum concentration of dissolved arsenic from the Stage 2 SCE was observed at monitoring well RP-23-85 at 99.43 µg/L. This outlier concentration is much higher than all other detections of arsenic in Stage 2 SCE monitoring wells, and is also higher than most recent arsenic concentrations observed at the RP property. Further evaluation of this constituent will be completed using analytical results from the Spring 2007 Groundwater Monitoring Event, and presented in the SCE Report.

6.0 SUMMARY

A total of 21 monitoring wells were installed on Siltronic and BNSF properties during the Stage 2 SCE field activities. Using the lithologic data collected during drilling activities, a geologic CSM was established for the RP Site that consists of three geologic units, including the Alluvium, DAG, and Basalt. The hydrogeologic CSM was revised and now consists of four zones, including: the Fill Zone (the upper portion of the Alluvium), the Alluvium Zone, the DGZ (includes the DAG and uppermost portion of weather basalt that has hydrogeologic properties similar to the DAG), and the Basalt Zone.

Based on the groundwater analytical data collected from the Stage 2 SCE monitoring wells, the following conclusions have been drawn regarding the south central portion of the Siltronic property and the north central portion of the BNSF property. As mentioned previously, comparisons to JSCS SLVs are only for discussion and presentation purposes.

- 1,2-DCB exceeding the most conservative fish consumption SLV was limited to DGZ groundwater samples collected from five monitoring well clusters including RP-06, RP-21, RP-23, RP-24, and MW-03. The distribution of 1,2-DCB from groundwater samples collected from well clusters installed during the Stage 2 SCE investigation exceeding the most conservative fish consumption SLV in the four hydrogeologic zones suggests the western extent of 1,2-DCB exceeding JSCS SLVs is limited to the southern portion of the Siltronic property, and generally within the DGZ.
- The highest detections of PAHs in groundwater were observed at Fill Zone monitoring wells MW-03-S(27), RP-20-25, RP-21-28, and RP-23-30. Their distribution suggests the presence of MGP waste on the Siltronic property.
- Silvex distribution beneath the Stage 2 SCE study area is limited to the lower Alluvium Zone and DGZ with the exception of Fill Zone monitoring well RP-21-28. Silvex concentrations exceeded the JSCS SLV at RP-06-95 and RP-06-105.
- 2,3,7,8-TCDD detections were limited to monitoring wells RP-23-85 and RP-23-125, with concentrations exceeding the most conservative fish consumption SLV; however, these concentrations were qualified as estimated.

The evaluations and conclusions from the Stage 2 SCE groundwater monitoring will be reviewed and revised, if necessary, following the completion of the Stage 1 SCE scope of work, and will be re-evaluated, as appropriate in the forthcoming SCE Report.

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LIMITATIONS

This technical memorandum was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Stage 2 Source Control Evaluation Technical Memorandum is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Planned Versus Actual Sampling Locations and Analyses for Soil and Groundwater
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Information				Analysis															
Sample Location [1]	Sample Depth Interval (feet bgs)	Location	Sample Media	Volatile Organic Compounds	Semivolatile Organic Compounds	Chlorinated Herbicides	Organo-chlorine Insecticides	Dioxins/ Furans	Total Petroleum Hydro-carbons	Total and Dissolved Metals	Alkalinity, pH, Hardness	Anions (Chloride, Nitrate, Nitrite, Sulfate), Ortho-phosphate, Ammonia	Heterotrophic Plate Count, Diesel Degrading Bacteria	Total and Dissolved Organic Carbon[1], Chemical Oxygen Demand	Sulfides	Total Suspended Solids, Total Dissolved Solids	Compound Specific Stable Isotope Analysis [2]	Grain Size Analysis, Bulk Density, Porosity	Explanation for Deviation from Field Sampling Plan
Analytical Method				EPA 8260B	EPA 8270C	EPA 8151A	EPA 8081A	EPA 1613	NWTPH Dx	EPA 6000/7000 Series	E310.1, 9045, SM 2340B	E300.0, E365.2, E350.2	HPC, DDB	E415.1, E410.4	EPA 9030	EPA 610.1 EPA 610.2	GC/C/IRMS	ASTM D422	
Task 1- Soil Sampling & Monitoring Well Installation																			
MW-03-137	131.5-136.5	Siltronic	Soil							X	X	X	X	X	X			X	As planned
MW-03-141	136-141	Siltronic	Soil							X	X	X	X	X	X			X	Grain size analysis added
RP-06-95	90-95	BNSF	Soil							X	X	X	X	X	X			X	As planned
RP-06-105	100-105	BNSF	Soil							X	X	X	X	X	X			X	Grain size analysis added
RP-20-25	10-25	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-20-97	23-25	Siltronic	Soil	X	X	X	X	X	X	X									As planned
RP-20-97	89-97	Siltronic	Soil															X	Shelby tube sample collected from 89-91 for physical testing only. No sample recovery from 91-97 after 3 attempts; no sample collected for chemical testing.
RP-20-110	105-109	Siltronic	Soil							X	X	X	X	X	X			X	Grain size analysis added
RP-21-28	13-28	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-21-125	115-125	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-21-150	15-25	Siltronic	Soil	X	X	X	X	X	X	X									As planned
RP-21-150	145-150	Siltronic	Soil							X	X	X	X	X	X			X	Grain size analysis added
RP-22-29	14-29	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-22-75	65-75	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-22-151	146-151	Siltronic	Soil							X	X	X	X	X	X			X	Grain size analysis added
RP-23-30	15-30	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-23-85	80-85	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-23-100	95-100	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-23-125	120-125	Siltronic	Soil							X	X	X	X	X	X			X	Grain size analysis added
RP-24-30	15-30	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-24-60	55-60	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-24-73	70-73	Siltronic	Soil							X	X	X	X	X	X			X	As planned
RP-24-85	30-32.5	Siltronic	Soil	X	X	X	X	X	X	X									As planned
RP-24-85	55-60	Siltronic	Soil							X	X	X	X	X	X			X	Contingency sample of alluvial material collected in case recovery of RP-24-60 was poor. Sample inadvertently submitted for analysis after successful sample collection at RP-24-60.
RP-24-85	80-85	Siltronic	Soil							X	X	X	X	X	X				As planned

TABLE 1
Planned Versus Actual Sampling Locations and Analyses for Soil and Groundwater
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Information				Analysis															
Sample Location [1]	Sample Depth Interval (feet bgs)	Location	Sample Media	Volatile Organic Compounds	Semivolatile Organic Compounds	Chlorinated Herbicides	Organo-chlorine Insecticides	Dioxins/ Furans	Total Petroleum Hydro-carbons	Total and Dissolved Metals	Alkalinity, pH, Hardness	Anions (Chloride, Nitrate, Nitrite, Sulfate), Ortho-phosphate, Ammonia	Heterotrophic Plate Count, Diesel Degrading Bacteria	Total and Dissolved Organic Carbon[1], Chemical Oxygen Demand	Sulfides	Total Suspended Solids, Total Dissolved Solids	Compound Specific Stable Isotope Analysis [2]	Grain Size Analysis, Bulk Density, Porosity	Explanation for Deviation from Field Sampling Plan
Analytical Method				EPA 8260B	EPA 8270C	EPA 8151A	EPA 8081A	EPA 1613	NWTPH Dx	EPA 6000/7000 Series	E310.1, 9045, SM 2340B	E300.0, E365.2, E350.2	HPC, DDB	E415.1, E410.4	EPA 9030	EPA 610.1 EPA 610.2	GC/C/IRMS	ASTM D422	
Task 2- Groundwater Monitoring																			
MW-03-S	14.5-24.8	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
MW-03-I	55-60	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
MW-03-81	75-80	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
MW-03-137	131.5-136.5	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
MW-03-141	136-141	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-06-30	24.5-29.5	BNSF	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-06-87	81-86	BNSF	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-06-95	90-95	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-06-105	100-105	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-20-25	10-25	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-20-97	87-97	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-20-110	105-110	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-21-28	13-28	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-21-125	115-125	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-21-150	145-150	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-22-29	14-29	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-22-75	65-75	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-22-151	146-151	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-23-30	15-30	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-23-85	80-85	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X			No VOCs detected
RP-23-100	95-100	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-23-125	120-125	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-24-30	15-30	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-24-60	55-60	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-24-73	68-73	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned
RP-24-85	80-85	Siltronic	Water	X	X	X	X	X	X	X	X	X	X	X	X	X	X		As planned

Definitions:

Gray shading denotes variation from the Stage 2 SCE WP.

ASTM	American Society for Testing and Materials
BNSF	BNSF Railway Company
EPA	United States Environmental Protection Agency
GC/C/IRMS	Gas Chromatograph/Combustion/Isotope Ratio Mass Spectrometry
MGP	manufactured gas plant
NWTPH Dx	Northwest Total Petroleum Hydrocarbons Diesel extended
RP	Rhone-Poulenc
VOC	volatile organic compound
X	parameter analyzed
1	The sampling locations listed in this table reflect monitoring wells that were installed during Stage 2 SCE field activities. One additional well at each of three monitoring well clusters (RP-20, RP-21, RP-22) was planned for installation, but was not completed due to limited occurrence of gravel at these locations.
2	VOCs were not detected in all groundwater samples; therefore, not all groundwater samples were submitted for stable isotope analysis.

TABLE 2
Summary of Monitoring Well Construction Details
Stage 2 Source Control Evaluation
RP - Portland Site

Stage 2 SCE WP Well ID[1]	Final Well ID	Anticipated Well Depth (feet bgs)	Actual Well Depth (feet bgs)	Anticipated Screen Length (feet)	Actual Screen Length (feet)	Anticipated Screened Interval (feet bgs)	Actual Screened Interval (feet bgs)
MW-03-G	MW-03-137	100	136.5	5	5	95-100	131.5-136.5
MW-03-B	MW-03-141	110	141	5	5	105-110	136-141
RP-06-G	RP-06-95	93	95	5	5	88-93	90-95
RP-06-B	RP-06-105	105	105	5	5	100-105	100-105
RP-20-S	RP-20-25	35	25	15	15	20-35	10-25
RP-20-A	RP-20-97	60	97	5	10	55-60	87-97
RP-20-G	--	80	Insufficient gravel thickness (2 inches); no well installed.		--	75-80	--
RP-20-B	RP-20-110	100	110	5	5	95-100	105-110
RP-21-S	RP-21-28	35	28	15	15	20-35	13-28
RP-21-A	RP-21-125	60	125	5	10	55-60	115-125
RP-21-G	--	80	Insufficient gravel thickness (2 inches); no well installed.		--	75-80	--
RP-21-B	RP-21-150	100	150	5	5	95-100	145-150
RP-22-S	RP-22-29	35	29	15	15	20-35	14-29
RP-22-A	RP-22-75	60	75	5	10	55-60	65-75
RP-22-G	--	80	Insufficient gravel thickness (2 inches); no well installed.		--	75-80	--
RP-22-B	RP-22-151	100	151	5	5	95-100	146-151
RP-23-S	RP-23-30	35	30	15	15	20-35	15-30
RP-23-A	RP-23-85	60	85	5	5	55-60	80-85
RP-23-G	RP-23-100	80	100	5	5	75-80	95-100
RP-23-B	RP-23-125	100	125	5	5	95-100	120-125
RP-24-S	RP-24-30	35	30	15	15	20-35	15-30
RP-24-A	RP-24-60	60	60	5	5	55-60	55-60
RP-24-G	RP-24-73	80	73.5	5	5	75-80	68-73
RP-24-B	RP-24-85	100	85	5	5	95-100	80-85

Notes:

bgs	below ground surface	B	Basalt Zone*
S	Fill/Shallow Alluvium Zone*	WP	Work Plan
A	Alluvium Zone*	ID	Identification
G	Gravel water-bearing unit of the Alluvium Zone*		

1 G monitoring wells were to be installed if the gravel water-bearing unit at the base of the Alluvium Zone was encountered during drilling at sufficient thickness to accommodate a 5-foot screen.

* Hydrogeologic Zones as defined in the Draft Stage 2 Source Control Evaluation Work Plan dated June 24, 2006.

TABLE 3
Groundwater Elevations
Stage 2 Source Control Evaluation
RP - Portland Site

Well Identification	Well Location	Hydrogeologic Zone	Elevation of Top of Casing (feet, COPD)	Measurement Date	Depth to Water (feet, BTOC)	Groundwater Elevation (feet, COPD)
AL5-19	LA	Fill	40.07	11/16/2006	14.25	25.82
AL5-35	LA	Alluvium	39.54	11/16/2006	14.15	25.39
AL5-62	LA	DGZ	39.59	11/16/2006	14.36	25.23
BST5W-74	LA	DGZ	39.87	11/16/2006	14.98	24.89
MW-01-26	HA	Alluvium	49.89	11/16/2006	10.85	39.04
MW-01-41	HA	Alluvium	49.53	11/16/2006	14.26	35.27
MW-01-56	HA	Alluvium	49.70	11/16/2006	14.51	35.19
MW-01-76	HA	Basalt	47.70	11/16/2006	17.52	30.18
MW-03-S(27)	SIL	Fill	36.35	11/17/2006	14.00	22.35
MW-03-I(60)	SIL	Alluvium	36.49	11/17/2006	20.45	16.04
MW-03-27	HA	Alluvium	48.29	11/16/2006	13.58	34.71
MW-03-49	HA	Alluvium	48.28	11/16/2006	13.46	34.82
MW-03-68	HA	Alluvium	48.25	11/16/2006	13.39	34.86
MW-03-81	SIL	Alluvium	35.54	11/17/2006	19.63	15.91
MW-03-137	SIL	DGZ	35.37	11/17/2006	18.86	16.51
MW-03-141	SIL	DGZ	35.29	11/17/2006	19.02	16.27
MW-05-24	HA	Fill	37.83	11/16/2006	8.91	28.92
MW-05-34	HA	Fill	37.83	11/16/2006	9.11	28.72
MW-05-52	HA	Alluvium	37.70	11/16/2006	11.20	26.50
MW-05-70	HA	Basalt	38.33	11/16/2006	12.11	26.22
MW-08-27	HA	Alluvium	48.23	11/17/2006	23.64	24.59
MW-08-46	HA	Alluvium	48.11	11/17/2006	17.36	30.75
MW-08-64	HA	Alluvium	47.97	11/17/2006	17.58	30.39
MW-11-24	IA	Alluvium	44.01	11/16/2006	8.11	35.90
MW-11-37	IA	Alluvium	43.80	11/16/2006	8.49	35.31
MW-11-56	IA	Alluvium	43.63	11/16/2006	8.31	35.32
MW-11-79	IA	Basalt	44.14	11/16/2006	8.80	35.34
MW-12-27	IA	Alluvium	50.22	11/16/2006	13.12	37.10
MW-12-41	IA	Alluvium	50.08	11/16/2006	13.18	36.90
MW-12-59	IA	Alluvium	49.58	11/16/2006	12.94	36.64
MW-12-79	IA	Basalt	50.08	11/16/2006	13.75	36.33
RP-01-31	BNSF	Alluvium	35.38	11/16/2006	25.47	9.91
RP-01-51	BNSF	Alluvium	35.28	11/16/2006	25.22	10.06
RP-01-65	BNSF	DGZ	35.00	11/16/2006	24.94	10.06
RP-04-16	BNSF	Fill	33.66	11/17/2006	10.10	23.56
RP-04-41	BNSF	Alluvium	34.10	11/17/2006	9.09	25.01
RP-04-48	BNSF	Alluvium	34.64	11/17/2006	9.91	24.73
RP-04-56	BNSF	DGZ	33.34	11/17/2006	8.62	24.72
RP-05-16	BNSF	Fill	40.54	11/16/2006	13.47	27.07
RP-05-47	BNSF	Alluvium	40.82	11/16/2006	13.48	27.34
RP-05-65	BNSF	DGZ	40.53	11/16/2006	14.11	26.42
RP-06-30	BNSF	Fill	37.10	11/16/2006	18.46	18.64
RP-06-87	BNSF	Alluvium	37.20	11/16/2006	25.28	11.92
RP-06-95	SIL	DGZ	37.26	11/16/2006	25.43	11.83
RP-06-105	SIL	DGZ	37.13	11/16/2006	25.04	12.09
RP-07-30	SIL	Fill	35.26	11/17/2006	22.61	12.65
RP-07-55	SIL	Alluvium	35.20	11/17/2006	25.65	9.55
RP-07-84	SIL	DGZ	35.22	11/17/2006	25.66	9.56

TABLE 3
Groundwater Elevations
Stage 2 Source Control Evaluation
RP - Portland Site

Well Identification	Well Location	Hydrogeologic Zone	Elevation of Top of Casing (feet, COPD)	Measurement Date	Depth to Water (feet, BTOC)	Groundwater Elevation (feet, COPD)
RP-07-119	SIL	DGZ	35.13	11/17/2006	25.52	9.61
RP-11-30	SIL	Fill	34.08	11/17/2006	19.06	15.02
RP-11-160	SIL	Alluvium	33.98	11/17/2006	23.90	10.08
RP-11-216	SIL	DGZ	33.87	11/17/2006	24.05	9.82
RP-15-25	LA	Fill	37.93	11/16/2006	8.81	29.12
RP-15-53	LA	Alluvium	38.69	11/16/2006	13.49	25.20
RP-15-65	LA	DGZ	38.21	11/16/2006	13.16	25.05
RP-17-25	LA	Fill	37.87	11/16/2006	5.10	32.77
RP-17-95	LA	Alluvium	37.90	11/16/2006	16.93	20.97
RP-17-119	LA	DGZ	37.83	11/16/2006	18.34	19.49
RP-17-145	LA	DGZ	38.02	11/16/2006	17.52	20.50
RP-18-30	ESCO	Fill	41.91	11/17/2006	12.80	29.11
RP-18-70	ESCO	Alluvium	41.70	11/17/2006	26.81	14.89
RP-18-111	ESCO	DGZ	41.82	11/17/2006	26.06	15.76
RP-18-125	ESCO	DGZ	42.02	11/17/2006	25.09	16.93
RP-19-25	ESCO	Fill	40.63	11/17/2006	12.86	27.77
RP-19-90	ESCO	Alluvium	41.31	11/17/2006	27.35	13.96
RP-19-129	ESCO	Basalt	41.08	11/17/2006	25.40	15.68
RP-20-25	SIL	Fill	39.70	11/17/2006	15.77	23.93
RP-20-97	SIL	Alluvium	39.30	11/17/2006	23.89	15.41
RP-20-110	SIL	Basalt	39.88	11/17/2006	24.29	15.59
RP-21-28	SIL	Fill	37.14	11/17/2006	15.92	21.22
RP-21-125	SIL	Alluvium	36.98	11/17/2006	23.44	13.54
RP-21-150	SIL	DGZ	36.78	11/17/2006	21.51	15.27
RP-22-29	SIL	Fill	35.09	11/17/2006	15.16	19.93
RP-22-75	SIL	Alluvium	35.17	11/17/2006	21.76	13.41
RP-22-151	SIL	DGZ	35.28	11/17/2006	22.05	13.23
RP-23-30	SIL	Fill	34.68	11/17/2006	15.42	19.26
RP-23-85	SIL	Alluvium	34.46	11/17/2006	22.62	11.84
RP-23-100	SIL	DGZ	34.84	11/17/2006	23.31	11.53
RP-23-125	SIL	DGZ	34.62	11/17/2006	23.86	10.76
RP-24-30	SIL	Fill	35.60	11/17/2006	25.43	10.17
RP-24-60	SIL	Alluvium	35.85	11/17/2006	26.26	9.59
RP-24-73	SIL	DGZ	35.74	11/17/2006	26.72	9.02
RP-24-85	SIL	DGZ	35.80	11/17/2006	26.32	9.48
W-09(38)	RP	Fill	34.88	11/16/2006	7.13	27.75
W-09-86	RP	Alluvium	38.54	11/16/2006	18.49	20.05
W-09-116	RP	Alluvium	38.12	11/16/2006	18.31	19.81
W-11-S(22)	ESCO	Fill	40.89	11/17/2006	9.19	31.70
W-11-I(60)	ESCO	Alluvium	40.22	11/17/2006	26.32	13.90
W-11-D(91)	ESCO	Alluvium	40.20	11/17/2006	26.35	13.85
W-11-B(122)	ESCO	DGZ	41.33	11/17/2006	26.55	14.78
W-12-S(20)	ESCO	Fill	41.42	11/17/2006	11.95	29.47
W-12-I(59)	ESCO	Alluvium	41.70	11/17/2006	22.49	19.21
W-12-D(100)	ESCO	Alluvium	41.68	11/17/2006	22.03	19.65

Notes:
COPD = City of Portland Datum
BTOC = Below Top of Casing
LA = Lake Area on RP property
HA = Herbicide Area on RP property
IA = Insecticide Area on RP property
SIL = Siltronic on RP property
BNSF = BNSF Railway Company on RP property
DGZ = Deep Gravel Hydrogeologic Zone

TABLE 4A
Volatile Organic Compound Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (feet)	Sample Date	Sample Code	Sample Type	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone (MEK)	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	1,2-Dibromo-3-chloropropane	Dibromochloromethane	1,2-Dibromoethane	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	Dichlorodifluoromethane
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	4,140 U	158 U	158 U	440 U	440 U	194 U	713 U	1,060 U	255 U	440 U	440 U	158 U	440 U	150 U	211 UJ	440 U	264 U	220 U	194 U	352 U	167 U	158 U	440 U	440 U	158 U	440 U
RP-21-150	15-25	10/20/2006	1012-01	Primary	**77.0**	**25.0 J**	0.310 U	0.160 U	0.230 U	0.160 U	0.350 U	1.10 U	**110**	**400**	1.20 U	0.260 U	0.240 U	0.270 U	0.470 UJ	0.220 U	0.280 U	0.390 U	0.370 U	0.370 U	0.150 U	0.150 U	0.150 U	0.310 U	0.340 U	0.250 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	20.0 UJ	0.450 U	0.310 U	0.160 U	0.230 U	0.160 U	0.350 UJ	**5.10 J**	**34.0**	**14.0**	1.20 U	0.260 U	0.240 U	0.270 U	0.470 UJ	0.220 U	0.280 U	0.390 U	0.370 U	0.370 UJ	0.150 U	0.150 U	0.150 U	**4.80 J**	0.340 U	0.250 U

Sample Location	Sample Depth Interval (feet)	Sample Date	Sample Code	Sample Type	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Iodomethane	Hexachlorobutadiene	Isobutylalcohol	Isopropylbenzene	4-Isopropyltoluene	Methylene chloride	4-methyl-2-pentanone (MIBK)	Methyl-t-Butyl Ether (MTBE)	n-Propylbenzene	Naphthalene	Styrene	Tetrachloroethene
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	273 U	440 U	167 U	440 U	150 U	202 U	440 U	185 U	440 U	440 U	150 U	440 U	150 U	625 U	440 U	449 U	18,500 UJ	150 U	255 U	458 U	466 U	158 U	158 U	**72,000**	440 U	458 U
RP-21-150	15-25	10/20/2006	1012-01	Primary	0.320 U	0.130 U	0.160 U	0.240 U	0.170 U	0.280 U	0.240 U	0.310 U	0.220 U	0.240 U	0.190 U	0.210 U	**1,600**	0.490 U	0.250 UJ	0.310 U	21.0 UJ	**370**	**230**	0.350 U	0.180 U	0.150 U	**110**	**40,000 J**	**13.0 J**	1.60 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	**3.00 J**	0.130 U	0.160 U	0.240 U	0.170 U	0.280 U	0.240 U	0.310 U	0.220 U	0.240 U	0.190 U	0.210 U	0.270 U	0.490 UJ	0.250 UJ	**2.20 J**	21.0 UJ	**21.0**	**37.0**	0.350 U	0.180 U	0.150 U	**11.0**	**120 J**	0.230 U	1.60 U

Sample Location	Sample Depth Interval (feet)	Sample Date	Sample Code	Sample Type	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Toluene	1,2,3-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	1,2,4-Trichlorobenzene	m,p-Xylene	o-Xylene
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	440 U	167 U	158 U	343 U	440 U	194 U	194 U	440 U	211 U	185 U	185 U	158 U	264 U	880 U	440 U
RP-21-150	15-25	10/20/2006	1012-01	Primary	0.190 U	0.320 U	**8.30 J**	0.270 U	0.170 U	0.170 U	0.350 U	0.230 U	0.350 U	**1,600**	**270**	0.220 U	0.420 U	**24.0 J**	**300**
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	0.190 U	0.320 U	0.530 U	2.70 U	0.170 U	0.170 U	0.350 U	0.230 U	0.350 UJ	**160**	**62.0**	0.220 U	**2.40 J**	**1.40 J**	0.300 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/kg = micrograms per kilogram
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 4B
Semivolatile Organic Compound Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	Acenaphthene	Acenaphthylene	Anthracene	Benzoaanthracene	Benzoapyrene	Benzobfluoranthene	Benzoghiperylene	Benzokfluoranthene	Benzoic acid	Benzyl alcohol	Bis2-Chloroethoxy methane	Bis2-Chloroethyl ether	Bis2-Chloroisopropyl ether	bis2-Ethylhexyl phthalate	4-Bromophenylphenyl ether	Butylbenzylphthalate	4-Chloro-3-methylphenol	4-Chloroaniline	2-Chloronapthalene	2-Chlorophenol	4-Chlorophenylphenyl ether	Chrysene	Dibenzoa,hanthracene
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	**13,000**	**1,000 J**	1,660 U	**13,000**	**18,000**	**18,000**	**29,000**	**24,000 J**	6,600 UJ	1,620 U	1,680 U	1,540 U	1,500 U	2,000 U	1,980 U	1,840 U	1,200 U	3,600 UJ	1,780 U	1,480 U	2,000 U	**26,000**	**4,300 J**
RP-21-150	15-25	10/20/2006	1012-01	Primary	**110,000**	**3,800 J**	**56,000**	**55,000**	**69,000**	**51,000**	**70,000**	**42,000 J**	33,000 UJ	8,100 U	8,400 U	7,700 U	7,500 U	10,000 U	9,900 U	9,200 U	6,000 U	18,000 UJ	8,900 U	7,400 U	10,000 U	**81,000**	**5,100 J**
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	**110,000**	3,600 U	**61,000**	**15,000 J**	**4,600 J**	**7,800 J**	**1,100 J**	4,400 UJ	13,200 UJ	3,240 U	3,360 U	3,080 U	3,000 U	4,000 U	3,960 U	3,680 U	2,400 U	7,200 UJ	3,560 U	2,960 U	4,000 U	**17,000 J**	3,680 U

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	Dibenzofuran	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	3,3'-Dichlorobenzidine	2,4-Dichlorophenol	2,6-Dichlorophenol	Diethylphthalate	2,4-Dimethylphenol	Dimethylphthalate	Di-n-butylphthalate	Di-n-octyl phthalate	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno1,2,3-cdpyrene	Isophorone
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	**2,700 J**	1,600 UJ	1,620 U	1,560 U	2,800 UJ	1,400 U	1,220 U	1,780 UJ	3,400 U	1,720 U	1,660 U	2,000 U	6,600 UJ	1,580 U	1,540 U	**35,000**	**4,000 J**	1,620 UJ	1,800 U	1,400 UJ	1,700 U	**20,000**	1,280 UJ
RP-21-150	15-25	10/20/2006	1012-01	Primary	**8,200 J**	8,000 U	8,100 U	7,800 U	14,000 UJ	7,000 U	6,100 U	8,900 U	17,000 U	8,600 U	8,300 U	10,000 UJ	33,000 UJ	7,900 U	7,700 U	**180,000**	**56,000**	8,100 U	9,000 U	7,000 U	8,500 U	**45,000 J**	6,400 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	**72,000**	3,200 U	3,240 U	3,120 U	5,600 UJ	2,800 U	2,440 U	3,560 UJ	6,800 U	3,440 UJ	3,320 U	4,000 U	13,200 UJ	3,160 U	3,080 U	**120,000**	**89,000 J**	3,240 U	3,600 U	2,800 U	3,400 U	**980 J**	2,560 U

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	2-Methyl-4,6-dinitrophenol	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol P-Cresol	Naphthalene	2-Nitroaniline	3-Nitroaniline	4-Nitroaniline	2-Nitrophenol	4-Nitrophenol	N-Nitrosodimethylamine	N-Nitrosodi-n-propyl amine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	2,3,4,6-Tetrachlorophenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	1,780 UJ	**6,100 J**	1,240 U	3,200 UJ	**64,000**	1,460 U	2,000 UJ	1,500 U	1,380 U	2,200 UJ	1,280 U	1,480 UJ	1,240 U	1,780 UJ	**22,000**	1,520 U	**43,000**	1,520 U	1,660 U	1,220 U	1,540 U
RP-21-150	15-25	10/20/2006	1012-01	Primary	8,900 U	**64,000**	6,200 U	16,000 U	**110,000**	7,300 U	10,000 UJ	7,500 U	6,900 U	11,000 U	6,400 UJ	7,400 U	6,200 U	8,900 UJ	**290,000**	7,600 U	**240,000**	7,600 U	8,300 U	6,100 U	7,700 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	3,560 U	**12,000 J**	2,480 U	6,400 UJ	**1,800 J**	2,920 U	4,000 UJ	3,000 U	2,760 U	4,400 U	2,560 UJ	2,960 UJ	2,480 U	3,560 UJ	**280,000**	3,040 U	**90,000**	3,040 U	3,320 U	2,440 U	3,080 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/kg = micrograms per kilogram
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value
ft = feet

TABLE 4C
Chlorinated Herbicides Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	2,4,5-T	2,4,5-TP Silvex	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	4.20 R	5.10 R	81.0 R	150 R	38.0 R	273 R	6.00 R	66.0 R	72.0 R	7,500 R	84,000 R
RP-21-150	15-25	10/20/2006	1012-01	Primary	1.40 R	1.70 R	27.0 R	50.0 R	1.30 R	91.0 R	2.00 R	22.0 R	24.0 R	27,000 R	1,600 R
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	1.40 R	1.70 R	27.0 R	50.0 R	1.30 R	91.0 R	2.00 R	22.0 R	24.0 R	2,500 R	1,600 R

Notes:
R = rejected result
µg/kg = micrograms per kilogram
ft = feet

TABLE 4D
Organochlorine Insecticides Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC Lindane	Chlordane	alpha-Chlordane	gamma-Chlordane
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	6.70 U	6.70 U	6.70 U	3.30 U	3.30 U	**210**	3.30 U	3.30 U	16.0 U	3.30 U	3.30 U
RP-21-150	15-25	10/20/2006	1012-01	Primary	33.5 U	33.5 U	33.5 U	16.5 U	16.5 U	**1,100**	16.5 U	16.5 U	80.0 U	16.5 U	16.5 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	9.90 R	0.670 R	290 R	0.330 R	0.330 R	5.30 R	0.330 R	0.330 R	1.60 R	0.330 R	12.0 R

Sample Location	Sample Depth Interval (feet)	Sample Date	Sample Code	Sample Type	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin Ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
					µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	6.70 U	3.30 U	6.70 U	6.70 U	6.70 U	6.70 UJ	6.70 U	3.30 U	**83.0**	33.0 U	220 U
RP-21-150	15-25	10/20/2006	1012-01	Primary	33.5 U	16.5 U	33.5 U	33.5 U	33.5 U	33.5 U	33.5 U	16.5 U	**240 N**	165 U	1,100 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	0.670 R	0.330 R	0.670 R	0.670 R	0.670 R	0.670 R	8.50 R	0.330 R	0.330 R	3.30 R	22.0 R

Notes:
BOLD = detection
N = tentatively identified
R = rejected result
µg/kg = micrograms per kilogram
ft = feet

TABLE 4E
Dioxin-Furan Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8,9-OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF
					ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	0.071 U	0.380 U	0.316 U	0.358 U	0.405 U	**8.15**	**64.2 J**	**0.537 J**	**0.372 J**	0.385 U	**0.604 J**	**0.323 J**	0.339 U	0.380 UJ
RP-21-150	15-25	10/20/2006	1012-01	Primary	1.09 U	5.86 U	4.87 U	**10.4 J**	6.24 U	**300 J**	**2,580**	**48.6**	**44.7 J**	**22.0 J**	**104 J**	**24.9 J**	**6.92 J**	**10.1 J**
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	1.18 U	6.34 U	5.27 U	5.97 U	6.76 U	**146 J**	**1,720**	**35.4**	**28.5 J**	**16.2 J**	**50.1 J**	**11.8 J**	5.65 U	**9.25 J**

Sample Location	Sample Depth Interval (feet)	Sample Date	Sample Code	Sample Type	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,6,7,8,9-OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Dioxin TEQ (WHO, 2005)	Furans TEQ (WHO, 2005)	Total TEQ (WHO, 2005)
					ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg	ng/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	**2.07 J**	0.336 U	**1.93 J**	**0.212 J**	0.380 UJ	**3.06 J**	**17.7 J**	**0.861 J**	**0.372 J**	**1.89 J**	**4.07 J**	**0.10**	**0.18**	**0.28**
RP-21-150	15-25	10/20/2006	1012-01	Primary	**73.6 J**	**16.5 J**	**160**	**2.02 J**	5.86 UJ	**65.0**	**651**	**96.7**	**134 J**	**249 J**	**177 J**	**4.81**	**28.34**	**33.16**
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	**35.6 J**	**10.2 J**	**54.3 J**	**3.70 J**	6.34 UJ	**40.7 J**	**396 J**	**52.6**	**75.0**	**119 J**	**97.0**	**1.98**	**16.84**	**18.82**

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
ng/kg = nanograms per kilogram
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value
TEQ = toxic equivalence
WHO, 2005. World Health Organization, http://www.who.int/ipcs/assessment/tef_update/en/index.html
ft = feet

TABLE 4F
Total Petroleum Hydrocarbons Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	Diesel Range Organics	Residual Range Organics
					mg/kg	mg/kg
RP-20-97	23-25	10/06/2006	1003-01	Primary	**1,210**	**570**
RP-21-150	15-25	10/20/2006	1012-01	Primary	**1,550**	**1,190**
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	**1,970**	**384**

Notes:
BOLD = detection
Total petroleum hydrocarbon results are not validated, according to RP standard practice
mg/kg = milligrams per kilogram
ft = feet

TABLE 4G
Total Metals Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	Aluminum	Arsenic	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Sodium	Vanadium	Zinc
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW-03-136	131.5-136.5	10/04/2006	1001-01	Primary	**10,700**	**2.00**	0.039 UJ	**5,380**	**14.1**	**16.5**	**33,400**	**4.60**	**4,970**	**365**	0.016 U	**19.0**	**630**	**756**	**104**	**45.4**
MW-03-141	136-141	10/02/2006	1000-01	Primary	**4,980**	**0.650 J**	0.035 UJ	**5,020**	**3.80**	**10.6**	**28,700**	**2.70**	**848**	**245**	**0.019 J**	0.730 U	**318 J**	**1,390**	**172**	**46.3**
RP-06-95	90-95	10/30/2006	1017-01	Primary	**8,590**	**2.50**	0.036 U	**4,640**	**11.0**	**17.2**	**22,900**	**3.90**	**3,720**	**373**	0.015 U	**11.6**	**729**	**747**	**63.7**	**35.5**
RP-06-105	100-105	10/27/2006	1016-01	Primary	**69,100**	49.0 U	**0.720 J**	**5,100 J**	**25.4**	**36.7**	**91,400**	**16.1**	**2,060 J**	**26,600**	0.021 U	**10.1 J**	**875 J**	12,900 U	**489**	**272**
RP-20-25	10-25	10/10/2006	1004-01	Primary	**15,000**	**3.20**	0.046 UJ	**4,190**	**19.4**	**20.5**	**23,700**	**50.2**	**3,190**	**298**	**0.066**	**14.9**	**644**	**484 J**	**65.6**	**63.8**
RP-20-97	23-25	10/06/2006	1003-01	Primary	**16,600**	**4.30**	0.049 UJ	**3,490**	**18.7**	**19.6**	**33,200**	**16.3**	**2,250**	**272**	**0.055**	**8.70**	**809**	**597**	**60.6**	**29.3**
RP-20-110	105-109	10/06/2006	1002-01	Primary	**3,380**	**1.10**	0.033 UJ	**4,180**	**8.90**	**10.2**	**25,000**	**1.70**	**963**	**194**	0.019 U	**1.00 J**	**313 J**	**1,110**	**157**	**33.9**
RP-21-28	13-28	10/25/2006	1015-01	Primary	**13,500**	**2.80**	0.040 U	**4,150**	**15.8**	**15.9**	**26,400**	**9.30**	**3,730**	**247 J**	**0.130**	**15.3**	**726**	**598**	**66.6**	**48.8 J**
RP-21-125	115-123	10/24/2006	1014-01	Primary	**14,000**	**2.20**	0.044 U	**3,350**	**19.3**	**14.2**	**24,100**	**6.00**	**3,060**	**118**	**0.029 J**	**12.8**	**742**	**322 J**	**76.6**	**45.5**
RP-21-150	15-25	10/20/2006	1012-01	Primary	**20,700**	**3.60**	0.045 U	**5,560**	**23.6**	**23.7**	**34,000**	**21.7**	**4,680**	**471**	**0.091**	**20.5**	**825**	**705**	**85.1**	**80.3**
RP-21-150	145-150	10/23/2006	1013-01	Primary	**4,740**	0.390 U	0.036 U	**5,480**	**4.00**	**8.20**	**51,500**	**3.80**	**1,370**	**1,190**	0.017 U	0.760 U	**235 J**	**1,120**	**150**	**43.5**
RP-22-29	14-29	10/12/2006	1007-01	Primary	**15,000**	**3.10**	0.041 UJ	**4,580**	**18.2**	**20.8**	**28,700**	**13.8**	**3,900**	**290**	**0.042**	**18.0**	**604**	**633**	**75.4**	**64.7**
RP-22-29	14-29	10/12/2006	1007-02	Duplicate	**12,900**	**2.70**	0.040 U	**4,090**	**15.0**	**16.5**	**27,400**	**10.1**	**3,580**	**263**	**0.027 J**	**16.6**	**570**	**564**	**68.8**	**49.2**
RP-22-75	65-73	10/12/2006	1006-01	Primary	**19,300**	**2.70**	0.045 UJ	**6,000**	**23.8**	**23.0**	**35,700**	**7.10**	**4,720**	**376**	0.022 U	**19.9**	**646**	**612**	**102**	**54.4**
RP-22-151	146-151	10/11/2006	1005-01	Primary	**63,700**	**1.70**	0.044 UJ	**4,410**	**14.6**	**14.7**	**132,000**	**13.4**	**2,210**	**2,280**	0.022 U	0.930 U	**377 J**	**857**	**484**	**146**
RP-23-30	15-30	10/18/2006	1011-01	Primary	**14,500**	**4.00**	0.044 U	**4,600**	**18.6**	**21.1**	**31,500**	**19.5**	**4,290**	**337**	0.025 U	**19.0**	**597**	**507 J**	**85.1**	**71.0**
RP-23-85	80-85	10/18/2006	1010-01	Primary	**13,900**	**9.40**	0.042 U	**3,910**	**13.5**	**21.9**	**36,600**	**12.2**	**5,990**	**524**	0.020 U	**13.7**	**1,230**	**294 J**	**75.3**	**58.1**
RP-23-100	95-100	10/17/2006	1009-01	Primary	**6,230**	**2.70**	0.035 U	**4,290**	**6.60**	**15.4**	**21,700**	**3.00**	**2,650**	**254**	0.019 U	**7.60**	**562**	**494**	**66.2**	**34.5**
RP-23-125	120-125	10/16/2006	1008-01	Primary	**44,700 J**	**0.970 J**	0.043 U	**6,310 J**	**25.5 J**	**27.0**	**85,800 J**	**7.30**	**1,740**	**1,610 J**	0.018 U	**5.50**	**218 J**	**603**	**209 J**	**132 J**
RP-24-30	15-30	11/13/2006	1023-01	Primary	**14,000**	**5.80**	**0.680**	**4,850**	**19.0**	**72.4**	**26,500**	**56.8**	**4,040**	**328**	**0.170**	**20.4**	**674**	**587**	**70.5**	**164**
RP-24-60	55-60	11/10/2006	1022-01	Primary	**6,190**	**3.00**	**0.130 J**	**3,430**	**8.40**	**11.6**	**23,400**	**4.10**	**4,290**	**375**	0.023 U	**9.70**	**930**	**502**	**62.5**	**39.5**
RP-24-73	70-73	11/08/2006	1021-01	Primary	**5,660 J**	**1.40**	**0.130 J**	**4,170 J**	**6.80 J**	**15.9 J**	**21,500 J**	**1.70**	**4,930**	**717 J**	0.017 U	**16.8**	**469**	**704**	**62.9**	**32.6 J**
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	**10,900**	**2.50**	0.044 U	**4,740**	**8.80**	**14.6**	**55,400**	**10.6**	**2,690**	**934**	0.017 U	**3.20 J**	**474 J**	**754**	**170**	**61.9**
RP-24-85	55-60	10/30/2006	1019-01	Primary	**7,510**	**2.90**	0.041 U	**4,190**	**9.30**	**12.4**	**24,900**	**5.00**	**4,340**	**381**	0.019 U	**9.80**	**1,100**	**589**	**61.9**	**40.6**
RP-24-85	80-85	10/30/2006	1020-01	Primary	**71,200 J**	**2.00 J**	**0.120 J**	**6,180 J**	**28.0 J**	**32.3 J**	**33,600 J**	**8.40**	**2,870**	**676 J**	0.024 U	**33.4**	**726**	**428 J**	**160 J**	**79.6 J**

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
mg/kg = milligrams per kilogram
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value
ft = feet

TABLE 4H
Natural Attenuation Parameter Soil Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Depth Interval (ft)	Sample Date	Sample Code	Sample Type	Chloride	Nitrate	Nitrite as N	Orthophosphorus	Sulfate	Sulfide	pH	Total Alkalinity	Total Organic Carbon	Percent Solids	Chemical Oxygen Demand	Diesel Degrading Bacteria	Heterotrophic Plate Count
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	SU	mg/kg	mg/kg	Percent	mg/kg	cfu/mL	cfu/mL
MW-03-141	136-141	10/02/2006	1000-01	Primary	**5.20**	0.181 U	0.195 U	**0.812**	**5.20**	**19.3**	**8.83**	**350**	551 U	**90.8**	**705**	10.0 U	10.0 U
MW-03-136	131.5-136.5	10/04/2006	1001-01	Primary	**19.0**	0.186 U	0.201 U	0.010 U	**4.60**	7.90 U	**8.71**	**850**	**839**	**81.8**	**541**	**70.0**	**30.0**
RP-20-110	105-109	10/06/2006	1002-01	Primary	**2.30**	0.181 U	0.195 U	**2.11**	**6.60**	7.90 U	**9.52**	**970**	**696**	**95.0**	**1,100**	**20.0**	**30.0**
RP-20-97	23-25	10/06/2006	1003-01	Primary	NT	NT	NT	NT	NT	NT	NT	NT	NT	**64.7**	NT	NT	NT
RP-20-25	10-25	10/10/2006	1004-01	Primary	**1.10**	0.229 U	0.248 U	0.005 U	**2.30**	**77.6**	**6.59**	**830**	**39,500**	**68.8**	**1,340**	**7,100**	**23,000**
RP-22-151	146-151	10/11/2006	1005-01	Primary	**21.5**	**3.13**	0.246 U	**0.050**	**0.910**	7.90 U	**7.58**	250 U	696 U	**71.8**	44.4 U	**50.0**	**10.0**
RP-22-75	65-73	10/12/2006	1006-01	Primary	**0.830**	0.211 U	0.228 U	**0.052**	**0.660**	7.90 U	**7.35**	**600**	**847**	**70.6**	**1,760**	10.0 U	10.0 U
RP-22-29	14-29	10/12/2006	1007-01	Primary	**1.10**	0.196 U	0.212 U	**0.053**	**17.9**	7.90 U	**6.30**	**580**	658 U	**76.0**	**951**	**15,000**	**20,000**
RP-22-29	14-29	10/12/2006	1007-02	Duplicate	**0.770**	0.201 U	0.217 U	0.005 U	**13.7**	7.90 U	**6.50**	**310**	614 U	**81.4**	**1,760**	**17,000**	**35,000**
RP-23-125	120-125	10/16/2006	1008-01	Primary	**300**	0.201 U	0.218 U	**0.082**	**3.80**	7.90 U	**7.21**	250 U	**37,500**	**76.7**	196 U	**30.0**	**80.0**
RP-23-100	95-100	10/17/2006	1009-01	Primary	**22.2**	0.184 U	0.199 U	**0.083**	**6.00**	7.90 U	**7.18**	**270**	**688**	**92.0**	**139**	**1,400**	**1,500**
RP-23-85	80-85	10/18/2006	1010-01	Primary	**0.870**	0.226 U	0.244 U	**0.328**	**0.620**	7.90 U	**7.45**	**910**	652 U	**76.7**	**156**	**90.0**	**30.0**
RP-23-30	15-30	10/18/2006	1011-01	Primary	**1.30**	0.223 U	0.241 U	**0.143**	**109**	7.90 U	**6.85**	**400**	**2,260**	**74.5**	**5,500**	**70,000**	**55,000**
RP-21-150	15-25	10/20/2006	1012-01	Primary	NT	NT	NT	NT	NT	NT	NT	NT	NT	**70.9**	NT	NT	NT
RP-21-150	145-150	10/23/2006	1013-01	Primary	**6.50**	0.301 U	0.227 U	**1.22**	**2.80**	7.90 U	**7.28**	**370**	578 U	**86.5**	**675**	**20.0**	**160**
RP-21-125	115-123	10/24/2006	1014-01	Primary	**6.00**	**1.10**	0.113 U	**0.354**	**1.20**	7.90 U	**7.11**	**980**	**7,640**	**70.0**	**20,700**	**460**	**360**
RP-21-28	13-28	10/25/2006	1015-01	Primary	**0.960**	0.150 U	0.113 U	**0.534**	**16.5**	7.90 U	**5.09**	**690**	**6,160**	**78.0**	**9,260**	**3,400**	**300**
RP-06-105	100-105	10/27/2006	1016-01	Primary	**53.0**	0.151 U	0.114 U	0.052 U	**1.60**	7.90 U	**7.38**	**330**	713 U	**70.1**	417 U	**30.0**	**40.0**
RP-06-95	90-95	10/30/2006	1017-01	Primary	**107**	0.150 U	0.113 U	**0.146**	**14.3**	7.90 U	**8.15**	**300**	562 U	**88.9**	**178**	**100**	10.0 U
RP-24-85	30-32.5	10/27/2006	1018-01	Primary	NT	NT	NT	NT	NT	NT	NT	NT	NT	**72.2**	NT	NT	NT
RP-24-85	55-60	10/30/2006	1019-01	Primary	**2.20**	**1.30**	0.113 U	**0.245**	**3.40**	7.90 U	**8.23**	**540**	624 U	**80.1**	40.7 U	**3,600**	**900**
RP-24-85	80-85	10/30/2006	1020-01	Primary	**180**	**1.79**	0.112 U	0.010 U	**16.3**	7.90 U	**7.04**	200 U	861 U	**58.1**	**97.1**	**40.0**	**40.0**
RP-24-73	70-73	11/08/2006	1021-01	Primary	**9.60**	0.175 U	0.189 U	**0.177**	**5.40**	7.90 U	**8.41**	**1,300**	**662**	**90.7**	33.1 U	**7,000**	**16,000**
RP-24-60	55-60	11/10/2006	1022-01	Primary	**2.30**	0.215 U	0.233 U	**0.306**	**2.40**	7.90 U	**7.72**	**65.6**	654 U	**76.4**	**420**	**80.0**	**200**
RP-24-30	15-30	11/13/2006	1023-01	Primary	**1.30**	0.202 U	0.218 U	**0.741**	**9.40**	7.90 U	**6.85**	**69,000**	**6,300**	**81.3**	**14,200**	**12,000**	**5,000**

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
Natural attenuation results are not validated, according to RP standard practice
NT = not tested
SU = standard pH units

mg/kg = milligrams per kilogram
cfu/mL = colony forming units per milliliter
ft = feet

TABLE 5A
Volatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Acetone	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	2-Butanone MEK	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon disulfide	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	2-Chlorotoluene	4-Chlorotoluene	1,2-Dibromo-3-chloropropane	Dibromochloromethane	1,2-Dibromoethane
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	1.30 U	**0.220 J**	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	**0.730 J**	0.056 U	0.067 U	0.063 U	**6.40**	0.130 U	0.052 U	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
MW-03-I(60)	11/16/2006	1042-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	**4.60**	0.130 U	0.052 U	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
MW-03-81	11/16/2006	1041-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	0.052 U	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
MW-03-137	11/17/2006	1043-01	Primary	22.9 U	1.46 U	0.898 U	1.18 U	1.55 U	1.00 U	1.20 U	12.7 U	1.20 U	0.634 U	0.986 U	1.18 U	1.11 U	**91.0**	2.29 U	0.915 U	0.915 U	1.09 U	1.94 U	2.29 U	1.36 U	1.36 U
MW-03-141	11/17/2006	1044-01	Primary	6.76 U	0.432 U	0.265 U	0.348 U	0.458 U	0.296 U	0.354 U	3.74 U	0.354 U	0.187 U	0.291 U	0.348 U	0.328 U	**33.0**	0.676 U	0.270 U	0.270 U	0.322 U	0.572 U	0.676 U	0.400 U	0.400 U
RP-06-30	11/27/2006	1050-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 UJ	0.052 U	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-06-87	11/27/2006	1051-01	Primary	30.2 U	1.93 U	1.18 U	1.55 U	2.04 U	1.32 U	1.58 UJ	16.7 U	1.58 U	0.835 U	1.30 U	1.55 U	1.46 U	**130**	3.02 UJ	1.21 U	1.21 U	1.44 U	2.55 U	3.02 U	1.79 U	1.79 U
RP-06-95	11/27/2006	1052-01	Primary	40.8 U	2.61 U	1.60 U	2.10 U	2.76 U	1.79 U	2.14 UJ	22.6 U	2.14 U	1.13 U	1.76 U	2.10 U	1.98 U	**260**	4.08 UJ	1.63 U	1.63 U	1.95 U	3.45 U	4.08 U	2.42 U	2.42 U
RP-06-105	11/28/2006	1053-01	Primary	38.1 U	2.43 U	1.49 U	1.96 U	2.58 U	1.67 U	1.99 UJ	21.1 U	1.99 U	1.05 U	1.64 U	1.96 U	1.85 U	**250**	3.81 UJ	1.52 U	1.52 U	1.82 U	3.22 U	3.81 U	2.26 U	2.26 U
RP-20-25	11/10/2006	1032-01	Primary	3.20 U	**1.80**	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	**1.50**	0.130 U	0.052 U	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-20-97	11/10/2006	1031-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	**0.320 J**	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-20-110	11/13/2006	1033-01	Primary	**4.50 J**	**0.960 J**	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	**2.70 J**	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	**0.370 J**	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-21-28	11/14/2006	1035-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	0.052 U	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-21-125	11/14/2006	1034-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	0.052 U	0.052 UJ	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-21-150	11/15/2006	1036-01	Primary	7.02 U	0.448 U	0.275 U	0.362 U	0.475 U	0.308 U	0.367 UJ	3.89 U	0.367 U	0.194 U	0.302 U	0.362 U	0.340 U	**30.0**	0.702 U	0.281 U	0.281 UJ	0.335 U	0.594 U	0.702 U	0.416 U	0.416 U
RP-21-150	11/15/2006	1036-02	Duplicate	7.41 U	0.473 U	0.291 U	0.382 U	0.502 U	0.325 U	0.388 UJ	4.10 U	0.388 U	0.205 U	0.319 U	0.382 U	0.359 U	**29.0**	0.741 U	0.296 U	0.296 UJ	0.353 U	0.627 U	0.741 U	0.439 U	0.439 U
RP-22-29	11/07/2006	1024-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	**0.350 J**	**0.480 J**	0.067 U	0.063 U	0.059 U	0.130 U	0.052 U	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-22-75	11/07/2006	1025-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	**0.330 J**	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-22-151	11/08/2006	1026-01	Primary	3.38 U	**0.590 J**	0.133 U	0.174 U	0.229 U	0.148 U	0.177 UJ	1.87 U	0.177 U	0.094 U	0.146 U	0.174 U	0.164 U	**15.0**	0.338 U	**0.590 J**	0.135 U	0.161 U	0.286 U	0.338 U	0.200 U	0.200 U
RP-23-30	11/08/2006	1027-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	0.052 U	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-23-85	11/09/2006	1028-01	Primary	1.30 U	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 UJ	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	**1.00**	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-23-100	11/09/2006	1029-01	Primary	11.7 U	**5.40 J**	0.459 U	0.603 U	0.792 U	0.513 U	0.612 UJ	6.48 U	0.612 U	0.324 U	0.504 U	0.603 U	0.567 U	**140**	1.17 U	0.468 U	0.468 U	0.558 U	0.990 U	1.17 U	0.693 U	0.693 U
RP-23-125	11/10/2006	1030-01	Primary	17.9 U	**29.0**	0.704 U	0.925 U	1.21 U	0.787 U	0.938 UJ	9.94 U	0.938 U	0.497 U	0.773 U	0.925 U	0.869 U	**110**	1.79 U	0.718 U	0.718 UJ	0.856 U	1.52 U	1.79 U	1.06 U	1.06 U
RP-24-30	11/20/2006	1046-01A	Primary	**16.0 J**	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 U	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	0.052 U	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-24-60	11/20/2006	1047-01	Primary	**2.80 J**	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 U	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	0.059 U	0.130 U	**5.80**	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-24-73	11/21/2006	1049-01	Primary	**7.20 J**	0.083 U	0.051 U	0.067 U	0.088 U	0.057 U	0.068 U	0.720 U	0.068 U	0.036 U	0.056 U	0.067 U	0.063 U	**0.530 J**	0.130 U	0.052 U	0.052 U	0.062 U	0.110 U	0.130 U	0.077 U	0.077 U
RP-24-85	11/21/2006	1048-01	Primary	15.5 U	0.988 U	0.607 U	0.797 U	1.05 U	0.678 U	0.809 U	8.57 U	0.809 U	0.428 U	0.666 U	0.797 U	0.750 U	**47.0**	1.55 U	0.619 U	0.619 U	0.738 U	1.31 U	1.55 U	0.916 U	0.916 U
RP-24-85	11/21/2006	1048-02	Duplicate	**86.0 J**	1.66 U	1.02 U	1.34 U	1.76 U	1.14 U	1.36 U	14.4 U	1.36 U	0.720 U	1.12 U	1.34 U	1.26 U	**47.0**	2.60 U	1.04 U	1.04 U	1.24 U	2.20 U	2.60 U	1.54 U	1.54 U

Notes:
BOLD = detection
U = not detected at or above the listed method

ug/L = micrograms per liter
detection limit
J = estimated result
UJ = not detected at or above the method
detection limit; the limit is an approximate value

TABLE 5A
Volatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Dibromomethane	1,2-Dichlorobenzene	1,3-Dichlorobenzene	Dichlorodifluoromethane	1,4-Dichlorobenzene	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,2-Dichloropropane	1,3-Dichloropropane	2,2-Dichloropropane	1,1-Dichloropropene	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Ethylbenzene	2-Hexanone	Iodomethane	Hexachlorobutadiene	Isobutylalcohol	Isopropylbenzene	4-Isopropyltoluene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	0.140 U	**0.470 J**	0.071 U	0.050 UJ	**0.450 J**	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	**3.30**	0.047 U
MW-03-I(60)	11/16/2006	1042-01	Primary	0.140 U	**0.520 J**	0.071 U	0.050 UJ	**0.240 J**	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
MW-03-81	11/16/2006	1041-01	Primary	0.140 U	0.062 U	0.071 U	0.050 UJ	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	**0.970 J**	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
MW-03-137	11/17/2006	1043-01	Primary	2.46 U	**660**	**20.0**	0.880 U	**220**	1.14 U	1.11 U	1.65 U	1.94 U	1.76 U	1.55 U	1.16 U	1.25 U	1.69 U	1.58 U	1.76 U	1.34 U	8.80 U	1.94 UJ	1.32 U	123 UJ	1.37 U	0.827 U
MW-03-141	11/17/2006	1044-01	Primary	0.728 U	**220**	**6.50**	0.260 U	**72.0**	0.338 U	0.328 U	0.489 U	0.572 U	0.520 U	0.458 U	0.343 U	0.369 U	0.499 U	0.468 U	0.520 U	0.395 U	2.60 U	0.572 UJ	0.390 U	36.4 UJ	0.406 U	0.244 U
RP-06-30	11/27/2006	1050-01	Primary	0.140 U	**0.300 J**	0.071 U	0.050 U	**0.210 J**	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-06-87	11/27/2006	1051-01	Primary	3.25 U	**870**	**19.0 J**	1.16 U	**200**	1.51 U	1.46 U	2.18 U	**16.0 J**	2.32 U	2.04 U	1.53 U	1.65 U	2.23 U	2.09 U	2.32 U	1.76 U	11.6 U	2.55 U	1.74 U	162 UJ	1.81 U	1.09 U
RP-06-95	11/27/2006	1052-01	Primary	4.40 U	**1,200**	**31.0 J**	1.57 U	**320**	2.04 U	1.98 U	**6.50 J**	**20.0 J**	3.14 U	2.76 U	2.07 U	2.23 U	3.01 U	2.83 U	3.14 U	2.39 U	15.7 U	3.45 U	2.35 U	220 UJ	2.45 U	1.48 U
RP-06-105	11/28/2006	1053-01	Primary	4.10 U	**1,100**	**29.0 J**	1.46 U	**290**	1.90 U	1.85 U	2.75 U	**17.0 J**	2.93 U	2.58 U	1.93 U	2.08 U	2.81 U	2.64 U	2.93 U	2.23 U	14.6 U	3.22 U	2.20 U	205 UJ	2.29 U	1.38 U
RP-20-25	11/10/2006	1032-01	Primary	0.140 U	0.062 U	0.071 U	0.050 UJ	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	**4.70**	0.500 U	0.110 U	0.075 U	7.00 UJ	**0.500 J**	0.047 U
RP-20-97	11/10/2006	1031-01	Primary	0.140 U	0.062 U	0.071 U	0.050 UJ	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-20-110	11/13/2006	1033-01	Primary	0.140 U	0.062 U	0.071 U	0.050 UJ	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	**0.360 J**	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-21-28	11/14/2006	1035-01	Primary	0.140 U	0.062 U	0.071 U	0.050 UJ	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	**0.570 J**	0.047 U
RP-21-125	11/14/2006	1034-01	Primary	0.140 U	0.062 U	0.071 U	0.050 UJ	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-21-150	11/15/2006	1036-01	Primary	0.756 U	**210**	0.383 U	0.270 UJ	**67.0**	0.351 U	0.340 U	0.508 U	0.594 U	0.540 U	0.475 U	0.356 U	0.383 U	0.518 U	0.486 U	0.540 U	0.410 U	2.70 U	0.594 U	**1.10 J**	37.8 UJ	0.421 U	0.254 U
RP-21-150	11/15/2006	1036-02	Duplicate	0.798 U	**210**	0.405 U	0.285 UJ	**65.0**	0.370 U	0.359 U	0.536 U	0.627 U	0.570 U	0.502 U	0.376 U	0.405 U	0.547 U	0.513 U	0.570 U	0.433 U	2.85 U	0.627 U	0.427 U	39.9 UJ	0.445 U	0.268 U
RP-22-29	11/07/2006	1024-01	Primary	0.140 U	0.062 U	0.071 U	0.050 U	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	**0.580 J**	0.047 U
RP-22-75	11/07/2006	1025-01	Primary	0.140 U	0.062 U	0.071 U	0.050 U	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-22-151	11/08/2006	1026-01	Primary	0.364 U	**100**	**2.90**	0.130 U	**30.0**	0.169 U	0.164 U	0.244 U	**0.880 J**	0.260 U	0.229 U	0.172 U	0.185 U	0.250 U	0.234 U	0.260 U	0.198 U	1.30 U	0.286 U	0.195 U	18.2 UJ	0.203 U	0.122 U
RP-23-30	11/08/2006	1027-01	Primary	0.140 U	**0.510 J**	0.071 U	0.050 U	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	**0.590 J**	0.047 U
RP-23-85	11/09/2006	1028-01	Primary	0.140 U	0.062 U	0.071 U	0.050 U	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 U	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-23-100	11/09/2006	1029-01	Primary	1.26 U	**340**	**8.90 J**	0.450 U	**120**	0.585 U	0.567 U	0.846 U	**5.50 J**	0.900 U	0.792 U	0.594 U	0.639 U	0.864 U	0.810 U	0.900 U	0.684 U	4.50 U	0.990 U	0.675 U	63.0 UJ	0.702 U	0.423 U
RP-23-125	11/10/2006	1030-01	Primary	1.93 U	**540**	0.980 U	0.690 UJ	**140**	0.897 U	0.869 U	1.30 U	**7.90 J**	1.38 U	1.21 U	0.911 U	0.980 U	1.32 U	1.24 U	1.38 U	1.05 U	6.90 U	1.52 U	1.04 U	96.6 UJ	1.08 U	0.649 U
RP-24-30	11/20/2006	1046-01A	Primary	0.140 U	**0.370 J**	0.071 U	0.050 U	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 UJ	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-24-60	11/20/2006	1047-01	Primary	0.140 U	**0.320 J**	0.071 U	0.050 U	0.037 U	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 UJ	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-24-73	11/21/2006	1049-01	Primary	0.140 U	**5.90**	**0.200 J**	**0.360 J**	**1.60**	0.065 U	0.063 U	0.094 U	0.110 U	0.100 U	0.088 U	0.066 U	0.071 U	0.096 U	0.090 U	0.100 U	0.076 U	0.500 U	0.110 UJ	0.075 U	7.00 UJ	0.078 U	0.047 U
RP-24-85	11/21/2006	1048-01	Primary	1.67 U	**480**	**13.0**	0.595 U	**130**	0.773 U	0.750 U	1.12 U	**6.40 J**	1.19 U	1.05 U	0.785 U	0.845 U	1.14 U	1.07 U	1.19 U	0.904 U	5.95 U	1.31 UJ	0.892 U	83.3 UJ	0.928 U	0.559 U
RP-24-85	11/21/2006	1048-02	Duplicate	2.80 U	**490**	**14.0 J**	1.00 U	**130**	1.30 U	1.26 U	1.88 U	**7.10 J**	2.00 U	1.76 U	1.32 U	1.42 U	1.92 U	1.80 U	2.00 U	**4.60 J**	10.0 U	2.20 UJ	1.50 U	140 UJ	1.56 U	0.940 U

Notes:
BOLD = detection
U = not detected at or above the listed method

µg/L = micrograms per liter
detection limit
J = estimated result
UJ = not detected at or above the method
detection limit; the limit is an approximate value

TABLE 5A
Volatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Methylene chloride	4-methyl-2-pentanone MIBK	Methyl-t-Butyl Ether MTBE	n-Propylbenzene	Naphthalene	Styrene	Tetrachloroethene	1,1,1,2-Tetrachloroethane	1,1,2,2-Tetrachloroethane	Toluene	1,2,3-Trichlorobenzene	1,1,1-Trichloroethane	1,1,2-Trichloroethane	Trichloroethene	Trichlorofluoromethane	1,2,3-Trichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Vinyl chloride	1,2,4-Trichlorobenzene	m,p-Xylene	o-Xylene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	0.069 U	0.500 U	0.052 U	**0.980 J**	**1.90 J**	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**0.660 J**	**0.220 J**	0.092 U	0.042 U	0.350 U	**0.630 J**
MW-03-I(60)	11/16/2006	1042-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	**0.320 J**	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**1.70**	**0.350 J**	0.092 U	0.042 U	0.097 U	**0.820 J**
MW-03-81	11/16/2006	1041-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	**1.40 J**	0.110 U	0.056 U	0.090 U	0.120 U	**0.910 J**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**3.60**	**0.800 J**	0.092 U	0.042 U	**2.10**	**2.10**
MW-03-137	11/17/2006	1043-01	Primary	1.21 U	8.80 U	0.915 U	0.986 U	1.04 U	1.94 U	0.986 U	1.58 U	2.11 U	1.04 U	1.13 U	1.06 U	0.950 U	1.57 U	0.669 U	3.87 U	1.69 U	1.13 U	1.62 U	0.739 U	1.71 U	1.21 U
MW-03-141	11/17/2006	1044-01	Primary	0.359 U	2.60 U	**4.90 J**	0.291 U	0.307 U	0.572 U	0.291 U	0.468 U	0.624 U	0.307 U	0.333 U	0.312 U	0.281 U	0.463 U	0.198 U	1.14 U	0.499 U	0.333 U	0.478 U	0.218 U	0.504 U	0.359 U
RP-06-30	11/27/2006	1050-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.059 U	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	0.069 U
RP-06-87	11/27/2006	1051-01	Primary	1.60 U	11.6 U	1.21 U	1.30 U	1.37 U	2.55 U	1.30 U	2.09 U	2.78 U	1.37 U	1.48 U	1.39 U	1.25 U	**25.0**	0.882 U	5.10 U	2.23 U	1.48 U	**15.0 J**	0.974 U	2.25 U	1.60 U
RP-06-95	11/27/2006	1052-01	Primary	2.17 U	15.7 U	1.63 U	1.76 U	1.85 U	3.45 U	1.76 U	2.83 U	3.77 U	1.85 U	2.01 U	1.88 U	1.70 U	**11.0 J**	1.19 U	6.91 U	3.01 U	2.01 U	**30.0 J**	1.32 U	3.05 U	2.17 U
RP-06-105	11/28/2006	1053-01	Primary	2.02 U	14.6 U	1.52 U	1.64 U	1.73 U	3.22 U	1.64 U	2.64 U	3.52 U	1.73 U	1.88 U	1.76 U	1.58 U	**9.30 J**	1.11 U	6.45 U	2.81 U	1.88 U	**28.0 J**	1.23 U	2.84 U	2.02 U
RP-20-25	11/10/2006	1032-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	**32.0**	0.110 U	0.056 U	0.090 U	0.120 U	**0.470 J**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**1.40**	**0.360 J**	0.092 U	0.042 U	**2.50**	**1.20**
RP-20-97	11/10/2006	1031-01	Primary	0.069 U	0.500 U	**1.50**	0.056 U	**4.90 J**	0.110 U	0.056 U	0.090 U	0.120 U	**0.430 J**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	**0.260 J**	0.069 U
RP-20-110	11/13/2006	1033-01	Primary	**0.200 J**	0.500 U	**0.710 J**	0.056 U	**2.60 J**	0.110 U	0.056 U	0.090 U	0.120 U	**1.50**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**0.230 J**	0.064 U	0.092 U	0.042 U	**0.580 J**	**0.380 J**
RP-21-28	11/14/2006	1035-01	Primary	0.069 U	0.500 U	0.052 U	**0.230 J**	**3.30 J**	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	**0.260 J**
RP-21-125	11/14/2006	1034-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.059 U	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	0.069 U
RP-21-150	11/15/2006	1036-01	Primary	0.373 U	2.70 U	**11.0**	0.302 U	**4.10 J**	0.594 U	0.302 U	0.486 U	0.648 U	0.319 U	**1.60 J**	0.324 U	0.292 U	0.481 U	0.205 U	1.19 U	0.518 U	0.346 U	0.497 U	**1.20 J**	0.524 U	0.373 U
RP-21-150	11/15/2006	1036-02	Duplicate	0.393 U	2.85 U	**11.0**	0.319 U	**1.40 J**	0.627 U	0.319 U	0.513 U	0.684 U	0.336 U	0.365 U	0.342 U	0.308 U	0.507 U	0.217 U	1.25 U	0.547 U	0.365 U	0.524 U	0.239 U	0.553 U	0.393 U
RP-22-29	11/07/2006	1024-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	**1.50**	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**0.200 J**	0.064 U	0.092 U	0.042 U	0.097 U	**0.430 J**
RP-22-75	11/07/2006	1025-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.230 U	0.110 U	0.056 U	0.090 U	0.120 U	**0.380 J**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	0.069 U
RP-22-151	11/08/2006	1026-01	Primary	0.179 U	1.30 U	**7.60**	0.146 U	0.153 U	0.286 U	0.146 U	0.234 U	0.312 U	0.153 U	0.166 U	0.156 U	0.140 U	0.231 U	0.099 U	0.572 U	0.250 U	0.166 U	0.239 U	0.109 U	0.252 U	0.179 U
RP-23-30	11/08/2006	1027-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	**3.80**	0.110 U	0.056 U	0.090 U	0.120 U	**0.240 J**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	**0.540 J**	**0.200 J**	0.092 U	0.042 U	0.097 U	0.069 U
RP-23-85	11/09/2006	1028-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.059 U	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	0.069 U
RP-23-100	11/09/2006	1029-01	Primary	0.621 U	4.50 U	0.468 U	0.504 U	0.531 U	0.990 U	0.504 U	0.810 U	1.08 U	0.531 U	0.576 U	0.540 U	0.486 U	0.801 U	0.342 U	1.98 U	0.864 U	0.576 U	**7.30 J**	0.378 U	0.873 U	0.621 U
RP-23-125	11/10/2006	1030-01	Primary	0.952 U	6.90 U	0.718 U	0.773 U	0.814 U	1.52 U	0.773 U	1.24 U	1.66 U	0.814 U	0.883 U	0.828 U	0.745 U	**21.0**	0.524 U	3.04 U	1.32 U	0.883 U	**5.30 J**	0.580 U	1.34 U	0.952 U
RP-24-30	11/20/2006	1046-01A	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.059 U	0.110 U	0.056 U	0.090 U	0.120 U	**0.500 J**	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	**0.320 J**	0.069 U
RP-24-60	11/20/2006	1047-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.059 U	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	0.069 U
RP-24-73	11/21/2006	1049-01	Primary	0.069 U	0.500 U	0.052 U	0.056 U	0.059 U	0.110 U	0.056 U	0.090 U	0.120 U	0.059 U	0.064 U	0.060 U	0.054 U	0.089 U	0.038 U	0.220 U	0.096 U	0.064 U	0.092 U	0.042 U	0.097 U	0.069 U
RP-24-85	11/21/2006	1048-01	Primary	0.821 U	5.95 U	0.619 U	0.666 U	0.702 U	1.31 U	0.666 U	1.07 U	1.43 U	0.702 U	0.762 U	0.714 U	0.643 U	**12.0**	0.452 U	2.62 U	1.14 U	0.762 U	**8.50 J**	0.500 U	1.15 U	0.821 U
RP-24-85	11/21/2006	1048-02	Duplicate	1.38 U	10.0 U	1.04 U	1.12 U	1.18 U	2.20 U	1.12 U	1.80 U	2.40 U	1.18 U	1.28 U	1.20 U	1.08 U	**12.0 J**	0.760 U	4.40 U	1.92 U	1.28 U	1.84 U	0.840 U	**7.30 J**	1.38 U

Notes:
BOLD = detection
U = not detected at or above the listed method

µg/L = micrograms per liter
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5B
Semivolatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Acenaphthene	Acenaphthylene	Anthracene	Benzoaanthracene	Benzoapyrene	Benzobfluoranthene	Benzoghiperylene	Benzokfluoranthene	Benzoic acid	Benzyl alcohol	Bis2-Chloroethoxy methane	Bis2-Chloroethyl ether	Bis2-Chloroisopropyl ether	bis2-Ethylhexyl phthalate	4-Bromophenylphenyl ether	Butylbenzylphthalate	4-Chloro-3-methylphenol	4-Chloroaniline	2-Chloronapthalene	2-Chlorophenol	4-Chlorophenylphenyl ether	Chrysene	Dibenzoa,hanthracene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	**75.0**	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 UJ	2.40 U	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	**1.30 J**	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
MW-03-I(60)	11/16/2006	1042-01	Primary	**2.00 J**	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	**1.70 J**	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
MW-03-81	11/16/2006	1041-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	**9.90**	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
MW-03-137	11/17/2006	1043-01	Primary	14.7 U	14.1 U	13.4 U	12.7 U	12.1 U	26.1 U	14.1 U	16.1 U	12.7 R	32.2 U	13.4 U	11.4 U	11.4 U	17.4 U	12.7 U	10.7 U	13.4 UJ	26.8 UJ	10.0 U	5.16 UJ	15.4 U	10.0 U	14.1 U
MW-03-141	11/17/2006	1044-01	Primary	4.40 U	4.20 U	4.00 U	3.80 U	3.60 U	7.80 U	4.20 UJ	4.80 U	3.80 R	9.60 U	4.00 U	3.40 U	3.40 U	5.20 U	3.80 U	3.20 U	4.00 UJ	8.00 UJ	3.00 U	1.54 UJ	4.60 U	3.00 U	4.20 U
RP-06-30	11/27/2006	1050-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-06-87	11/27/2006	1051-01	Primary	22.0 U	21.0 U	20.0 U	19.0 U	18.0 U	39.0 UJ	21.0 U	24.0 U	19.0 R	48.0 U	20.0 U	17.0 U	17.0 U	26.0 U	19.0 U	16.0 U	20.0 UJ	40.0 UJ	15.0 U	7.70 UJ	23.0 U	15.0 U	21.0 UJ
RP-06-95	11/27/2006	1052-01	Primary	31.5 U	30.0 U	28.6 U	27.2 U	25.7 U	55.8 U	30.0 U	34.3 U	27.2 R	68.6 U	28.6 U	24.3 U	24.3 U	37.2 U	27.2 U	22.9 U	28.6 U	57.2 UJ	21.5 U	11.0 U	32.9 U	21.5 U	30.0 U
RP-06-105	11/28/2006	1053-01	Primary	22.0 U	21.0 U	20.0 U	19.0 U	18.0 U	39.0 U	21.0 U	24.0 U	19.0 R	48.0 UJ	20.0 U	17.0 U	17.0 U	26.0 U	19.0 U	16.0 U	20.0 U	40.0 UJ	15.0 U	7.70 U	23.0 U	15.0 U	21.0 U
RP-20-25	11/10/2006	1032-01	Primary	**20.0**	2.10 U	**1.80 J**	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	**1.10 J**	4.80 U	2.00 U	1.70 U	1.70 U	**0.590 J**	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-20-97	11/10/2006	1031-01	Primary	**0.620 J**	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-20-110	11/13/2006	1033-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	**1.30 J**	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-21-28	11/14/2006	1035-01	Primary	**52.0**	2.10 U	**2.10 J**	**0.430 J**	1.80 U	3.90 U	2.10 U	2.40 U	**1.30 J**	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	**0.550 J**	2.10 U
RP-21-125	11/14/2006	1034-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	**0.980 J**	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-21-150	11/15/2006	1036-01	Primary	4.40 U	4.20 U	4.00 U	3.80 U	3.60 U	7.80 U	4.20 UJ	4.80 U	3.80 R	9.60 U	4.00 U	3.40 U	3.40 U	5.20 U	3.80 U	3.20 U	4.00 UJ	8.00 UJ	3.00 U	1.54 UJ	4.60 U	3.00 U	4.20 U
RP-21-150	11/15/2006	1036-02	Duplicate	4.40 U	4.20 U	4.00 U	3.80 U	3.60 U	7.80 U	4.20 UJ	4.80 U	3.80 R	9.60 U	4.00 U	3.40 U	3.40 U	5.20 U	3.80 U	3.20 U	4.00 UJ	8.00 UJ	3.00 U	1.54 UJ	4.60 U	3.00 U	4.20 U
RP-22-29	11/07/2006	1024-01	Primary	**1.90 J**	**1.50 J**	**1.30 J**	1.90 U	1.80 U	3.90 U	**0.470 J**	2.40 UJ	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	**0.530 J**	2.10 U
RP-22-75	11/07/2006	1025-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 UJ	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-22-151	11/08/2006	1026-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 UJ	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-23-30	11/08/2006	1027-01	Primary	**13.0**	**1.20 J**	**2.80 J**	**1.00 J**	**1.20 J**	**0.650 J**	**1.20 J**	**0.910 J**	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	**0.860 J**	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	**1.50 J**	2.10 U
RP-23-85	11/09/2006	1028-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 UJ	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-23-100	11/09/2006	1029-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 UJ	1.90 R	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	**1.20 J**	2.30 U	1.50 U	2.10 U
RP-23-125	11/10/2006	1030-01	Primary	11.0 U	10.5 U	10.0 U	9.50 U	9.00 U	19.5 U	10.5 U	12.0 U	9.50 R	24.0 U	10.0 U	8.50 U	8.50 U	13.0 U	9.50 U	8.00 U	10.0 UJ	20.0 UJ	7.50 U	3.85 UJ	11.5 U	7.50 U	10.5 U
RP-24-30	11/20/2006	1046-01A	Primary	7.26 U	6.93 U	6.60 U	6.27 U	5.94 U	12.9 U	6.93 U	7.92 U	**1.90 J**	15.8 U	6.60 U	5.61 U	5.61 U	**1.80 J**	6.27 U	5.28 U	6.60 UJ	13.2 UJ	4.95 U	2.54 UJ	7.59 U	4.95 U	6.93 U
RP-24-60	11/20/2006	1047-01	Primary	**2.10 J**	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 U	2.40 U	**0.450 J**	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-24-73	11/21/2006	1049-01	Primary	2.20 U	2.10 U	2.00 U	1.90 U	1.80 U	3.90 U	2.10 UJ	2.40 U	1.90 UJ	4.80 U	2.00 U	1.70 U	1.70 U	2.60 U	1.90 U	1.60 U	2.00 UJ	4.00 UJ	1.50 U	0.770 UJ	2.30 U	1.50 U	2.10 U
RP-24-85	11/21/2006	1048-01	Primary	11.0 U	10.5 U	10.0 U	9.50 U	9.00 U	19.5 U	10.5 U	12.0 U	9.50 UJ	24.0 U	10.0 U	8.50 U	8.50 U	13.0 U	9.50 U	8.00 U	10.0 UJ	20.0 UJ	7.50 U	3.85 UJ	11.5 U	7.50 U	10.5 U
RP-24-85	11/21/2006	1048-02	Duplicate	11.0 U	10.5 U	10.0 U	9.50 U	9.00 U	19.5 U	10.5 U	12.0 U	9.50 UJ	24.0 U	10.0 U	8.50 U	8.50 U	13.0 U	9.50 U	8.00 U	10.0 UJ	20.0 UJ	7.50 U	3.85 UJ	11.5 U	7.50 U	10.5 U

Notes:
BOLD = detection
U = not detected at or above the listed
µg/L = micrograms per liter
Method detection limit
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5B
Semivolatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Dibenzofuran	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	3,3'-Dichlorobenzidine	2,4-Dichlorophenol	2,6-Dichlorophenol	Diethylphthalate	2,4-Dimethylphenol	Dimethylphthalate	Di-n-butylphthalate	Di-n-octyl phthalate	2,4-Dinitrophenol	2,4-Dinitrotoluene	2,6-Dinitrotoluene	Fluoranthene	Fluorene	Hexachlorobenzene	Hexachlorobutadiene	Hexachlorocyclopentadiene	Hexachloroethane	Indeno1,2,3-cdpyrene	Isophorone	2-Methyl-4,6-dinitrophenol
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	**0.900 J**	1.10 U	1.40 U	**0.450 J**	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	2.00 U	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	**0.770 J**	**11.0**	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 UJ	1.10 U	2.60 UJ
MW-03-I(60)	11/16/2006	1042-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	2.00 U	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
MW-03-81	11/16/2006	1041-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	**12.0**	1.60 UJ	2.00 U	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
MW-03-137	11/17/2006	1043-01	Primary	15.4 U	**420**	**20.0 J**	**190**	13.4 UJ	5.96 UJ	5.69 UJ	15.4 U	10.7 UJ	13.4 U	15.4 U	17.4 UJ	53.6 UJ	12.1 U	10.0 U	14.1 U	16.1 U	8.71 U	12.7 U	14.7 UJ	13.4 U	14.7 U	7.37 U	17.4 UJ
MW-03-141	11/17/2006	1044-01	Primary	4.60 U	**130**	**6.50 J**	**59.0**	4.00 UJ	1.78 UJ	1.70 UJ	4.60 U	3.20 UJ	**60.0**	4.60 U	5.20 UJ	16.0 UJ	3.60 U	3.00 U	4.20 U	4.80 U	2.60 U	3.80 U	4.40 UJ	4.00 U	4.40 UJ	2.20 U	5.20 UJ
RP-06-30	11/27/2006	1050-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	2.00 U	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-06-87	11/27/2006	1051-01	Primary	23.0 U	**620 J**	**19.0 J**	**190**	20.0 UJ	8.90 UJ	8.50 UJ	23.0 U	16.0 UJ	20.0 U	23.0 U	26.0 UJ	80.0 UJ	18.0 U	15.0 U	21.0 U	24.0 U	13.0 U	19.0 U	22.0 UJ	20.0 U	22.0 UJ	11.0 U	26.0 UJ
RP-06-95	11/27/2006	1052-01	Primary	32.9 U	**880**	**32.0 J**	**310**	28.6 UJ	12.7 U	12.2 U	32.9 U	22.9 U	28.6 U	32.9 U	37.2 UJ	114 UJ	25.7 U	21.5 U	30.0 U	34.3 U	18.6 U	27.2 U	31.5 UJ	28.6 U	31.5 U	15.7 U	37.2 U
RP-06-105	11/28/2006	1053-01	Primary	23.0 U	**740**	**27.0 J**	**260**	20.0 UJ	8.90 U	8.50 U	23.0 U	16.0 U	**12.0 J**	23.0 U	26.0 U	80.0 U	18.0 U	15.0 U	21.0 U	24.0 U	13.0 U	19.0 U	22.0 UJ	20.0 U	22.0 U	11.0 U	26.0 U
RP-20-25	11/10/2006	1032-01	Primary	**0.940 J**	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	2.00 U	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	**2.70 J**	**5.70 J**	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-20-97	11/10/2006	1031-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	**11.0**	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-20-110	11/13/2006	1033-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	**19.0**	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-21-28	11/14/2006	1035-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	2.00 U	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	**12.0**	**20.0**	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-21-125	11/14/2006	1034-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	**18.0**	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-21-150	11/15/2006	1036-01	Primary	4.60 U	**130**	**5.70 J**	**56.0**	4.00 UJ	1.78 UJ	1.70 UJ	4.60 U	3.20 UJ	**1.10 J**	4.60 U	5.20 UJ	16.0 UJ	3.60 U	3.00 U	4.20 U	4.80 U	2.60 U	3.80 U	4.40 UJ	4.00 U	4.40 UJ	2.20 U	5.20 UJ
RP-21-150	11/15/2006	1036-02	Duplicate	4.60 U	**120**	**5.60 J**	**55.0**	4.00 UJ	1.78 UJ	1.70 UJ	4.60 U	3.20 UJ	**0.990 J**	4.60 U	5.20 UJ	16.0 UJ	3.60 U	3.00 U	4.20 U	4.80 U	2.60 U	3.80 U	4.40 UJ	4.00 U	4.40 UJ	2.20 U	5.20 UJ
RP-22-29	11/07/2006	1024-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 UJ	1.60 UJ	2.00 UJ	2.30 U	2.60 U	8.00 UJ	1.80 U	1.50 U	**4.60 J**	**1.30 J**	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-22-75	11/07/2006	1025-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 UJ	1.60 UJ	2.00 UJ	2.30 U	2.60 U	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 UJ	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-22-151	11/08/2006	1026-01	Primary	2.30 U	**62.0**	**3.00 J**	**29.0**	2.00 UJ	0.890 UJ	0.850 UJ	2.30 UJ	1.60 UJ	**3.70 J**	2.30 U	2.60 U	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 UJ	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-23-30	11/08/2006	1027-01	Primary	**0.600 J**	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 UJ	1.60 UJ	**1.10 J**	2.30 U	2.60 U	8.00 UJ	1.80 U	1.50 U	**7.00 J**	**4.70 J**	1.30 U	1.90 U	2.20 U	2.00 U	**0.720 J**	1.10 U	2.60 UJ
RP-23-85	11/09/2006	1028-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 UJ	1.60 UJ	**12.0 J**	2.30 U	2.60 U	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 UJ	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-23-100	11/09/2006	1029-01	Primary	2.30 U	**190**	**8.50 J**	**99.0**	2.00 UJ	**1.20 J**	0.850 UJ	2.30 UJ	1.60 UJ	**1.90 J**	2.30 U	2.60 U	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 UJ	1.30 U	1.90 U	2.20 U	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-23-125	11/10/2006	1030-01	Primary	11.5 U	**380**	**17.0 J**	**150**	10.0 UJ	4.45 UJ	4.25 UJ	11.5 U	8.00 UJ	**12.0 J**	11.5 U	13.0 UJ	40.0 UJ	9.00 U	7.50 U	10.5 U	12.0 U	6.50 U	9.50 U	11.0 U	10.0 U	11.0 U	5.50 U	13.0 UJ
RP-24-30	11/20/2006	1046-01A	Primary	7.59 U	3.63 U	4.62 U	5.61 U	6.60 UJ	2.94 UJ	2.80 UJ	7.59 U	5.28 UJ	**190**	7.59 U	8.58 UJ	26.4 UJ	5.94 U	4.95 U	6.93 U	7.92 U	4.29 U	6.27 U	7.26 UJ	6.60 U	7.26 U	3.63 U	8.58 UJ
RP-24-60	11/20/2006	1047-01	Primary	2.30 U	1.10 U	1.40 U	1.70 U	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	**35.0**	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	**1.00 J**	**2.50 J**	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 U	1.10 U	2.60 UJ
RP-24-73	11/21/2006	1049-01	Primary	2.30 U	**5.60 J**	1.40 U	**1.90 J**	2.00 UJ	0.890 UJ	0.850 UJ	2.30 U	1.60 UJ	**5.60 J**	2.30 U	2.60 UJ	8.00 UJ	1.80 U	1.50 U	2.10 U	2.40 U	1.30 U	1.90 U	2.20 UJ	2.00 U	2.20 UJ	1.10 U	2.60 UJ
RP-24-85	11/21/2006	1048-01	Primary	11.5 U	**320**	**13.0 J**	**120**	10.0 UJ	4.45 UJ	4.25 UJ	11.5 U	8.00 UJ	**20.0 J**	11.5 U	13.0 UJ	40.0 UJ	9.00 U	7.50 U	10.5 U	12.0 U	6.50 U	9.50 U	11.0 UJ	10.0 U	11.0 U	5.50 U	13.0 UJ
RP-24-85	11/21/2006	1048-02	Duplicate	11.5 U	**310**	**13.0 J**	**120**	10.0 UJ	4.45 UJ	4.25 UJ	11.5 U	8.00 UJ	**20.0 J**	11.5 U	13.0 UJ	40.0 UJ	9.00 U	7.50 U	10.5 U	12.0 U	6.50 U	9.50 U	11.0 UJ	10.0 U	11.0 U	5.50 U	13.0 UJ

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/L = micrograms per liter
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5B
Semivolatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	2-Methylnaphthalene	2-Methylphenol	4-Methylphenol P-Cresol	Naphthalene	2-Nitroaniline	3-Nitroaniline	4-Nitroaniline	2-Nitrophenol	4-Nitrophenol	N-Nitrosodimethylamine	N-Nitrosodi-n-propyl amine	N-Nitrosodiphenylamine	Pentachlorophenol	Phenanthrene	Phenol	Pyrene	2,3,4,6-Tetrachlorophenol	1,2,4-Trichlorobenzene	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	2.20 U	1.10 UJ	3.40 UJ	**1.70 J**	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	**0.740 J**	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
MW-03-I(60)	11/16/2006	1042-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
MW-03-81	11/16/2006	1041-01	Primary	2.20 U	1.10 UJ	3.40 UJ	**0.900 J**	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
MW-03-137	11/17/2006	1043-01	Primary	14.7 U	7.37 UJ	22.8 UJ	15.4 U	14.1 U	14.1 UJ	16.7 U	5.76 UJ	53.6 UJ	4.22 UJ	8.71 U	8.04 U	14.1 UJ	12.7 U	5.83 UJ	12.7 U	12.1 UJ	10.7 U	9.38 UJ	7.37 UJ
MW-03-141	11/17/2006	1044-01	Primary	4.40 U	2.20 UJ	6.80 UJ	4.60 U	4.20 U	4.20 UJ	5.00 U	1.72 UJ	16.0 UJ	1.26 UJ	2.60 U	2.40 U	4.20 UJ	3.80 U	1.74 UJ	3.80 U	3.60 UJ	3.20 U	2.80 UJ	2.20 UJ
RP-06-30	11/27/2006	1050-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 U	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-06-87	11/27/2006	1051-01	Primary	22.0 U	11.0 UJ	34.0 UJ	23.0 U	21.0 U	21.0 UJ	25.0 U	8.60 UJ	80.0 UJ	6.30 U	13.0 U	12.0 U	21.0 UJ	19.0 U	8.70 UJ	19.0 U	18.0 UJ	16.0 U	14.0 UJ	11.0 UJ
RP-06-95	11/27/2006	1052-01	Primary	31.5 U	15.7 U	48.6 U	32.9 U	30.0 U	30.0 UJ	35.8 U	12.3 U	114 U	9.01 U	18.6 U	17.2 U	30.0 U	27.2 U	12.4 UJ	27.2 U	25.7 U	22.9 U	20.0 U	15.7 U
RP-06-105	11/28/2006	1053-01	Primary	22.0 U	11.0 U	34.0 U	23.0 U	21.0 U	21.0 UJ	25.0 U	8.60 U	80.0 U	6.30 UJ	13.0 U	12.0 U	21.0 U	19.0 U	8.70 UJ	19.0 U	18.0 U	16.0 U	14.0 U	11.0 U
RP-20-25	11/10/2006	1032-01	Primary	**11.0**	1.10 UJ	3.40 UJ	**28.0**	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 U	1.30 U	1.20 U	2.10 UJ	**14.0**	0.870 UJ	**3.00 J**	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-20-97	11/10/2006	1031-01	Primary	**0.490 J**	1.10 UJ	3.40 UJ	**4.10 J**	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 U	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-20-110	11/13/2006	1033-01	Primary	2.20 U	1.10 UJ	3.40 UJ	**1.80 J**	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-21-28	11/14/2006	1035-01	Primary	**1.40 J**	1.10 UJ	3.40 UJ	**2.80 J**	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	**0.900 J**	0.870 UJ	**13.0**	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-21-125	11/14/2006	1034-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-21-150	11/15/2006	1036-01	Primary	4.40 U	2.20 UJ	6.80 UJ	4.60 U	4.20 U	4.20 UJ	5.00 U	1.72 UJ	16.0 UJ	1.26 UJ	2.60 U	2.40 U	4.20 UJ	3.80 U	1.74 UJ	3.80 U	3.60 UJ	3.20 U	2.80 UJ	2.20 UJ
RP-21-150	11/15/2006	1036-02	Duplicate	4.40 U	2.20 UJ	6.80 UJ	4.60 U	4.20 U	4.20 UJ	5.00 U	1.72 UJ	16.0 UJ	1.26 UJ	2.60 U	2.40 U	4.20 UJ	3.80 U	1.74 UJ	3.80 U	3.60 UJ	3.20 U	2.80 UJ	2.20 UJ
RP-22-29	11/07/2006	1024-01	Primary	**1.20 J**	1.10 UJ	3.40 UJ	**1.40 J**	2.10 UJ	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 UJ	1.20 U	2.10 UJ	**6.30 J**	0.870 UJ	**4.40 J**	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-22-75	11/07/2006	1025-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 UJ	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 UJ	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-22-151	11/08/2006	1026-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 UJ	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 UJ	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-23-30	11/08/2006	1027-01	Primary	**6.50 J**	1.10 UJ	**1.10 J**	**1.80 J**	2.10 UJ	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 UJ	1.20 U	2.10 UJ	**8.50 J**	0.870 UJ	**6.60 J**	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-23-85	11/09/2006	1028-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 UJ	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 UJ	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-23-100	11/09/2006	1029-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 UJ	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 UJ	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-23-125	11/10/2006	1030-01	Primary	11.0 U	5.50 UJ	17.0 UJ	11.5 U	10.5 U	10.5 UJ	12.5 U	4.30 UJ	40.0 UJ	3.15 U	6.50 U	6.00 U	10.5 UJ	9.50 U	4.35 UJ	9.50 U	9.00 UJ	8.00 U	7.00 UJ	5.50 UJ
RP-24-30	11/20/2006	1046-01A	Primary	7.26 U	3.63 UJ	**2.40 J**	7.59 U	6.93 U	6.93 UJ	8.25 U	2.84 UJ	26.4 UJ	2.08 UJ	4.29 U	3.96 U	6.93 UJ	6.27 U	2.87 UJ	6.27 U	5.94 UJ	5.28 U	4.62 UJ	3.63 UJ
RP-24-60	11/20/2006	1047-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	**0.680 J**	0.870 UJ	**0.590 J**	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-24-73	11/21/2006	1049-01	Primary	2.20 U	1.10 UJ	3.40 UJ	2.30 U	2.10 U	2.10 UJ	2.50 U	0.860 UJ	8.00 UJ	0.630 UJ	1.30 U	1.20 U	2.10 UJ	1.90 U	0.870 UJ	1.90 U	1.80 UJ	1.60 U	1.40 UJ	1.10 UJ
RP-24-85	11/21/2006	1048-01	Primary	11.0 U	5.50 UJ	17.0 UJ	11.5 U	10.5 U	10.5 UJ	12.5 U	4.30 UJ	40.0 UJ	3.15 UJ	6.50 U	6.00 U	10.5 UJ	9.50 U	4.35 UJ	9.50 U	9.00 UJ	8.00 U	7.00 UJ	5.50 UJ
RP-24-85	11/21/2006	1048-02	Duplicate	11.0 U	5.50 UJ	17.0 UJ	11.5 U	10.5 U	10.5 UJ	12.5 U	4.30 UJ	40.0 UJ	3.15 UJ	6.50 U	6.00 U	10.5 UJ	9.50 U	4.35 UJ	9.50 U	9.00 UJ	8.00 U	7.00 UJ	5.50 UJ

Notes:
BOLD = detection
U = not detected at or above the listed
µg/L = micrograms per liter
Method detection limit
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5C
Chlorinated Herbicides Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	2,4,5-T	2,4,5-TP Silvex	2,4-D	2,4-DB	Bromoxynil	Dalapon	Dicamba	Dichlorprop	Dinoseb	MCPA	MCPP
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
MW-03-I(60)	11/16/2006	1042-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 UJ	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
MW-03-81	11/16/2006	1041-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 UJ	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
MW-03-137	11/17/2006	1043-01	Primary	0.200 U	**2.30**	1.00 U	1.00 U	0.060 UJ	2.50 UJ	0.100 U	1.00 U	1.90 UJ	190 U	175 U
MW-03-141	11/17/2006	1044-01	Primary	0.080 U	**0.800**	0.400 U	0.400 U	0.024 UJ	1.00 UJ	0.040 U	0.400 U	0.760 UJ	76.0 U	70.0 U
RP-06-30	11/27/2006	1050-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 UJ	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-06-87	11/27/2006	1051-01	Primary	4.00 U	**44.0**	20.0 U	20.0 U	1.20 UJ	50.0 UJ	2.00 U	20.0 U	38.0 UJ	3,800 U	3,500 U
RP-06-95	11/27/2006	1052-01	Primary	8.00 U	**58.0**	40.0 U	40.0 U	2.40 UJ	100 UJ	4.00 U	40.0 U	76.0 UJ	7,600 U	7,000 U
RP-06-105	11/28/2006	1053-01	Primary	4.00 U	**53.0**	20.0 U	20.0 U	1.20 UJ	50.0 UJ	2.00 U	20.0 U	38.0 UJ	3,800 U	3,500 U
RP-20-25	11/10/2006	1032-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-20-97	11/10/2006	1031-01	Primary	0.040 U	**0.300**	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-20-110	11/13/2006	1033-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-21-28	11/14/2006	1035-01	Primary	0.040 U	**0.180 J**	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-21-125	11/14/2006	1034-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-21-150	11/15/2006	1036-01	Primary	0.080 U	**0.830**	0.400 U	0.400 U	0.024 U	1.00 UJ	0.040 U	0.400 U	0.760 UJ	76.0 UJ	70.0 U
RP-21-150	11/15/2006	1036-02	Duplicate	0.080 U	**1.00**	0.400 U	0.400 U	0.024 U	1.00 UJ	0.040 U	0.400 U	0.760 UJ	76.0 UJ	70.0 U
RP-22-29	11/07/2006	1024-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 U	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-22-75	11/07/2006	1025-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 U	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-22-151	11/08/2006	1026-01	Primary	0.120 U	**1.30 J**	0.600 U	0.600 U	0.036 U	1.50 UJ	0.060 U	0.600 U	1.14 UJ	114 U	105 U
RP-23-30	11/08/2006	1027-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-23-85	11/09/2006	1028-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 U	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-23-100	11/09/2006	1029-01	Primary	1.20 U	**11.0 J**	6.00 U	6.00 U	0.360 U	15.0 UJ	0.600 U	6.00 U	11.4 UJ	1,140 U	1,050 U
RP-23-125	11/10/2006	1030-01	Primary	4.00 U	**34.0 J**	20.0 U	20.0 U	1.20 U	50.0 UJ	2.00 U	20.0 U	38.0 UJ	3,800 U	3,500 U
RP-24-30	11/20/2006	1046-01A	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 UJ	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-24-60	11/20/2006	1047-01	Primary	0.040 U	0.038 U	0.200 U	0.200 U	0.012 UJ	0.500 UJ	0.020 U	0.200 U	0.380 UJ	38.0 U	35.0 U
RP-24-73	11/21/2006	1049-01	Primary	0.080 U	**0.640**	0.400 U	0.400 U	0.024 UJ	1.00 UJ	0.040 U	0.400 U	0.760 UJ	76.0 U	70.0 U
RP-24-85	11/21/2006	1048-01	Primary	4.00 U	**27.0**	20.0 U	20.0 U	1.20 UJ	50.0 UJ	2.00 U	20.0 U	38.0 UJ	3,800 U	3,500 U
RP-24-85	11/21/2006	1048-02	Duplicate	4.00 U	**29.0**	20.0 U	20.0 U	1.20 UJ	50.0 UJ	2.00 U	20.0 U	38.0 UJ	3,800 U	3,500 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/L = micrograms per liter
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5D
Organochlorine Insecticides Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	beta-BHC	delta-BHC	gamma-BHC Lindane	Chlordane	alpha-Chlordane	gamma-Chlordane	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin Ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
MW-03-I(60)	11/16/2006	1042-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
MW-03-81	11/16/2006	1041-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
MW-03-137	11/17/2006	1043-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
MW-03-141	11/17/2006	1044-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-06-30	11/27/2006	1050-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-06-87	11/27/2006	1051-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-06-95	11/27/2006	1052-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-06-105	11/28/2006	1053-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-20-25	11/10/2006	1032-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-20-97	11/10/2006	1031-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-20-110	11/13/2006	1033-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-21-28	11/14/2006	1035-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-21-125	11/14/2006	1034-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-21-150	11/15/2006	1036-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-21-150	11/15/2006	1036-02	Duplicate	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-22-29	11/07/2006	1024-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	**0.055 N**	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-22-75	11/07/2006	1025-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-22-151	11/08/2006	1026-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-23-30	11/08/2006	1027-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-23-85	11/09/2006	1028-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-23-100	11/09/2006	1029-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-23-125	11/10/2006	1030-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-24-30	11/20/2006	1046-01A	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-24-60	11/20/2006	1047-01	Primary	0.010 UJ	0.008 UJ	0.007 UJ	0.005 UJ	0.005 UJ	0.010 UJ	0.005 UJ	0.005 UJ	0.069 UJ	0.005 UJ	0.004 UJ	0.009 UJ	0.005 UJ	0.009 UJ	0.009 UJ	0.009 UJ	0.008 UJ	0.009 UJ	0.004 UJ	0.005 UJ	0.040 UJ	0.320 UJ
RP-24-73	11/21/2006	1049-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-24-85	11/21/2006	1048-01	Primary	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U
RP-24-85	11/21/2006	1048-02	Duplicate	0.010 U	0.008 U	0.007 U	0.005 U	0.005 U	0.010 U	0.005 U	0.005 U	0.069 U	0.005 U	0.004 U	0.009 U	0.005 U	0.009 U	0.009 U	0.009 U	0.008 U	0.009 U	0.004 U	0.005 U	0.040 U	0.320 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/L = micrograms per liter
J = estimated result
N = the analyte has been presumptively identified; the associated analytical result is both qualitatively and quantitatively uncertain
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5E
Dioxin-Furan Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	2,3,7,8-TCDD	1,2,3,7,8-PeCDD	1,2,3,4,7,8-HxCDD	1,2,3,6,7,8-HxCDD	1,2,3,7,8,9-HxCDD	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8,9-OCDD	2,3,7,8-TCDF	1,2,3,7,8-PeCDF	2,3,4,7,8-PeCDF	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDF	2,3,4,6,7,8-HxCDF	1,2,3,7,8,9-HxCDF	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,6,7,8,9-OCDF	Total TCDD	Total PeCDD	Total HxCDD	Total HpCDD	Total TCDF	Total PeCDF	Total HxCDF	Total HpCDF	Dioxin TEQ WHO (2005)	Furans TEQ WHO (2005)	Total TEQ WHO (2005)
				pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L	pg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	0.843 U	1.85 U	2.32 U	1.39 U	1.52 U	2.75 U	15.8 U	0.818 U	2.42 U	2.03 U	0.964 U	1.25 U	1.88 U	2.38 U	2.74 U	2.93 U	1.98 U	0.843 U	1.85 U	1.39 U	2.75 U	0.818 U	2.03 U	0.964 U	2.74 U	NC	NC	NC
MW-03-I(60)	11/16/2006	1042-01	Primary	0.846 U	1.86 U	2.33 U	1.40 U	1.52 U	2.76 U	15.8 U	0.821 U	2.42 U	2.03 U	0.968 U	1.26 U	1.89 U	2.39 U	2.75 U	2.94 U	1.98 U	0.846 U	1.86 U	1.40 U	2.76 U	0.821 U	2.03 U	0.968 U	2.75 U	NC	NC	NC
MW-03-81	11/16/2006	1041-01	Primary	0.884 U	1.94 U	2.43 U	1.46 U	1.59 U	2.88 U	16.5 U	0.858 U	2.53 U	2.13 U	1.01 U	1.31 U	1.98 U	2.50 U	2.87 U	3.07 U	2.07 U	0.884 U	1.94 U	1.46 U	2.88 U	0.858 U	2.13 U	1.01 U	2.87 U	NC	NC	NC
MW-03-137	11/17/2006	1043-01	Primary	0.839 U	1.84 U	2.31 U	1.38 U	1.51 U	2.73 U	19.4 U	0.814 U	2.40 U	2.02 U	0.960 U	1.25 U	1.88 U	2.37 U	2.72 U	2.92 U	1.97 U	0.839 U	1.84 U	1.38 U	2.73 U	**3.28 J**	2.02 U	0.960 U	2.72 U	NC	NC	NC
MW-03-141	11/17/2006	1044-01	Primary	0.837 U	1.84 U	2.30 U	1.38 U	1.51 U	2.73 U	15.7 U	0.812 U	2.40 U	2.01 U	0.958 U	1.24 U	1.87 U	2.36 U	2.72 U	2.91 U	1.96 U	0.837 U	1.84 U	1.38 U	2.73 U	**2.10 J**	2.01 U	0.958 U	2.72 U	NC	NC	NC
RP-06-30	11/27/2006	1050-01	Primary	0.857 U	1.88 U	2.36 U	1.41 U	1.54 U	2.79 U	55.7 U	0.831 U	2.46 U	2.06 U	0.980 U	1.27 U	1.92 U	2.42 U	2.78 U	2.98 U	2.01 U	0.857 U	1.88 U	1.41 U	8.90 U	0.831 U	2.06 U	0.980 U	2.78 U	NC	NC	NC
RP-06-87	11/27/2006	1051-01	Primary	0.843 U	**6.43 J**	**4.94 NJ**	**4.42 NJ**	**4.96 NJ**	5.49 U	30.6 U	0.818 U	**6.96 J**	**6.06 J**	**5.24 J**	**4.96 J**	**4.25 J**	**4.79 J**	2.74 U	2.93 U	8.81 U	0.843 U	**6.43 J**	**14.3 NJ**	5.49 U	**23.7 J**	**13.0 J**	**19.2 J**	**2.74 U**	**6.43**	**3.95**	**10.38**
RP-06-95	11/27/2006	1052-01	Primary	0.844 U	1.85 U	2.32 U	1.39 U	1.52 U	2.75 U	16.9 U	0.819 U	2.42 U	2.03 U	0.966 U	1.25 U	1.89 U	2.38 U	2.74 U	2.94 U	1.98 U	0.844 U	1.85 U	1.39 U	2.75 U	**18.2 J**	2.03 U	0.966 U	2.74 U	NC	NC	NC
RP-06-105	11/28/2006	1053-01	Primary	0.844 U	1.85 U	2.32 U	1.39 U	1.52 U	3.02 U	24.0 U	0.819 U	2.42 U	2.03 U	0.966 U	1.25 U	1.89 U	2.38 U	2.74 U	2.94 U	1.98 U	0.844 U	1.85 U	1.39 U	3.02 U	**12.1 J**	2.03 U	0.966 U	2.74 U	NC	NC	NC
RP-20-25	11/10/2006	1032-01	Primary	0.841 U	1.88 U	2.31 U	1.48 U	2.32 U	2.74 U	**85.8 J**	**2.04 J**	4.59 U	3.46 U	6.01 U	2.87 U	2.53 U	3.77 U	**5.78**	2.92 U	9.02 U	0.841 U	1.88 U	5.69 U	11.7 U	4.68 U	10.2 U	20.0 U	11.2 J	**0.03**	**0.26**	**0.29**
RP-20-97	11/10/2006	1031-01	Primary	0.884 U	1.94 U	2.43 U	1.46 U	1.59 U	2.88 U	16.5 U	0.858 U	2.53 U	2.13 U	1.01 U	1.31 U	1.98 U	2.50 U	2.87 U	3.07 U	2.07 U	0.884 U	1.94 U	1.46 U	2.88 U	0.858 U	2.13 U	1.01 U	2.87 U	NC	NC	NC
RP-20-110	11/13/2006	1033-01	Primary	0.837 U	1.84 U	2.30 U	1.38 U	1.51 U	2.73 U	15.7 U	0.812 U	2.40 U	2.01 U	0.958 U	1.24 U	1.87 U	2.36 U	2.72 U	2.91 U	1.96 U	0.837 U	1.84 U	1.38 U	2.73 U	0.812 U	2.01 U	0.958 U	2.72 U	NC	NC	NC
RP-21-28	11/14/2006	1035-01	Primary	0.863 U	1.89 U	2.37 U	1.42 U	1.55 U	2.81 U	16.1 U	0.837 U	2.47 U	2.07 U	0.987 U	1.28 U	1.93 U	2.43 U	2.80 U	3.00 U	2.02 U	0.863 U	1.89 U	1.42 U	2.81 U	0.837 U	2.07 U	0.987 U	2.80 U	NC	NC	NC
RP-21-125	11/14/2006	1034-01	Primary	0.846 U	1.86 U	2.33 U	1.40 U	1.52 U	2.76 U	15.8 U	0.821 U	2.42 U	2.03 U	0.968 U	1.26 U	1.89 U	2.39 U	2.75 U	2.94 U	1.98 U	0.846 U	1.86 U	1.40 U	2.76 U	0.821 U	2.03 U	0.968 U	2.75 U	NC	NC	NC
RP-21-150	11/15/2006	1036-01	Primary	0.842 U	1.85 U	2.32 U	1.39 U	1.52 U	2.74 U	15.8 U	0.817 U	2.41 U	2.03 U	0.963 U	1.25 U	1.88 U	2.38 U	2.73 U	2.93 U	2.02 U	0.842 U	1.85 U	1.39 U	2.74 U	**2.93 J**	2.03 U	0.963 U	2.73 U	NC	NC	NC
RP-21-150	11/15/2006	1036-02	Duplicate	0.874 U	1.92 U	2.41 U	1.44 U	1.57 U	2.85 U	16.4 U	0.848 U	2.51 U	2.10 U	1.00 U	1.30 U	1.95 U	2.47 U	2.84 U	3.04 U	2.05 U	0.874 U	1.92 U	1.44 U	2.85 U	**2.85 J**	2.10 U	1.00 U	2.84 U	NC	NC	NC
RP-22-29	11/07/2006	1024-01	Primary	0.904 U	1.98 U	2.49 U	1.49 U	1.63 U	6.95 U	**59.8 J**	0.877 U	2.59 U	2.17 U	1.27 U	1.34 U	2.02 U	2.55 U	2.94 U	3.14 U	8.02 U	0.904 U	1.98 U	1.49 U	15.3 U	0.877 U	2.17 U	1.27 U	2.94 U	**0.02**	NC	**0.02**
RP-22-75	11/07/2006	1025-01	Primary	0.902 U	1.98 U	2.48 U	1.49 U	1.62 U	2.94 U	16.9 U	0.875 U	2.59 U	2.17 U	1.03 U	1.34 U	2.02 U	2.55 U	2.93 U	3.14 U	2.12 U	0.902 U	1.98 U	1.49 U	2.94 U	1.59 U	2.17 U	1.03 U	2.93 U	NC	NC	NC
RP-22-151	11/08/2006	1026-01	Primary	0.903 U	3.49 U	2.48 U	1.49 U	1.63 U	2.94 U	16.9 U	0.876 U	4.60 U	3.74 U	1.86 U	1.70 U	2.02 U	2.55 U	2.93 U	3.14 U	2.12 U	0.903 U	3.49 U	1.49 U	2.94 U	24.1 U	8.34 U	6.66 U	2.93 U	NC	NC	NC
RP-23-30	11/08/2006	1027-01	Primary	0.895 U	1.96 U	2.46 U	1.48 U	1.61 U	9.74 U	**87.0 J**	0.868 U	2.56 U	2.15 U	2.02 U	1.33 U	2.00 U	2.53 U	**3.00 J**	3.11 U	5.14 U	0.895 U	1.96 U	1.48 U	19.8 U	2.83 U	2.15 U	6.40 U	6.78 J	**0.03**	**0.03**	**0.06**
RP-23-85	11/09/2006	1028-01	Primary	**6.95 J**	8.89 U	6.50 U	5.22 U	2.56 U	3.93 U	17.5 U	**9.93**	10.6 U	7.94 U	5.43 U	5.39 U	2.39 U	2.64 U	3.03 U	3.25 U	2.24 U	**6.95 J**	8.89 U	14.3 U	3.93 U	6.72 U	18.6 U	15.6 U	3.03 U	**6.95**	**0.99**	**7.94**
RP-23-100	11/09/2006	1029-01	Primary	0.954 U	2.09 U	2.62 U	1.57 U	1.72 U	3.11 U	17.8 U	0.925 U	3.06 U	2.55 U	1.09 U	1.47 U	2.13 U	2.69 U	3.10 U	3.32 U	2.24 U	0.954 U	2.09 U	1.57 U	3.11 U	**56.3**	5.61 U	1.47 U	3.10 U	NC	NC	NC
RP-23-125	11/10/2006	1030-01	Primary	**3.84 J**	7.28 U	4.77 U	1.45 U	3.98 U	4.45 U	16.4 U	0.853 U	7.99 U	6.84 U	5.43 U	5.13 U	4.14 U	4.97 U	**3.52 J**	3.05 U	4.23 U	**3.84 J**	7.28 U	8.75 U	4.45 U	**49.0 J**	14.8 U	22.1 U	6.52 U	**3.84**	**0.04**	**3.88**
RP-24-30	11/20/2006	1046-01A	Primary	0.874 U	1.92 U	**4.80 J**	**35.4 J**	**12.0 J**	**940**	**9,720 J**	**14.3**	**24.4 J**	**20.5 J**	**82.5**	**26.4 J**	**16.3 J**	**10.9 J**	**346 J**	**31.2 J**	**1,130 J**	**8.77 J**	**19.6 J**	**215 J**	**1,850 J**	**69.1 J**	**207 J**	**561**	**1,180 J**	**17.54**	**26.03**	**43.57**
RP-24-60	11/20/2006	1047-01	Primary	0.868 U	1.90 U	2.39 U	1.43 U	1.56 U	2.83 U	16.2 U	0.842 U	2.49 U	2.09 U	0.993 U	1.29 U	1.94 U	2.45 U	2.82 U	3.02 U	2.04 U	0.868 U	1.90 U	1.43 U	2.83 U	0.842 U	2.09 U	0.993 U	2.82 U	NC	NC	NC
RP-24-73	11/21/2006	1049-01	Primary	0.839 U	1.84 U	2.31 U	1.38 U	1.51 U	**3.61 J**	**19.1 J**	0.814 U	2.40 U	2.02 U	0.960 U	1.25 U	1.88 U	2.37 U	2.72 U	2.92 U	**3.80 J**	0.839 U	1.84 U	1.38 U	**7.15 J**	0.814 U	2.02 U	0.960 U	2.72 U	**0.04**	**0.001**	**0.04**
RP-24-85	11/21/2006	1048-01	Primary	0.836 U	1.83 U	2.30 U	1.38 U	1.50 U	2.72 U	**37.0 J**	0.811 U	2.40 U	2.01 U	0.956 U	1.24 U	1.87 U	2.36 U	2.71 U	2.90 U	**7.15 J**	0.836 U	1.83 U	1.38 U	2.72 U	**1.46 J**	2.01 U	0.956 U	2.71 U	**0.01**	**0.002**	**0.01**
RP-24-85	11/21/2006	1048-02	Duplicate	0.883 U	1.94 U	2.43 U	1.46 U	1.59 U	**5.05 J**	**34.9 J**	0.857 U	2.53 U	2.12 U	1.01 U	1.31 U	1.97 U	2.49 U	2.87 U	3.07 U	**6.07 J**	0.883 U	1.94 U	1.46 U	**9.99 J**	**1.56 J**	2.12 U	1.01 U	2.87 U	**0.06**	**0.002**	**0.06**

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
pg/L = picograms per liter
J = estimated result
NJ = the analyte has been presumptively identified; the associated analytical result is estimated
UJ = not detected at or above the method detection limit; the limit is an approximate value
NC = not calculated due to non detected results
WHO, 2005. World Health Organization, http://www.who.int/ipcs/assessment/tef_update/en/index.html

TABLE 5F
Total Petroleum Hydrocarbons Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Diesel Range Organics	Residual Range Organics
				mg/L	mg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	**0.770**	0.087 U
MW-03-I(60)	11/16/2006	1042-01	Primary	**0.282**	0.087 U
MW-03-81	11/16/2006	1041-01	Primary	**0.261**	0.088 U
MW-03-137	11/17/2006	1043-01	Primary	**0.309**	0.087 U
MW-03-141	11/17/2006	1044-01	Primary	0.009 U	0.087 U
RP-06-30	11/27/2006	1050-01	Primary	0.009 U	0.087 U
RP-06-87	11/27/2006	1051-01	Primary	**0.738**	0.087 U
RP-06-95	11/27/2006	1052-01	Primary	**0.759**	0.087 U
RP-06-105	11/28/2006	1053-01	Primary	**0.676**	0.087 U
RP-20-25	11/10/2006	1032-01	Primary	**0.615**	0.087 U
RP-20-97	11/10/2006	1031-01	Primary	0.009 U	0.087 U
RP-20-110	11/13/2006	1033-01	Primary	**0.670**	0.087 U
RP-21-28	11/14/2006	1035-01	Primary	**0.605**	0.089 U
RP-21-125	11/14/2006	1034-01	Primary	**0.321**	0.087 U
RP-21-150	11/15/2006	1036-01	Primary	0.009 U	0.088 U
RP-21-150	11/15/2006	1036-02	Duplicate	0.009 U	0.087 U
RP-22-29	11/07/2006	1024-01	Primary	**1.20**	0.088 U
RP-22-75	11/07/2006	1025-01	Primary	0.009 U	0.088 U
RP-22-151	11/08/2006	1026-01	Primary	0.009 U	0.088 U
RP-23-30	11/08/2006	1027-01	Primary	**1.61**	**0.515**
RP-23-85	11/09/2006	1028-01	Primary	0.009 U	0.087 U
RP-23-100	11/09/2006	1029-01	Primary	**0.261**	0.087 U
RP-23-125	11/10/2006	1030-01	Primary	**0.269**	0.088 U
RP-24-30	11/20/2006	1046-01A	Primary	**3.81**	**1.85**
RP-24-60	11/20/2006	1047-01	Primary	**0.251**	0.240 U
RP-24-73	11/21/2006	1049-01	Primary	0.009 U	0.087 U
RP-24-85	11/21/2006	1048-01	Primary	**0.281**	0.087 U
RP-24-85	11/21/2006	1048-02	Duplicate	**0.282**	0.087 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
Total petroleum hydrocarbon results are not validated, according to RP standard practice
mg/L = milligrams per liter

TABLE 5G
Total Metals Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Aluminum	Arsenic	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Sodium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	55.0 U	3.30 U	1.00 U	**97,800**	2.10 U	2.00 U	**81,500**	**4.00 J**	**31,400**	**5,890**	0.050 UJ	5.50 U	**3,910 J**	**10,800**	2.40 U	1.30 U
MW-03-I(60)	11/16/2006	1042-01	Primary	55.0 U	**3.60 J**	1.00 U	**108,000**	2.10 U	2.00 U	**28,200**	2.70 U	**52,400**	**5,720**	0.050 UJ	5.50 U	**3,610 J**	**113,000**	2.40 U	3.40 U
MW-03-81	11/16/2006	1041-01	Primary	**341**	3.30 U	1.00 U	**41,800**	2.10 U	2.00 U	**36,500**	**3.00 J**	**21,800**	**2,260**	0.050 UJ	5.50 U	**3,890 J**	**29,100**	2.40 U	18.9 U
MW-03-137	11/17/2006	1043-01	Primary	55.0 U	3.30 U	1.00 U	**66,000**	2.10 U	2.00 U	**2,360**	2.70 U	**28,000**	**4,310**	0.050 UJ	5.50 U	**4,190 J**	**55,800**	2.40 U	5.30 U
MW-03-141	11/17/2006	1044-01	Primary	55.0 U	3.30 U	1.00 U	**45,700**	2.10 U	2.00 U	**1,540**	2.70 U	**18,700**	**1,460**	0.050 UJ	5.50 U	**3,620 J**	**40,300**	**5.40 J**	5.00 U
RP-06-30	11/27/2006	1050-01	Primary	**141 J**	3.30 U	1.00 U	**15,100**	2.10 U	2.00 U	**16,700**	2.70 U	**5,570**	**1,060**	0.050 U	5.50 U	**2,000 J**	**36,000**	**2.60 J**	4.30 U
RP-06-87	11/27/2006	1051-01	Primary	55.0 U	**7.30 J**	1.00 U	**467,000**	2.10 U	2.00 U	**4,550**	2.70 U	**168,000**	**31,200**	0.050 U	**10.6 J**	**12,900**	**88,400**	**5.80 J**	5.80 U
RP-06-95	11/27/2006	1052-01	Primary	55.0 U	**5.50 J**	1.00 U	**362,000**	2.10 U	2.00 U	**3,340**	2.70 U	**133,000**	**12,800**	0.050 U	**6.20 J**	**13,800**	**171,000**	**2.90 J**	4.30 U
RP-06-105	11/28/2006	1053-01	Primary	55.0 U	3.30 U	1.00 U	**342,000**	2.10 U	2.00 U	**142 J**	2.70 U	**119,000**	**3,690**	0.050 U	**6.40 J**	**17,600**	**152,000**	**4.50 J**	11.3 U
RP-20-25	11/10/2006	1032-01	Primary	**1,020**	**9.40 J**	1.00 U	**86,700**	2.10 U	**2.90 J**	**76,600**	**7.10 J**	**29,500**	**10,200**	0.050 UJ	**13.8 J**	**6,970**	**11,400**	**13.2 J**	6.60 U
RP-20-97	11/10/2006	1031-01	Primary	**293**	3.30 U	1.00 U	**177,000**	2.10 U	2.00 U	**1,190**	2.70 U	**104,000**	**6,440**	0.050 UJ	**12.4 J**	**10,600**	**24,700**	**12.8 J**	8.20 U
RP-20-110	11/13/2006	1033-01	Primary	55.0 U	3.30 U	1.00 U	**145,000**	2.10 U	2.00 U	**8,300**	2.70 U	**68,500**	**4,330**	0.050 UJ	**6.20 J**	**9,010**	**33,500**	2.40 U	4.40 U
RP-21-28	11/14/2006	1035-01	Primary	55.0 U	**4.60 J**	1.00 U	**30,600**	2.10 U	2.00 U	**25,000**	**3.50 J**	**12,400**	**2,150**	0.050 UJ	5.50 U	**1,280 J**	**3,010 J**	2.40 U	3.30 U
RP-21-125	11/14/2006	1034-01	Primary	**2,170**	3.30 U	1.00 U	**84,600**	2.10 U	2.00 U	**27,100**	2.70 U	**42,200**	**819**	0.050 UJ	**6.10 J**	**5,310**	**16,000**	**6.10 J**	13.6 U
RP-21-150	11/15/2006	1036-01	Primary	**558**	3.30 U	1.00 U	**55,000**	2.10 U	2.00 U	**2,160**	2.70 U	**22,500**	**3,210**	0.050 UJ	5.50 U	**3,940 J**	**36,000**	**4.80 J**	6.30 U
RP-21-150	11/15/2006	1036-02	Duplicate	**553**	3.30 U	1.00 U	**55,600**	2.10 U	2.00 U	**2,050**	2.70 U	**22,800**	**3,240**	0.050 UJ	5.50 U	**4,020 J**	**36,500**	**4.30 J**	7.80 U
RP-22-29	11/07/2006	1024-01	Primary	**378**	**13.7 J**	1.00 U	**140,000**	2.10 U	**2.70 J**	**195,000**	**9.00 J**	**35,800**	**6,280**	0.050 U	5.50 U	**8,490 J**	**37,400**	**4.70 J**	1.30 U
RP-22-75	11/07/2006	1025-01	Primary	**118 J**	**4.70 J**	1.00 U	**66,800**	2.10 U	**2.10 J**	**45,600**	2.70 U	**28,100**	**2,090**	0.061 U	5.50 U	**3,200 J**	**9,300**	2.40 U	**42.8**
RP-22-151	11/08/2006	1026-01	Primary	**68.4 J**	3.30 U	1.00 U	**69,800**	2.10 U	2.00 U	**1,100**	2.70 U	**26,200**	**1,270**	0.050 U	5.50 U	**4,850 J**	**30,700**	**3.20 J**	7.00 U
RP-23-30	11/08/2006	1027-01	Primary	**3,130**	**8.90 J**	1.00 U	**131,000**	2.10 U	**3.50 J**	**168,000**	**10.4**	**54,300**	**11,900**	0.050 U	**15.2 J**	**6,230 J**	**28,600**	**11.7 J**	8.90 U
RP-23-85	11/09/2006	1028-01	Primary	**117 J**	**99.41**	1.00 U	**90,800**	2.10 U	2.00 U	**20,800**	2.70 U	**33,800**	**10,000**	0.069 U	**8.70 J**	**5,380 J**	**14,200**	2.40 U	6.10 U
RP-23-100	11/09/2006	1029-01	Primary	**162 J**	**8.50 J**	1.00 U	**204,000**	2.10 U	2.00 U	**28,400**	2.70 U	**72,300**	**8,940**	0.050 U	5.50 U	**11,900**	**34,000**	2.40 U	6.40 U
RP-23-125	11/10/2006	1030-01	Primary	**280**	3.30 U	1.00 U	**440,000**	2.10 U	2.00 U	**544**	2.70 U	**118,000**	**1,090**	0.050 UJ	5.50 U	**13,900**	**56,600**	**7.20 J**	9.20 U
RP-24-30	11/21/2006	1046-01B	Primary	**2,940**	3.30 U	1.00 U	**107,000**	**8.10**	**7.30**	**32,200**	**6.50**	**39,600**	**3,240**	**0.050 J**	**8.70**	**9,620**	**27,400**	**9.80**	**25.6**
RP-24-60	11/20/2006	1047-01	Primary	**182 J**	3.30 U	1.00 U	**44,200**	2.10 U	**8.40 J**	**794**	2.70 U	**20,800**	**2,200**	0.050 U	**12.5 J**	**5,380**	**64,500**	**4.80 J**	**103**
RP-24-73	11/21/2006	1049-01	Primary	55.0 U	3.30 U	1.00 U	**63,800**	2.10 U	2.00 U	**527**	2.70 U	**27,700**	**4,320**	0.050 U	**15.4 J**	**6,040**	**75,000**	**3.90 J**	6.40 U
RP-24-85	11/21/2006	1048-01	Primary	55.0 U	3.30 U	1.00 U	**378,000**	2.10 U	**2.20 J**	**350**	2.70 U	**112,000**	**1,540**	0.050 U	**12.6 J**	**10,300**	**47,300**	**5.70 J**	6.60 U
RP-24-85	11/21/2006	1048-02	Duplicate	55.0 U	3.30 U	1.00 U	**379,000**	2.10 U	**2.30 J**	**349**	2.70 U	**112,000**	**1,540**	0.050 U	**11.1 J**	**10,400**	**47,200**	**5.70 J**	7.70 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/L = micrograms per liter
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5H
Dissolved Metals Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Aluminum	Arsenic	Cadmium	Calcium	Chromium	Copper	Iron	Lead	Magnesium	Manganese	Mercury	Nickel	Potassium	Sodium	Vanadium	Zinc
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-03-S(27)	11/15/2006	1037-01	Primary	55.0 U	3.30 U	1.00 U	**92,200**	2.10 U	**5.90 J**	**76,300**	**4.70 J**	**29,600**	**5,560**	0.050 UJ	5.50 U	**3,470 J**	**9,670**	2.40 U	1.30 U
MW-03-I(60)	11/16/2006	1042-01	Primary	55.0 U	**4.60 J**	1.00 U	**106,000**	2.10 U	2.00 U	**27,900**	2.70 U	**51,900**	**5,660**	0.050 UJ	5.50 U	**3,520 J**	**110,000**	2.40 U	4.10 U
MW-03-81	11/16/2006	1041-01	Primary	55.0 U	3.30 U	1.00 U	**41,800**	2.10 U	2.00 U	**36,200**	2.70 U	**21,800**	**2,250**	0.050 UJ	5.50 U	**3,880 J**	**28,700**	2.40 U	2.10 U
MW-03-137	11/17/2006	1043-01	Primary	55.0 U	3.30 U	1.00 U	**67,200**	2.10 U	2.00 U	**2,380**	2.70 U	**28,500**	**4,390**	0.050 UJ	5.50 U	**4,310 J**	**57,100**	2.40 U	4.80 U
MW-03-141	11/17/2006	1044-01	Primary	55.0 U	3.30 U	1.00 U	**44,800**	2.10 U	2.00 U	**1,450**	2.70 U	**18,400**	**1,460**	0.050 UJ	5.50 U	**3,520 J**	**40,000**	**5.30 J**	5.80 U
RP-06-30	11/27/2006	1050-01	Primary	55.0 U	3.30 U	1.00 U	**14,600**	2.10 U	**2.60 J**	**16,200**	2.70 U	**5,370**	**1,050**	0.050 U	5.50 U	**1,880 J**	**37,200**	2.40 U	6.90 U
RP-06-87	11/27/2006	1051-01	Primary	55.0 U	**7.90 J**	1.00 U	**463,000**	2.10 U	2.00 U	**4,460 J**	2.70 U	**167,000**	**30,900**	0.050 U	**10.3 J**	**13,300**	**87,100**	**6.50 J**	5.80 U
RP-06-95	11/27/2006	1052-01	Primary	55.0 U	**4.80 J**	1.00 U	**373,000**	2.10 U	2.00 U	**3,410**	2.70 U	**134,000**	**13,100**	0.050 U	**7.00 J**	**14,200**	**168,000**	2.40 U	4.90 U
RP-06-105	11/28/2006	1053-01	Primary	55.0 U	3.30 U	1.00 U	**341,000**	2.10 U	2.00 U	**72.4 J**	2.70 U	**120,000**	**3,720**	0.050 U	**6.20 J**	**17,600**	**154,000**	**3.60 J**	8.70 U
RP-20-25	11/10/2006	1032-01	Primary	55.0 U	**7.40 J**	1.00 U	**84,200**	2.10 U	2.00 U	**73,300**	**5.70 J**	**28,600**	**9,980**	0.050 UJ	5.50 U	**6,620**	**10,800**	**9.80 J**	3.80 U
RP-20-97	11/10/2006	1031-01	Primary	55.0 U	3.30 U	1.00 U	**173,000**	2.10 U	2.00 U	**672**	2.70 U	**101,000**	**6,290**	0.050 UJ	**11.7 J**	**10,200**	**24,200**	**11.4 J**	7.70 U
RP-20-110	11/13/2006	1033-01	Primary	55.0 U	3.30 U	1.00 U	**142,000**	2.10 U	2.00 U	**7,990**	2.70 U	**67,400**	**4,270**	0.050 UJ	**7.20 J**	**8,850**	**32,900**	2.40 U	5.30 U
RP-21-28	11/14/2006	1035-01	Primary	55.0 U	**3.70 J**	1.00 U	**30,000**	2.10 U	2.00 U	**24,200**	2.70 U	**12,200**	**2,110**	0.050 UJ	5.50 U	**1,180 J**	**2,810 J**	2.40 U	3.80 U
RP-21-125	11/14/2006	1034-01	Primary	55.0 U	3.30 U	1.00 U	**85,700**	2.10 U	2.00 U	**25,000**	2.70 U	**42,400**	**815**	0.050 UJ	**6.10 J**	**5,300**	**16,000**	2.40 U	10.1 U
RP-21-150	11/15/2006	1036-01	Primary	55.0 U	3.30 U	1.00 U	**53,700**	2.10 U	2.00 U	**270**	2.70 U	**22,000**	**3,130**	0.050 UJ	5.50 U	**3,800 J**	**35,000**	2.40 U	4.40 U
RP-21-150	11/15/2006	1036-02	Duplicate	55.0 U	3.30 U	1.00 U	**53,700**	2.10 U	2.00 U	**284**	2.70 U	**22,000**	**3,130**	0.050 UJ	5.50 U	**3,840 J**	**35,300**	2.40 U	7.40 U
RP-22-29	11/07/2006	1024-01	Primary	55.0 U	**11.8**	1.00 U	**137,000**	2.10 U	**3.50 J**	**191,000**	**9.10 J**	**35,200**	**6,200**	0.050 U	5.50 U	**8,360**	**36,900**	**3.30 J**	1.90 U
RP-22-75	11/07/2006	1025-01	Primary	55.0 U	3.30 U	1.00 U	**66,900**	2.10 U	2.00 U	**45,100**	2.70 U	**28,100**	**2,070**	0.050 U	5.50 U	**3,230 J**	**8,870**	2.40 U	8.70 U
RP-22-151	11/08/2006	1026-01	Primary	55.0 U	3.30 U	1.00 U	**69,400**	2.10 U	2.00 U	**1,160**	2.70 U	**26,000**	**1,260**	0.050 U	5.50 U	**4,840 J**	**30,000**	2.40 U	8.50 U
RP-23-30	11/08/2006	1027-01	Primary	**127 J**	**7.60 J**	1.00 U	**128,000**	2.10 U	**5.30 J**	**160,000**	**7.80 J**	**53,200**	**11,500**	0.110 U	**10.8 J**	**5,930 J**	**27,700**	**4.20 J**	1.30 U
RP-23-85	11/09/2006	1028-01	Primary	55.0 U	**99.43**	1.00 U	**89,700**	2.10 U	2.00 U	**20,300**	2.70 U	**33,400**	**9,940**	0.050 U	**7.30 J**	**5,240 J**	**14,100**	2.40 U	6.10 U
RP-23-100	11/09/2006	1029-01	Primary	55.0 U	**6.80 J**	1.00 U	**205,000**	2.10 U	2.00 U	**27,900**	2.70 U	**72,600**	**8,870**	0.050 U	5.50 U	**11,900**	**34,400**	2.40 U	5.40 U
RP-23-125	11/10/2006	1030-01	Primary	55.0 U	3.30 U	1.00 U	**445,000**	2.10 U	2.00 U	18.0 U	2.70 U	**120,000**	**1,060**	0.050 UJ	5.50 U	**14,000**	**57,300**	**4.20 J**	10.3 U
RP-24-30	11/21/2006	1046-01B	Primary	55.0 U	3.30 U	1.00 U	**109,000**	2.10 U	2.00 U	**27,200**	2.70 U	**40,500**	**3,230**	0.050 U	**6.20**	**9,050**	**27,600**	2.40 U	7.80 U
RP-24-60	11/20/2006	1047-01	Primary	**89.6 J**	3.30 U	1.00 U	**43,500**	2.10 U	2.00 U	**657**	2.70 U	**20,500**	**2,140**	0.050 U	**11.3 J**	**5,320**	**63,200**	**5.10 J**	9.40 U
RP-24-73	11/21/2006	1049-01	Primary	55.0 U	3.30 U	1.00 U	**65,100**	2.10 U	2.00 U	**488**	2.70 U	**28,300**	**4,410**	0.050 U	**16.5 J**	**6,260**	**77,200**	**4.50 J**	7.50 U
RP-24-85	11/21/2006	1048-01	Primary	55.0 U	3.30 U	1.00 U	**381,000**	2.10 U	2.00 U	**301**	2.70 U	**113,000**	**1,550**	0.050 U	**12.5 J**	**10,400**	**47,100**	**5.00 J**	7.20 U
RP-24-85	11/21/2006	1048-02	Duplicate	55.0 U	3.30 U	1.00 U	**378,000**	2.10 U	2.00 U	**294**	2.70 U	**112,000**	**1,560**	0.050 U	**12.1 J**	**10,400**	**47,200**	**6.00 J**	5.70 U

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
µg/L = micrograms per liter
J = estimated result
UJ = not detected at or above the method detection limit; the limit is an approximate value

TABLE 5I
Natural Attenuation Parameter Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Sample Date	Sample Code	Sample Type	Ammonia as Nitrogen	Chloride	Nitrate	Nitrite as N	Orthophosphorus	Sulfate	Sulfide	pH	Hardness as $CaCO_3$	Total Alkalinity	Dissolved Organic Carbon	Total Organic Carbon	Total Dissolved Solids	Total Suspended Solids	Chemical Oxygen Demand	Diesel Degrading Bacteria	Heterotrophic Plate Count
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	SU	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	cfu/mL	cfu/mL
MW-03-S(27)	11/15/2006	1037-01	Primary	**2.90**	**92.9**	0.015 U	0.011 U	0.001 U	0.088 U	0.490 U	**6.55**	**374**	**387**	**14.7**	**14.8**	**596**	**64.8**	**49.0**	**70.0**	**25.0**
MW-03-I(60)	11/16/2006	1042-01	Primary	**7.20**	**291**	**0.840**	0.015 U	0.001 U	**1.88**	**0.800**	**6.72**	**485**	**305**	**7.20**	**7.40**	**909**	**51.0**	**28.5**	**9.00**	**3,200**
MW-03-81	11/16/2006	1041-01	Primary	**17.3**	**16.8**	0.011 U	0.015 U	0.001 U	**1.69**	**1.00**	**6.74**	**194**	**316**	**9.50**	**10.6**	**338**	**78.2**	**30.5**	**760**	**15,000**
MW-03-137	11/17/2006	1043-01	Primary	**0.260**	**155**	0.011 U	0.015 U	0.001 U	**19.4**	0.490 U	**7.17**	**280**	**221**	**1.10**	0.720 U	**512**	**5.80**	10.0 U	**120**	**210**
MW-03-141	11/17/2006	1044-01	Primary	**0.570**	**69.8**	0.011 U	0.015 U	0.001 U	**11.2**	0.490 U	**7.29**	**191**	**185**	0.720 U	**2.50**	**321**	**4.70**	10.0 U	**7,000**	**24,000**
RP-06-30	11/27/2006	1050-01	Primary	**2.10**	**3.25**	0.011 U	0.015 U	**0.017**	**1.05**	0.490 U	**6.80**	**60.7**	**152**	**6.40**	**7.80**	**138**	**38.4**	10.0 U	**70.0**	**100**
RP-06-87	11/27/2006	1051-01	Primary	0.025 U	**1,320**	0.011 U	0.150 U	0.001 U	**129**	0.490 U	**6.84**	**1,860**	**438**	**2.30**	**4.90**	**2,480**	**10.0**	**59.2**	**180**	**210**
RP-06-95	11/27/2006	1052-01	Primary	0.025 U	**1,110**	0.011 U	0.150 U	0.001 U	**151**	0.490 U	**6.90**	**1,450**	**469**	**6.30**	**5.40**	**2,140**	**18.8**	**30.5**	**210**	**310**
RP-06-105	11/28/2006	1053-01	Primary	0.025 U	**1,010**	0.011 U	0.150 U	**0.106**	**139**	0.490 U	**6.76**	**1,350**	**403**	**2.60**	**2.30**	**1,960**	**2.50**	**32.6**	**1,300**	**2,000**
RP-20-25	11/10/2006	1032-01	Primary	**8.50**	**4.91**	0.015 U	0.011 U	**0.010**	**4.24**	0.490 U	**6.75**	**338**	**422**	**46.2**	**44.3**	**628**	**155**	**96.2**	**12,000**	**32,000**
RP-20-97	11/10/2006	1031-01	Primary	**0.150**	**176**	0.015 U	0.011 U	**0.168**	**192**	0.490 U	**6.69**	**869**	**517**	**3.80**	**3.50**	**1,190**	**13.2**	10.0 U	**3,200**	**110,000**
RP-20-110	11/13/2006	1033-01	Primary	**0.420**	**182**	0.015 U	0.011 U	0.001 U	**139**	0.490 U	**7.27**	**644**	**391**	**3.50**	**3.20**	**883**	**17.3**	10.0 U	**6,100**	**7,400**
RP-21-28	11/14/2006	1035-01	Primary	**1.00**	**1.99**	0.015 U	0.011 U	0.001 U	0.088 U	0.490 U	**6.74**	**128**	**155**	**7.60**	**6.80**	**192**	**38.7**	10.0 U	**760**	**4,800**
RP-21-125	11/14/2006	1034-01	Primary	**4.80**	**79.8**	0.015 U	0.011 U	0.001 U	0.088 U	0.490 U	**6.87**	**385**	**351**	**5.10**	**5.00**	**485**	**121**	10.0 U	**7,300**	**54,000**
RP-21-150	11/15/2006	1036-01	Primary	**0.120**	**87.3**	0.015 U	0.011 U	**0.084**	**11.9**	0.490 U	**7.20**	**230**	**202**	**1.10**	**3.50**	**381**	**24.0**	10.0 U	**37.0**	**2,100**
RP-22-29	11/07/2006	1024-01	Primary	**2.20**	**5.30**	0.015 U	0.011 U	0.001 U	**170**	0.490 U	**6.47**	**496**	**615**	**22.1**	**20.5**	**921**	**58.2**	**83.9**	**1,200**	**8,800**
RP-22-75	11/07/2006	1025-01	Primary	**9.70**	**4.10**	0.015 U	0.011 U	0.001 U	**1.60**	0.490 U	**6.82**	**282**	**358**	**11.0**	**10.3**	**366**	**53.8**	**28.5**	**6,600**	**12,000**
RP-22-151	11/08/2006	1026-01	Primary	**0.180**	**93.5**	0.015 U	0.011 U	**0.097**	**14.6**	0.490 U	**7.28**	**282**	**199**	**2.20**	**1.30**	**490**	**4.00**	10.0 U	**13,000**	**20,000**
RP-23-30	11/08/2006	1027-01	Primary	**3.80**	**0.860**	0.015 U	0.011 U	0.001 U	**282**	0.490 U	**6.47**	**550**	**619**	**21.5**	**22.1**	**1,060**	**372**	**143**	**22,000**	**71,000**
RP-23-85	11/09/2006	1028-01	Primary	**1.60**	**4.42**	0.015 U	0.011 U	0.001 U	**4.04**	0.490 U	**7.08**	**366**	**413**	**6.70**	**6.60**	**449**	**63.1**	**38.7**	**1,800**	**14,000**
RP-23-100	11/09/2006	1029-01	Primary	**1.60**	**542**	0.015 U	0.011 U	0.001 U	**14.4**	0.490 U	**7.05**	**807**	**217**	**3.50**	**2.60**	**1,520**	**58.0**	**28.5**	**2,700**	**7,600**
RP-23-125	11/10/2006	1030-01	Primary	0.025 U	**1,200**	0.015 U	0.113 U	**0.011**	**98.3**	0.490 U	**6.70**	**1,590**	**191**	**2.30**	**1.90**	**2,480**	**11.1**	10.0 U	**5,000**	**84,000**
RP-24-30	11/20/2006	1046-01A	Primary	NT	**15.8**	0.011 U	0.015 U	0.001 U	**5.96**	0.490 U	**6.73**	NT	**538**	**22.3**	**22.1**	**565**	**53.8**	**75.7**	**360,000**	**1,300,000**
RP-24-30	11/21/2006	1046-01B	Primary	**0.630**	NT	NT	NT	NT	NT	NT	NT	**430**	NT	NT	NT	NT	NT	NT	NT	NT
RP-24-60	11/20/2006	1047-01	Primary	**0.290**	**17.8**	0.011 U	0.015 U	0.001 U	**23.9**	0.490 U	**6.65**	**196**	**312**	**6.50**	**6.80**	**419**	**4.20**	10.0 U	**31,000**	**56,000**
RP-24-73	11/21/2006	1049-01	Primary	**16.4**	**48.6**	0.011 U	0.015 U	0.001 U	**29.7**	0.490 U	**6.60**	**274**	**374**	**4.90**	**7.10**	**559**	**3.00**	**22.3**	**25,000**	**36,000**
RP-24-85	11/21/2006	1048-01	Primary	**0.980**	**982**	0.011 U	0.150 U	0.001 U	**76.1**	0.490 U	**6.53**	**1,400**	**272**	**2.30**	**2.60**	**1,820**	**2.50**	**24.3**	**1,200**	**24,000**

Notes:
BOLD = detection
U = not detected at or above the listed method detection limit
Natural attenuation parameter results are not validated, according to RP standard practice
mg/L = milligrams per liter
SU = standard units
cfu/mL = colony forming units per milliliter
A/B = sample was collected from a low producing well, taking over a day to complete sampling
NT = not tested

TABLE 5J
Carbon 12/13 Isotopic Ratio Analyses of
Volatile Organic Compound Groundwater Analytical Results
Stage 2 Source Control Evaluation
RP - Portland Site

Location ID	Sample Date	Sample ID	Sample Type	1,2-Dichlorobenzene	1,4-Dichlorobenzene	Chlorobenzene	Chloroform	cis-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene
				d13C ‰	d13C ‰	d13C ‰	d13C ‰	d13C ‰	d13C ‰	d13C ‰
MW-03-S(27)	11/15/2006	1037-01	Primary	ND	ND	-26.6	ND	ND	ND	ND
MW-03-I(60)	11/16/2006	1042-01	Primary	ND	ND	-26.7	ND	ND	ND	ND
MW-03-137	11/17/2006	1043-01	Primary	-26.7	-27.6	-28.6	ND	ND	ND	ND
MW-03-141	11/17/2006	1044-01	Primary	-26.45	-27.5	-28.9	ND	ND	ND	ND
RP-06-87	11/27/2006	1051-01	Primary	-26.6	-27.7	-28.4	ND	-22.7	ND	-16.5
RP-06-95	11/27/2006	1052-01	Primary	-26.9	-27.9	-28.5	ND	-17.3	-29.4	ND
RP-06-105	11/28/2006	1053-01	Primary	-26.85	-27.6	-28.2	ND	-16.15	-29.5	ND
RP-20-25	11/10/2006	1032-01	Primary	ND	ND	-22.9	ND	ND	ND	ND
RP-21-150	11/15/2006	1036-01	Primary	-26.6	-27.3	-28.5	ND	ND	ND	ND
RP-22-151	11/08/2006	1026-01	Primary	-26.8	-27.4	-28.7	ND	ND	ND	ND
RP-23-30	11/08/2006	1027-01	Primary	ND	ND	ND	ND	ND	ND	ND
RP-23-100	11/09/2006	1029-01	Primary	-25.4	-27.5	-30.4	ND	-7.25	ND	ND
RP-23-125	11/10/2006	1030-01	Primary	-26.95	-27.8	-28	ND	-22.8	ND	-17.8
RP-24-60	11/20/2006	1047-01	Primary	ND	ND	ND	-27.7	ND	ND	-30.4
RP-24-85	11/21/2006	1048-01	Primary	-26.9	-28	-28.4	ND	-21.7	ND	-17.3
RP-24-73	11/21/2006	1049-01	Primary	-26.45	-27.7	-27.4	ND	ND	ND	ND

Notes:
BOLD = detection ID = identification
ND = not detected at or above

Isotope results are not validated, according to RP standard practice
listed method reporting limit
d13C ‰ = deviation of Carbon-13 concentration in parts per mil from the Peedee Belemnite (PDB) standard

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor Specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
MW-03-S(27)	Siltronic	11/15/06	Acenaphthene	75.0	990	99.0	990	99.0	0.200	370	~	520	~		375			
MW-03-S(27)	Siltronic	11/15/06	bis(2-Ethylhexyl) phthalate	1.30 J	2.20	0.220	2.20	0.220	6.00	4.80	~	3.00	~	5.91				
MW-03-S(27)	Siltronic	11/15/06	Copper (Dissolved)	5.90 J	~	~	~	~	1,300	1,500	2.70	3.60	~			2.19		
MW-03-S(27)	Siltronic	11/15/06	Fluoranthene	0.770 J	140	14.0	140	14.0	0.200	1,500	~	~	~		3.85			
MW-03-S(27)	Siltronic	11/15/06	Fluorene	11.0	5,300	530	5,300	530	0.200	240	~	~	3.90		55.0			2.82
MW-03-S(27)	Siltronic	11/15/06	Lead	4.00 J	~	~	~	~	15.0	~	0.540	0.540	~			7.41		
MW-03-S(27)	Siltronic	11/15/06	Lead (Dissolved)	4.70 J	~	~	~	~	15.0	~	0.540	0.540	~			8.70		
MW-03-S(27)	Siltronic	11/15/06	Manganese	5,890	100.0	10.0	100.0	10.0	50.0	880	~	~	120	589	118			49.1
MW-03-S(27)	Siltronic	11/15/06	Manganese (Dissolved)	5,560	100.0	10.0	100.0	10.0	50.0	880	~	~	120	556	111			46.3
MW-03-S(27)	Siltronic	11/15/06	Naphthalene	1.90 J	~	~	~	~	0.200	6.20	~	620	12.0		9.50			
MW-03-S(27)	Siltronic	11/15/06	Pyrene	0.740 J	4,000	400	4,000	400	0.200	180	~	~	~		3.70			
MW-03-I(60)	Siltronic	11/16/06	Acenaphthene	2.00 J	990	99.0	990	99.0	0.200	370	~	520	~		10.0			
MW-03-I(60)	Siltronic	11/16/06	Arsenic	3.60 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	257				1.16
MW-03-I(60)	Siltronic	11/16/06	Arsenic (Dissolved)	4.60 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	329				1.48
MW-03-I(60)	Siltronic	11/16/06	Manganese	5,720	100.0	10.0	100.0	10.0	50.0	880	~	~	120	572	114			47.7
MW-03-I(60)	Siltronic	11/16/06	Manganese (Dissolved)	5,660	100.0	10.0	100.0	10.0	50.0	880	~	~	120	566	113			47.2
MW-03-I(60)	Siltronic	11/16/06	Naphthalene	0.320 J	~	~	~	~	0.200	6.20	~	620	12.0		1.60			
MW-03-81	Siltronic	11/16/06	Aluminum	341	~	~	~	~	50.0	36,000	87.0	~	~		6.82	3.92		
MW-03-81	Siltronic	11/16/06	bis(2-Ethylhexyl) phthalate	9.90	2.20	0.220	2.20	0.220	6.00	4.80	~	3.00	~	45.0	1.65		3.30	
MW-03-81	Siltronic	11/16/06	Diethylphthalate	12.0	44,000	4,400	44,000	4,400	~	29,000	~	3.00	210				4.00	
MW-03-81	Siltronic	11/16/06	Lead	3.00 J	~	~	~	~	15.0	~	0.540	0.540	~			5.56		
MW-03-81	Siltronic	11/16/06	m,p-Xylene	2.10	~	~	~	~	~	~	~	~	1.80					1.17
MW-03-81	Siltronic	11/16/06	Manganese	2,260	100.0	10.0	100.0	10.0	50.0	880	~	~	120	226	45.2			18.8
MW-03-81	Siltronic	11/16/06	Manganese (Dissolved)	2,250	100.0	10.0	100.0	10.0	50.0	880	~	~	120	225	45.0			18.8
MW-03-81	Siltronic	11/16/06	Naphthalene	1.40 J	~	~	~	~	0.200	6.20	~	620	12.0		7.00			
MW-03-137	Siltronic	11/17/06	1,2-Dichlorobenzene	660	1,300	130	1,300	130	600	370	~	763	14.0	5.08	1.10			47.1
MW-03-137	Siltronic	11/17/06	1,4-Dichlorobenzene	220	190	19.0	190	19.0	75.0	0.500	~	763	15.0	11.6	2.93			14.7
MW-03-137	Siltronic	11/17/06	Chlorobenzene	91.0	1,600	160	1,600	160	100.0	110	~	50.0	64.0				1.82	
MW-03-137	Siltronic	11/17/06	Manganese	4,310	100.0	10.0	100.0	10.0	50.0	880	~	~	120	431	86.2			35.9
MW-03-137	Siltronic	11/17/06	Manganese (Dissolved)	4,390	100.0	10.0	100.0	10.0	50.0	880	~	~	120	439	87.8			36.6
MW-03-141	Siltronic	11/17/06	1,2-Dichlorobenzene	220	1,300	130	1,300	130	600	370	~	763	14.0	1.69				15.7
MW-03-141	Siltronic	11/17/06	1,4-Dichlorobenzene	72.0	190	19.0	190	19.0	75.0	0.500	~	763	15.0	3.79				4.80
MW-03-141	Siltronic	11/17/06	Dimethylphthalate	60.0	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				20.0	
MW-03-141	Siltronic	11/17/06	Manganese	1,460	100.0	10.0	100.0	10.0	50.0	880	~	~	120	146	29.2			12.2
MW-03-141	Siltronic	11/17/06	Manganese (Dissolved)	1,460	100.0	10.0	100.0	10.0	50.0	880	~	~	120	146	29.2			12.2
RP-06-30	BNSF	11/27/06	Aluminum	141 J	~	~	~	~	50.0	36,000	87.0	~	~		2.82	1.62		
RP-06-30	BNSF	11/27/06	Manganese	1,060	100.0	10.0	100.0	10.0	50.0	880	~	~	120	106	21.2			8.83
RP-06-30	BNSF	11/27/06	Manganese (Dissolved)	1,050	100.0	10.0	100.0	10.0	50.0	880	~	~	120	105	21.0			8.75

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
RP-06-87	BNSF	11/27/06	1,2-Dichlorobenzene	870	1,300	130	1,300	130	600	370	~	763	14.0	6.69	1.45		1.14	
RP-06-87	BNSF	11/27/06	1,4-Dichlorobenzene	200	190	19.0	190	19.0	75.0	0.500	~	763	15.0	10.5	2.67			13.3
RP-06-87	BNSF	11/27/06	Arsenic	7.30 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	521				2.35
RP-06-87	BNSF	11/27/06	Arsenic (Dissolved)	7.90 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	564				2.55
RP-06-87	BNSF	11/27/06	Chlorobenzene	130	1,600	160	1,600	160	100.0	110	~	50.0	64.0		1.30		2.60	
RP-06-87	BNSF	11/27/06	Manganese	31,200	100.0	10.0	100.0	10.0	50.0	880	~	~	120	3,120	624			260
RP-06-87	BNSF	11/27/06	Manganese (Dissolved)	30,900	100.0	10.0	100.0	10.0	50.0	880	~	~	120	3,090	618			258
RP-06-87	BNSF	11/27/06	Trichloroethene	25.0	30.0	3.00	30.0	3.00	5.00	0.0280	~	21,900	47.0	8.33	5.00			
RP-06-87	BNSF	11/27/06	Vinyl chloride	15.0 J	2.40	0.240	2.40	0.240	2.00	0.0200	~	~	~	62.5	7.50			
RP-06-95	BNSF	11/27/06	1,2-Dichlorobenzene	1,200	1,300	130	1,300	130	600	370	~	763	14.0	9.23	2.00		1.57	
RP-06-95	BNSF	11/27/06	1,4-Dichlorobenzene	320	190	19.0	190	19.0	75.0	0.500	~	763	15.0	16.8	4.27			21.3
RP-06-95	BNSF	11/27/06	2,4,5-TP (Silvex)	58.0	~	~	~	~	50.0	290	~	~	~		1.16			
RP-06-95	BNSF	11/27/06	Arsenic	5.50 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	393				1.77
RP-06-95	BNSF	11/27/06	Arsenic (Dissolved)	4.80 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	343				1.55
RP-06-95	BNSF	11/27/06	Chlorobenzene	260	1,600	160	1,600	160	100.0	110	~	50.0	64.0	1.63	2.60		5.20	
RP-06-95	BNSF	11/27/06	Manganese	12,800	100.0	10.0	100.0	10.0	50.0	880	~	~	120	1,280	256			107
RP-06-95	BNSF	11/27/06	Manganese (Dissolved)	13,100	100.0	10.0	100.0	10.0	50.0	880	~	~	120	1,310	262			109
RP-06-95	BNSF	11/27/06	Trichloroethene	11.0 J	30.0	3.00	30.0	3.00	5.00	0.0280	~	21,900	47.0	3.67	2.20			
RP-06-95	BNSF	11/27/06	Vinyl chloride	30.0 J	2.40	0.240	2.40	0.240	2.00	0.0200	~	~	~	125	15.0			
RP-06-105	BNSF	11/28/06	1,2-Dichlorobenzene	1,100	1,300	130	1,300	130	600	370	~	763	14.0	8.46	1.83		1.44	
RP-06-105	BNSF	11/28/06	1,4-Dichlorobenzene	290	190	19.0	190	19.0	75.0	0.500	~	763	15.0	15.3	3.87			19.3
RP-06-105	BNSF	11/28/06	2,4,5-TP (Silvex)	53.0	~	~	~	~	50.0	290	~	~	~		1.06			
RP-06-105	BNSF	11/28/06	Chlorobenzene	250	1,600	160	1,600	160	100.0	110	~	50.0	64.0	1.56	2.50		5.00	
RP-06-105	BNSF	11/28/06	Dimethylphthalate	12.0 J	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				4.00	
RP-06-105	BNSF	11/28/06	Manganese	3,690	100.0	10.0	100.0	10.0	50.0	880	~	~	120	369	73.8			30.8
RP-06-105	BNSF	11/28/06	Manganese (Dissolved)	3,720	100.0	10.0	100.0	10.0	50.0	880	~	~	120	372	74.4			31.0
RP-06-105	BNSF	11/28/06	Trichloroethene	9.30 J	30.0	3.00	30.0	3.00	5.00	0.0280	~	21,900	47.0	3.10	1.86			
RP-06-105	BNSF	11/28/06	Vinyl chloride	28.0 J	2.40	0.240	2.40	0.240	2.00	0.0200	~	~	~	117	14.0			

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
RP-20-25	Siltronic	11/10/06	2-Methylnaphthalene	11.0	~	~	~	~	0.200	~	~	~	2.10		55.0			5.24
RP-20-25	Siltronic	11/10/06	Acenaphthene	20.0	990	99.0	990	99.0	0.200	370	~	520	~		100.0			
RP-20-25	Siltronic	11/10/06	Aluminum	1,020	~	~	~	~	50.0	36,000	87.0	~	~		20.4	11.7		
RP-20-25	Siltronic	11/10/06	Anthracene	1.80 J	40,000	4,000	40,000	4,000	0.200	1,800	~	~	0.730		9.00			2.47
RP-20-25	Siltronic	11/10/06	Arsenic	9.40 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	671				3.03
RP-20-25	Siltronic	11/10/06	Arsenic (Dissolved)	7.40 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	529				2.39
RP-20-25	Siltronic	11/10/06	bis(2-Ethylhexyl) phthalate	0.590 J	2.20	0.220	2.20	0.220	6.00	4.80	~	3.00	~	2.68				
RP-20-25	Siltronic	11/10/06	Copper	2.90 J	~	~	~	~	1,300	1,500	2.70	3.60	~			1.07		
RP-20-25	Siltronic	11/10/06	Fluoranthene	2.70 J	140	14.0	140	14.0	0.200	1,500	~	~	~		13.5			
RP-20-25	Siltronic	11/10/06	Fluorene	5.70 J	5,300	530	5,300	530	0.200	240	~	~	3.90		28.5			1.46
RP-20-25	Siltronic	11/10/06	Lead	7.10 J	~	~	~	~	15.0	~	0.540	0.540	~			13.1		
RP-20-25	Siltronic	11/10/06	Lead (Dissolved)	5.70 J	~	~	~	~	15.0	~	0.540	0.540	~			10.6		
RP-20-25	Siltronic	11/10/06	m,p-Xylene	2.50	~	~	~	~	~	~	~	~	1.80					1.39
RP-20-25	Siltronic	11/10/06	Manganese	10,200	100.0	10.0	100.0	10.0	50.0	880	~	~	120	1,020	204			85.0
RP-20-25	Siltronic	11/10/06	Manganese (Dissolved)	9,980	100.0	10.0	100.0	10.0	50.0	880	~	~	120	998	200			83.2
RP-20-25	Siltronic	11/10/06	Naphthalene	32.0	~	~	~	~	0.200	6.20	~	620	12.0		160			2.67
RP-20-25	Siltronic	11/10/06	Phenanthrene	14.0	~	~	~	~	0.200	~	~	~	~		70.0			
RP-20-25	Siltronic	11/10/06	Pyrene	3.00 J	4,000	400	4,000	400	0.200	180	~	~	~		15.0			
RP-20-97	Siltronic	11/10/06	2-Methylnaphthalene	0.490 J	~	~	~	~	0.200	~	~	~	2.10		2.45			
RP-20-97	Siltronic	11/10/06	Acenaphthene	0.620 J	990	99.0	990	99.0	0.200	370	~	520	~		3.10			
RP-20-97	Siltronic	11/10/06	Aluminum	293	~	~	~	~	50.0	36,000	87.0	~	~		5.86	3.37		
RP-20-97	Siltronic	11/10/06	Dimethylphthalate	11.0	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				3.67	
RP-20-97	Siltronic	11/10/06	Manganese	6,440	100.0	10.0	100.0	10.0	50.0	880	~	~	120	644	129			53.7
RP-20-97	Siltronic	11/10/06	Manganese (Dissolved)	6,290	100.0	10.0	100.0	10.0	50.0	880	~	~	120	629	126			52.4
RP-20-97	Siltronic	11/10/06	Naphthalene	4.90 J	~	~	~	~	0.200	6.20	~	620	12.0		24.5			
RP-20-110	Siltronic	11/13/06	Dimethylphthalate	19.0	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				6.33	
RP-20-110	Siltronic	11/13/06	Manganese	4,330	100.0	10.0	100.0	10.0	50.0	880	~	~	120	433	86.6			36.1
RP-20-110	Siltronic	11/13/06	Manganese (Dissolved)	4,270	100.0	10.0	100.0	10.0	50.0	880	~	~	120	427	85.4			35.6
RP-20-110	Siltronic	11/13/06	Naphthalene	2.60 J	~	~	~	~	0.200	6.20	~	620	12.0		13.0			
RP-21-28	Siltronic	11/14/06	2-Methylnaphthalene	1.40 J	~	~	~	~	0.200	~	~	~	2.10		7.00			
RP-21-28	Siltronic	11/14/06	Acenaphthene	52.0	990	99.0	990	99.0	0.200	370	~	520	~		260			
RP-21-28	Siltronic	11/14/06	Anthracene	2.10 J	40,000	4,000	40,000	4,000	0.200	1,800	~	~	0.730		10.5			2.88
RP-21-28	Siltronic	11/14/06	Arsenic	4.60 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	329				1.48
RP-21-28	Siltronic	11/14/06	Arsenic (Dissolved)	3.70 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	264				1.19
RP-21-28	Siltronic	11/14/06	Benzo(a)anthracene	0.430 J	0.0180	0.00180	0.0180	0.00180	0.200	0.0920	~	~	0.0270	239	2.15			15.9
RP-21-28	Siltronic	11/14/06	Chrysene	0.550 J	0.0180	0.00180	0.0180	0.00180	0.200	9.20	~	~	~	306	2.75			
RP-21-28	Siltronic	11/14/06	Fluoranthene	12.0	140	14.0	140	14.0	0.200	1,500	~	~	~		60.0			
RP-21-28	Siltronic	11/14/06	Fluorene	20.0	5,300	530	5,300	530	0.200	240	~	~	3.90		100.0			5.13
RP-21-28	Siltronic	11/14/06	Lead	3.50 J	~	~	~	~	15.0	~	0.540	0.540	~			6.48		
RP-21-28	Siltronic	11/14/06	Manganese	2,150	100.0	10.0	100.0	10.0	50.0	880	~	~	120	215	43.0			17.9
RP-21-28	Siltronic	11/14/06	Manganese (Dissolved)	2,110	100.0	10.0	100.0	10.0	50.0	880	~	~	120	211	42.2			17.6
RP-21-28	Siltronic	11/14/06	Naphthalene	3.30 J	~	~	~	~	0.200	6.20	~	620	12.0		16.5			
RP-21-28	Siltronic	11/14/06	Phenanthrene	0.900 J	~	~	~	~	0.200	~	~	~	~		4.50			
RP-21-28	Siltronic	11/14/06	Pyrene	13.0	4,000	400	4,000	400	0.200	180	~	~	~		65.0			
RP-21-125	Siltronic	11/14/06	Aluminum	2,170	~	~	~	~	50.0	36,000	87.0	~	~		43.4	24.9		
RP-21-125	Siltronic	11/14/06	Dimethylphthalate	18.0	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				6.00	
RP-21-125	Siltronic	11/14/06	Manganese	819	100.0	10.0	100.0	10.0	50.0	880	~	~	120	81.9	16.4			6.83
RP-21-125	Siltronic	11/14/06	Manganese (Dissolved)	815	100.0	10.0	100.0	10.0	50.0	880	~	~	120	81.5	16.3			6.79

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
RP-21-150	Siltronic	11/15/06	1,2-Dichlorobenzene	210	1,300	130	1,300	130	600	370	~	763	14.0	1.62				15.0
RP-21-150	Siltronic	11/15/06	1,4-Dichlorobenzene	67.0	190	19.0	190	19.0	75.0	0.500	~	763	15.0	3.53				4.47
RP-21-150	Siltronic	11/15/06	Aluminum	558	~	~	~	~	50.0	36,000	87.0	~	~		11.2	6.41		
RP-21-150	Siltronic	11/15/06	Manganese	3,210	100.0	10.0	100.0	10.0	50.0	880	~	~	120	321	64.2			26.8
RP-21-150	Siltronic	11/15/06	Manganese (Dissolved)	3,130	100.0	10.0	100.0	10.0	50.0	880	~	~	120	313	62.6			26.1
RP-21-150	Siltronic	11/15/06	Naphthalene	4.10 J	~	~	~	~	0.200	6.20	~	620	12.0		20.5			
RP-22-29	Siltronic	11/07/06	2-Methylnaphthalene	1.20 J	~	~	~	~	0.200	~	~	~	2.10		6.00			
RP-22-29	Siltronic	11/07/06	Acenaphthene	1.90 J	990	99.0	990	99.0	0.200	370	~	520	~		9.50			
RP-22-29	Siltronic	11/07/06	Acenaphthylene	1.50 J	~	~	~	~	0.200	~	~	~	~		7.50			
RP-22-29	Siltronic	11/07/06	Aluminum	378	~	~	~	~	50.0	36,000	87.0	~	~		7.56	4.34		
RP-22-29	Siltronic	11/07/06	Anthracene	1.30 J	40,000	4,000	40,000	4,000	0.200	1,800	~	~	0.730		6.50			1.78
RP-22-29	Siltronic	11/07/06	Arsenic	13.7 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	979	1.37			4.42
RP-22-29	Siltronic	11/07/06	Arsenic (Dissolved)	11.8	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	843	1.18			3.81
RP-22-29	Siltronic	11/07/06	Benzo(g,h,i)perylene	0.470 J	~	~	~	~	0.200	~	~	~	~		2.35			
RP-22-29	Siltronic	11/07/06	Chrysene	0.530 J	0.0180	0.00180	0.0180	0.00180	0.200	9.20	~	~	~	294	2.65			
RP-22-29	Siltronic	11/07/06	Copper (Dissolved)	3.50 J	~	~	~	~	1,300	1,500	2.70	3.60	~			1.30		
RP-22-29	Siltronic	11/07/06	Fluoranthene	4.60 J	140	14.0	140	14.0	0.200	1,500	~	~	~		23.0			
RP-22-29	Siltronic	11/07/06	Fluorene	1.30 J	5,300	530	5,300	530	0.200	240	~	~	3.90		6.50			
RP-22-29	Siltronic	11/07/06	Lead	9.00 J	~	~	~	~	15.0	~	0.540	0.540	~			16.7		
RP-22-29	Siltronic	11/07/06	Lead (Dissolved)	9.10 J	~	~	~	~	15.0	~	0.540	0.540	~			16.9		
RP-22-29	Siltronic	11/07/06	Manganese	6,280	100.0	10.0	100.0	10.0	50.0	880	~	~	120	628	126			52.3
RP-22-29	Siltronic	11/07/06	Manganese (Dissolved)	6,200	100.0	10.0	100.0	10.0	50.0	880	~	~	120	620	124			51.7
RP-22-29	Siltronic	11/07/06	Naphthalene	1.50	~	~	~	~	0.200	6.20	~	620	12.0		7.50			
RP-22-29	Siltronic	11/07/06	Phenanthrene	6.30 J	~	~	~	~	0.200	~	~	~	~		31.5			
RP-22-29	Siltronic	11/07/06	Pyrene	4.40 J	4,000	400	4,000	400	0.200	180	~	~	~		22.0			
RP-22-75	Siltronic	11/07/06	Aluminum	118 J	~	~	~	~	50.0	36,000	87.0	~	~		2.36	1.36		
RP-22-75	Siltronic	11/07/06	Arsenic	4.70 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	336				1.52
RP-22-75	Siltronic	11/07/06	Manganese	2,090	100.0	10.0	100.0	10.0	50.0	880	~	~	120	209	41.8			17.4
RP-22-75	Siltronic	11/07/06	Manganese (Dissolved)	2,070	100.0	10.0	100.0	10.0	50.0	880	~	~	120	207	41.4			17.3
RP-22-75	Siltronic	11/07/06	Zinc	42.8	26,000	2,600	26,000	2,600	5,000	11,000	36.0	33.0	~			1.19		
RP-22-151	Siltronic	11/08/06	1,2-Dichlorobenzene	100	1,300	130	1,300	130	600	370	~	763	14.0					7.14
RP-22-151	Siltronic	11/08/06	1,4-Dichlorobenzene	30.0	190	19.0	190	19.0	75.0	0.500	~	763	15.0	1.58				2.00
RP-22-151	Siltronic	11/08/06	Aluminum	68.4 J	~	~	~	~	50.0	36,000	87.0	~	~		1.37			
RP-22-151	Siltronic	11/08/06	Dimethylphthalate	3.70 J	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				1.23	
RP-22-151	Siltronic	11/08/06	Manganese	1,270	100.0	10.0	100.0	10.0	50.0	880	~	~	120	127	25.4			10.6
RP-22-151	Siltronic	11/08/06	Manganese (Dissolved)	1,260	100.0	10.0	100.0	10.0	50.0	880	~	~	120	126	25.2			10.5

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
RP-23-30	Siltronic	11/08/06	2-Methylnaphthalene	6.50 J	~	~	~	~	0.200	~	~	~	2.10		32.5			3.10
RP-23-30	Siltronic	11/08/06	Acenaphthene	13.0	990	99.0	990	99.0	0.200	370	~	520	~		65.0			
RP-23-30	Siltronic	11/08/06	Acenaphthylene	1.20 J	~	~	~	~	0.200	~	~	~	~		6.00			
RP-23-30	Siltronic	11/08/06	Aluminum	3,130	~	~	~	~	50.0	36,000	87.0	~	~		62.6	36.0		
RP-23-30	Siltronic	11/08/06	Aluminum (Dissolved)	127 J	~	~	~	~	50.0	36,000	87.0	~	~		2.54	1.46		
RP-23-30	Siltronic	11/08/06	Anthracene	2.80 J	40,000	4,000	40,000	4,000	0.200	1,800	~	~	0.730		14.0			3.84
RP-23-30	Siltronic	11/08/06	Arsenic	8.90 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	636				2.87
RP-23-30	Siltronic	11/08/06	Arsenic (Dissolved)	7.60 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	543				2.45
RP-23-30	Siltronic	11/08/06	Benzo(a)anthracene	1.00 J	0.0180	0.00180	0.0180	0.00180	0.200	0.0920	~	~	0.0270	556	5.00			37.0
RP-23-30	Siltronic	11/08/06	Benzo(a)pyrene	1.20 J	0.0180	0.00180	0.0180	0.00180	0.200	0.00920	~	~	0.0140	667	6.00			85.7
RP-23-30	Siltronic	11/08/06	Benzo(b)fluoranthene	0.650 J	0.0180	0.00180	0.0180	0.00180	0.200	0.0920	~	~	~	361	3.25			
RP-23-30	Siltronic	11/08/06	Benzo(g,h,i)perylene	1.20 J	~	~	~	~	0.200	~	~	~	~		6.00			
RP-23-30	Siltronic	11/08/06	Benzo(k)fluoranthene	0.910 J	0.0180	0.00180	0.0180	0.00180	0.200	0.920	~	~	~	506	4.55			
RP-23-30	Siltronic	11/08/06	bis(2-Ethylhexyl) phthalate	0.860 J	2.20	0.220	2.20	0.220	6.00	4.80	~	3.00	~	3.91				
RP-23-30	Siltronic	11/08/06	Chrysene	1.50 J	0.0180	0.00180	0.0180	0.00180	0.200	9.20	~	~	~	833	7.50			
RP-23-30	Siltronic	11/08/06	Copper	3.50 J	~	~	~	~	1,300	1,500	2.70	3.60	~			1.30		
RP-23-30	Siltronic	11/08/06	Copper (Dissolved)	5.30 J	~	~	~	~	1,300	1,500	2.70	3.60	~			1.96		
RP-23-30	Siltronic	11/08/06	Fluoranthene	7.00 J	140	14.0	140	14.0	0.200	1,500	~	~	~		35.0			
RP-23-30	Siltronic	11/08/06	Fluorene	4.70 J	5,300	530	5,300	530	0.200	240	~	~	3.90		23.5			1.21
RP-23-30	Siltronic	11/08/06	Indeno(1,2,3-cd)pyrene	0.720 J	0.0180	0.00180	0.0180	0.00180	0.200	0.0920	~	~	~	400	3.60			
RP-23-30	Siltronic	11/08/06	Lead	10.4	~	~	~	~	15.0	~	0.540	0.540	~			19.3		
RP-23-30	Siltronic	11/08/06	Lead (Dissolved)	7.80 J	~	~	~	~	15.0	~	0.540	0.540	~			14.4		
RP-23-30	Siltronic	11/08/06	Manganese	11,900	100.0	10.0	100.0	10.0	50.0	880	~	~	120	1,190	238			99.2
RP-23-30	Siltronic	11/08/06	Manganese (Dissolved)	11,500	100.0	10.0	100.0	10.0	50.0	880	~	~	120	1,150	230			95.8
RP-23-30	Siltronic	11/08/06	Naphthalene	3.80	~	~	~	~	0.200	6.20	~	620	12.0		19.0			
RP-23-30	Siltronic	11/08/06	Phenanthrene	8.50 J	~	~	~	~	0.200	~	~	~	~		42.5			
RP-23-30	Siltronic	11/08/06	Pyrene	6.60 J	4,000	400	4,000	400	0.200	180	~	~	~		33.0			
RP-23-85	Siltronic	11/09/06	2,3,7,8-TCDD	6.95E-06 J	5.10E-09	5.10E-10	5.10E-09	5.10E-10	~	4.50E-07	~	3.80E-04	~	13,627				
RP-23-85	Siltronic	11/09/06	Aluminum	117 J	~	~	~	~	50.0	36,000	87.0	~	~		2.34	1.34		
RP-23-85	Siltronic	11/09/06	Arsenic	99.4	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	7,100	9.94			32.1
RP-23-85	Siltronic	11/09/06	Arsenic (Dissolved)	99.4	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	7,100	9.94			32.1
RP-23-85	Siltronic	11/09/06	Dimethylphthalate	12.0 J	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				4.00	
RP-23-85	Siltronic	11/09/06	Manganese	10,000	100.0	10.0	100.0	10.0	50.0	880	~	~	120	1,000	200			83.3
RP-23-85	Siltronic	11/09/06	Manganese (Dissolved)	9,940	100.0	10.0	100.0	10.0	50.0	880	~	~	120	994	199			82.8
RP-23-100	Siltronic	11/09/06	1,2-Dichlorobenzene	340	1,300	130	1,300	130	600	370	~	763	14.0	2.62				24.3
RP-23-100	Siltronic	11/09/06	1,4-Dichlorobenzene	120	190	19.0	190	19.0	75.0	0.500	~	763	15.0	6.32	1.60			8.00
RP-23-100	Siltronic	11/09/06	Aluminum	162 J	~	~	~	~	50.0	36,000	87.0	~	~		3.24	1.86		
RP-23-100	Siltronic	11/09/06	Arsenic	8.50 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	607				2.74
RP-23-100	Siltronic	11/09/06	Arsenic (Dissolved)	6.80 J	0.140	0.0140	0.140	0.0140	10.0	0.0450	150	~	3.10	486				2.19
RP-23-100	Siltronic	11/09/06	Benzene	5.40 J	51.0	5.10	51.0	5.10	5.00	0.350	~	~	130	1.06	1.08			
RP-23-100	Siltronic	11/09/06	Chlorobenzene	140	1,600	160	1,600	160	100.0	110	~	50.0	64.0		1.40		2.80	
RP-23-100	Siltronic	11/09/06	Manganese	8,940	100.0	10.0	100.0	10.0	50.0	880	~	~	120	894	179			74.5
RP-23-100	Siltronic	11/09/06	Manganese (Dissolved)	8,870	100.0	10.0	100.0	10.0	50.0	880	~	~	120	887	177			73.9
RP-23-100	Siltronic	11/09/06	Vinyl chloride	7.30 J	2.40	0.240	2.40	0.240	2.00	0.0200	~	~	~	30.4	3.65			

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
RP-23-125	Siltronic	11/10/06	1,2-Dichlorobenzene	540	1,300	130	1,300	130	600	370	~	763	14.0	4.15				38.6
RP-23-125	Siltronic	11/10/06	1,4-Dichlorobenzene	150	190	19.0	190	19.0	75.0	0.500	~	763	15.0	7.89	2.00			10.0
RP-23-125	Siltronic	11/10/06	2,3,7,8-TCDD	3.84E-06 J	5.10E-09	5.10E-10	5.10E-09	5.10E-10	~	4.50E-07	~	3.80E-04	~	7,529				
RP-23-125	Siltronic	11/10/06	Aluminum	280	~	~	~	~	50.0	36,000	87.0	~	~		5.60	3.22		
RP-23-125	Siltronic	11/10/06	Benzene	29.0	51.0	5.10	51.0	5.10	5.00	0.350	~	~	130	5.69	5.80			
RP-23-125	Siltronic	11/10/06	Chlorobenzene	110	1,600	160	1,600	160	100.0	110	~	50.0	64.0		1.10		2.20	
RP-23-125	Siltronic	11/10/06	Dimethylphthalate	12.0 J	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				4.00	
RP-23-125	Siltronic	11/10/06	Manganese	1,090	100.0	10.0	100.0	10.0	50.0	880	~	~	120	109	21.8			9.08
RP-23-125	Siltronic	11/10/06	Manganese (Dissolved)	1,060	100.0	10.0	100.0	10.0	50.0	880	~	~	120	106	21.2			8.83
RP-23-125	Siltronic	11/10/06	Trichloroethene	21.0	30.0	3.00	30.0	3.00	5.00	0.0280	~	21,900	47.0	7.00	4.20			
RP-23-125	Siltronic	11/10/06	Vinyl chloride	5.30 J	2.40	0.240	2.40	0.240	2.00	0.0200	~	~	~	22.1	2.65			
RP-24-30	Siltronic	11/21/06	Aluminum	2,940	~	~	~	~	50.0	36,000	87.0	~	~		58.8	33.8		
RP-24-30	Siltronic	11/20/06	bis(2-Ethylhexyl) phthalate	1.80 J	2.20	0.220	2.20	0.220	6.00	4.80	~	3.00	~	8.18				
RP-24-30	Siltronic	11/21/06	Copper	7.30	~	~	~	~	1,300	1,500	2.70	3.60	~			2.70		
RP-24-30	Siltronic	11/20/06	Dimethylphthalate	190	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				63.3	
RP-24-30	Siltronic	11/21/06	Lead	6.50	~	~	~	~	15.0	~	0.540	0.540	~			12.0		
RP-24-30	Siltronic	11/21/06	Manganese	3,240	100.0	10.0	100.0	10.0	50.0	880	~	~	120	324	64.8			27.0
RP-24-30	Siltronic	11/21/06	Manganese (Dissolved)	3,230	100.0	10.0	100.0	10.0	50.0	880	~	~	120	323	64.6			26.9
RP-24-30	Siltronic	11/21/06	Mercury	0.0500 J	~	~	0.146	0.0146	2.00	11.0	0.770	0.0120	1.30				4.17	
RP-24-60	Siltronic	11/20/06	Acenaphthene	2.10 J	990	99.0	990	99.0	0.200	370	~	520	~		10.5			
RP-24-60	Siltronic	11/20/06	Aluminum	182 J	~	~	~	~	50.0	36,000	87.0	~	~		3.64	2.09		
RP-24-60	Siltronic	11/20/06	Aluminum (Dissolved)	89.6 J	~	~	~	~	50.0	36,000	87.0	~	~		1.79	1.03		
RP-24-60	Siltronic	11/20/06	Copper	8.40 J	~	~	~	~	1,300	1,500	2.70	3.60	~			3.11		
RP-24-60	Siltronic	11/20/06	Dimethylphthalate	35.0	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				11.7	
RP-24-60	Siltronic	11/20/06	Fluoranthene	1.00 J	140	14.0	140	14.0	0.200	1,500	~	~	~		5.00			
RP-24-60	Siltronic	11/20/06	Fluorene	2.50 J	5,300	530	5,300	530	0.200	240	~	~	3.90		12.5			
RP-24-60	Siltronic	11/20/06	Manganese	2,200	100.0	10.0	100.0	10.0	50.0	880	~	~	120	220	44.0			18.3
RP-24-60	Siltronic	11/20/06	Manganese (Dissolved)	2,140	100.0	10.0	100.0	10.0	50.0	880	~	~	120	214	42.8			17.8
RP-24-60	Siltronic	11/20/06	Phenanthrene	0.680 J	~	~	~	~	0.200	~	~	~	~		3.40			
RP-24-60	Siltronic	11/20/06	Pyrene	0.590 J	4,000	400	4,000	400	0.200	180	~	~	~		2.95			
RP-24-60	Siltronic	11/20/06	Zinc	103	26,000	2,600	26,000	2,600	5,000	11,000	36.0	33.0	~			2.86		
RP-24-73	Siltronic	11/21/06	Dimethylphthalate	5.60 J	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				1.87	
RP-24-73	Siltronic	11/21/06	Manganese	4,320	100.0	10.0	100.0	10.0	50.0	880	~	~	120	432	86.4			36.0
RP-24-73	Siltronic	11/21/06	Manganese (Dissolved)	4,410	100.0	10.0	100.0	10.0	50.0	880	~	~	120	441	88.2			36.8
RP-24-73	Siltronic	11/21/06	Nickel (Dissolved)	16.5 J	4,600	460	4,600	460	~	730	16.0	49.0	~			1.03		

TABLE 6
Stage 2 Source Control Evaluation Monitoring Wells Results
Exceeding Joint Source Control Strategy Screening Level Values
RP - Portland Site

Sample Location	Property	Sample Date	Analyte	Concentration (µg/L)	Screening Level Values (µg/L)									Exceedance Ratio[1]				
					Human Health						Ecological Receptors			Human Health		Ecological Receptors		
					Fish Consumption				Drinking Water					Fish Consumption	Drinking Water			
					EPA's 2006 NRWQC (Organism Only) [2,3]	Portland Harbor Specific Fish Consumption Rate [2,3]	DEQ's 2004 AWQC (organism only) [4]	Portland Harbor specific fish consumption rate [4]	MCL [5]	Tap Water PRG [6]	EPA's 2006 NRWQC (chronic) [4]	DEQ's 2004 AWQC (chronic) [4]	Oak Ridge National Laboratory's (Tier II SCV) [4]	Portland Harbor Specific Fish Consumption Rate	MCL	EPA's 2006 NRWQC (chronic)	DEQ's 2004 AWQC (chronic)	Oak Ridge National Laboratory's (Tier II SCV)
RP-24-85	Siltronic	11/21/06	1,2-Dichlorobenzene	480	1,300	130	1,300	130	600	370	~	763	14.0	3.69				34.3
RP-24-85	Siltronic	11/21/06	1,4-Dichlorobenzene	130	190	19.0	190	19.0	75.0	0.500	~	763	15.0	6.84	1.73			8.67
RP-24-85	Siltronic	11/21/06	Dimethylphthalate	20.0 J	1,100,000	110,000	1,100,000	110,000	~	360,000	~	3.00	~				6.67	
RP-24-85	Siltronic	11/21/06	Manganese	1,540	100.0	10.0	100.0	10.0	50.0	880	~	~	120	154	30.8			12.8
RP-24-85	Siltronic	11/21/06	Manganese (Dissolved)	1,550	100.0	10.0	100.0	10.0	50.0	880	~	~	120	155	31.0			12.9
RP-24-85	Siltronic	11/21/06	Trichloroethene	12.0	30.0	3.00	30.0	3.00	5.00	0.0280	~	21,900	47.0	4.00	2.40			
RP-24-85	Siltronic	11/21/06	Vinyl chloride	8.50 J	2.40	0.240	2.40	0.240	2.00	0.0200	~	~	~	35.4	4.25			

Notes:

µg/L = micrograms per liter

~ = no screening value available

1 = Exceedance ratios were calculated only for those constituents exceeding their most appropriate Joint Source Control Strategy (JSCS) Screening Level Values (SLVs) as described in Section 3.0 of the **JSCS, December 2005**.

2 = Screening values were taken from **United States Environmental Protection Agency (EPA) document** titled **National Recommended Water Quality Criteria (NRWQC), 2006**; Portland Harbor Specific Fish Consumption Rates are the **NRWQC (Organism Only)** value divided by 10.

3 = Silvex screening value used for **EPA's 2006 NRWQC (chronic)** is the value from Human Health for Consumption Water plus Organism. It is not divided by 10 for the Portland Harbor Specific Fish Consumption rate column because the value already is conservative by including consumption of water.

4 = Screening values were taken from **Portland Harbor JSCS, December 2005**; Portland Harbor Specific Fish Consumption Rates are the **DEQ's 2004 AWQCs** divided by 10.

5 = Maxmium Contaminant Level (MCL) screening values from **EPA Office of Water (4606M), EPA 816-F-03-016, June 2003.**

6 = Preliminary Remediation Goal (PRG) screening values from EPA Region 9, **PRG Table Version 9, October 2004.** In some cases these values appear to differ slightly from **JSCS** SLVs due to rounding differences.

TABLE 7
Groundwater Screening Values
Stage 2 Source Control Evaluation
RP - Portland Site

Chemical Class	Representative Constituent	Screening Value	Screening Value Basis and Comments
VOCs	Benzene	5.1 µg/L	JSCS Table 3.1, Portland Harbor Specific Fish Consumption Rate used as screening value; outliers eliminated from contour have analytical results posted for reference.
VOCs	1,2-Dichlorobenzene	130 µg/L	JSCS Table 3.1, Portland Harbor Specific Fish Consumption Rate used as screening value; outliers eliminated from contour have analytical results posted for reference.
Phenols	2,4-Dichlorophenol	29 µg/L	JSCS Table 3.1, Portland Harbor Specific Fish Consumption Rate used as screening value; outliers eliminated from contour have analytical results posted for reference.
Pesticides	Dieldrin	MDL	Screening values are less than the analytical detection limit, so MDL was used to draw groundwater plume; outliers eliminated from contour have analytical results posted for reference.
Dioxins/Furans	2,3,7,8-TCDD	MDL	Screening values are less than the analytical detection limit, so MDL was used to draw groundwater plume; outliers eliminated from contour have analytical results posted for reference.
Herbicides	2,4,5-TP (Silvex)	10 µg/L	EPA 2006 NRWQC used to contour; no JSCS SLV for fish consumption available; outliers eliminated from contour have analytical results posted for reference.

Notes:

VOCs	volatile organic compounds
µg/L	micrograms per liter
MDL	method detection limit
JSCS	Joint Source Control Strategy, December 2005
EPA	United States Environmental Protection Agency
NRWQC	National Recommended Water Quality Criteria
SLV	Screening Level Value

Screening value criteria were those requested by the Oregon Department of Environmental Quality in its letters of August 1, 2005 and January 23, 2007.
The criteria are not intended to represent appropriate regulatory levels for risk or cleanup, or to trigger any other action.

FIGURES

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

2006 Aerial from Metro Data Resource Center

0' 180' 360' 540'

1" = 360'

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

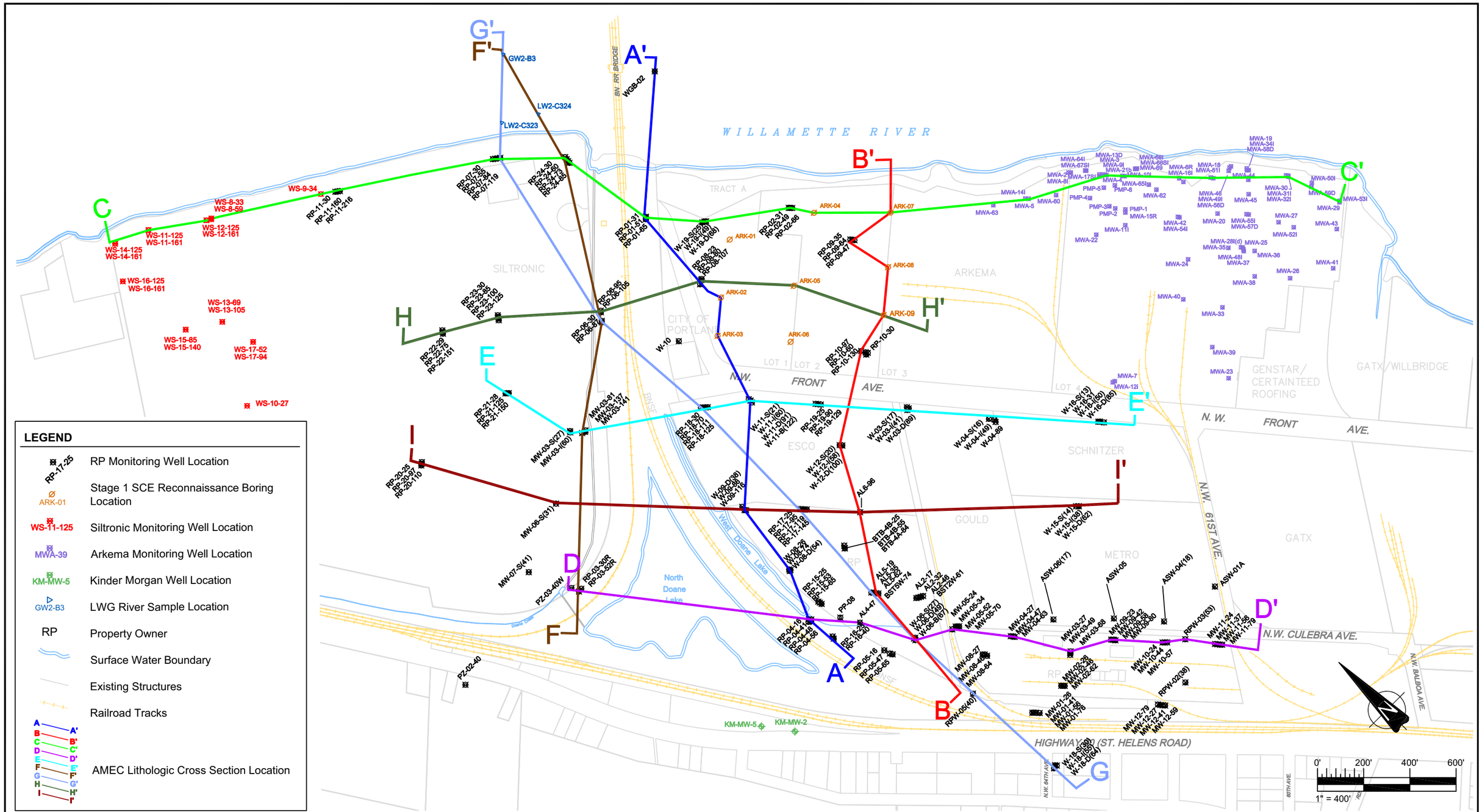
DWN BY:	LM
CHK'D BY:	MP
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 360'

PROJECT: RP - PORTLAND SITE

TITLE: STAGE 2 SOURCE CONTROL EVALUATION (SCE) AND EXISTING MONITORING WELL LOCATIONS

DATE:	JUNE 2007
PROJECT NO:	061M-107030 P69T1
REV. NO.:	3
FIGURE No.	1

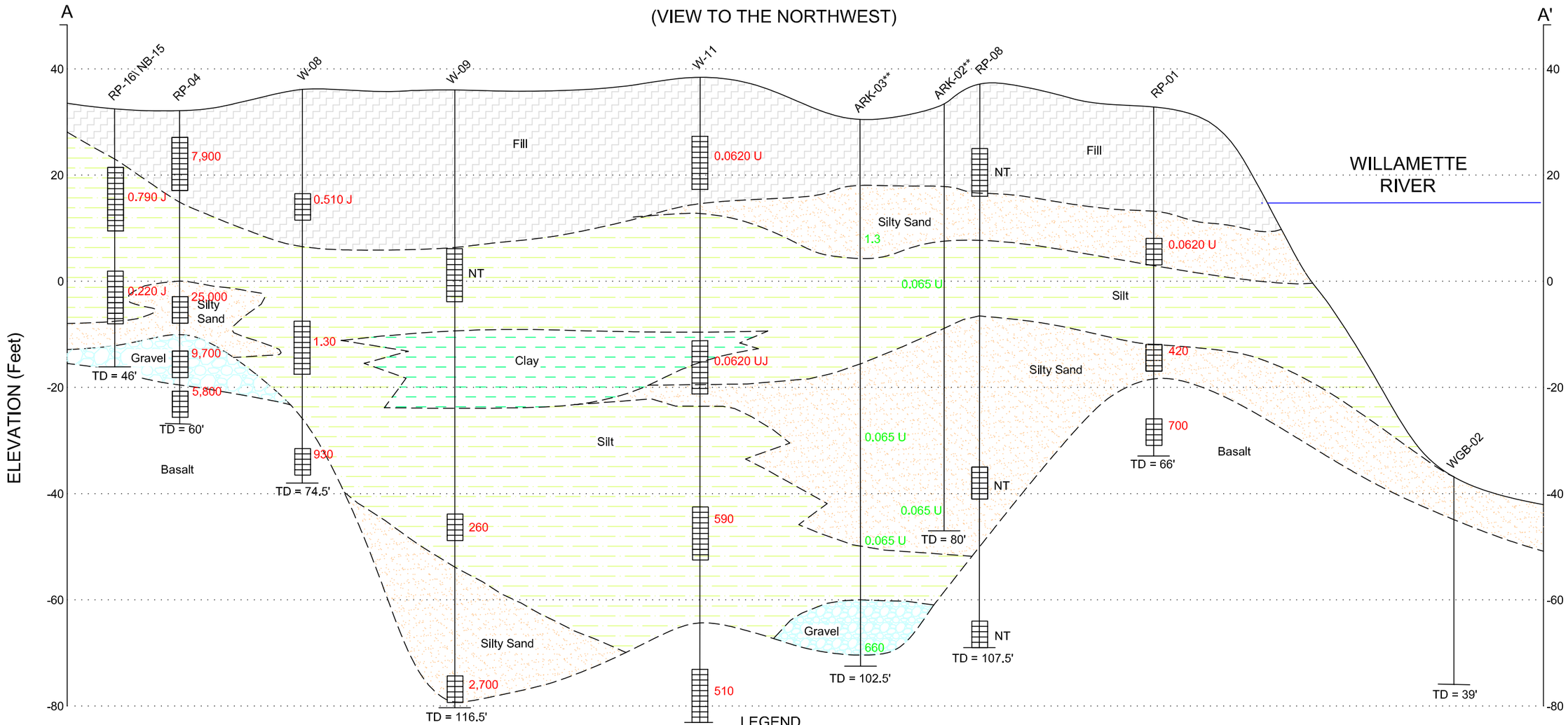
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_01_Siltronic_Upland_Existing_Monitoring_Well_Locations.dwg – 11X17 – Jun. 21, 2007 10:37am – patrick.mccarthy



THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

CLIENT: SLLI	DWN BY: LM	PROJECT: RP - PORTLAND SITE	DATE: JUNE 2007
	CHK'D BY: CJ		PROJECT NO: 0-61M-107030-P69T1
AMEC Earth & Environmental 7376 S.W. Durham Road Portland, OR U.S.A. 97224	DATUM: NAD83	TITLE: LITHOLOGIC CROSS SECTION LOCATIONS	REV. NO.: 2
	PROJECTION: OR SP N. Int Ft.		FIGURE No. 2
	SCALE: 1" = 400'		

K:□10000□10700□10703□Phase 69 Source Control Evaluation□Stage 2 SCE Tech Memo□DWG□Figure_02_Lithologic_Cross-Sections.dwg – All Zones – Jun. 21, 2007 11:02am – patrick.mccarthy

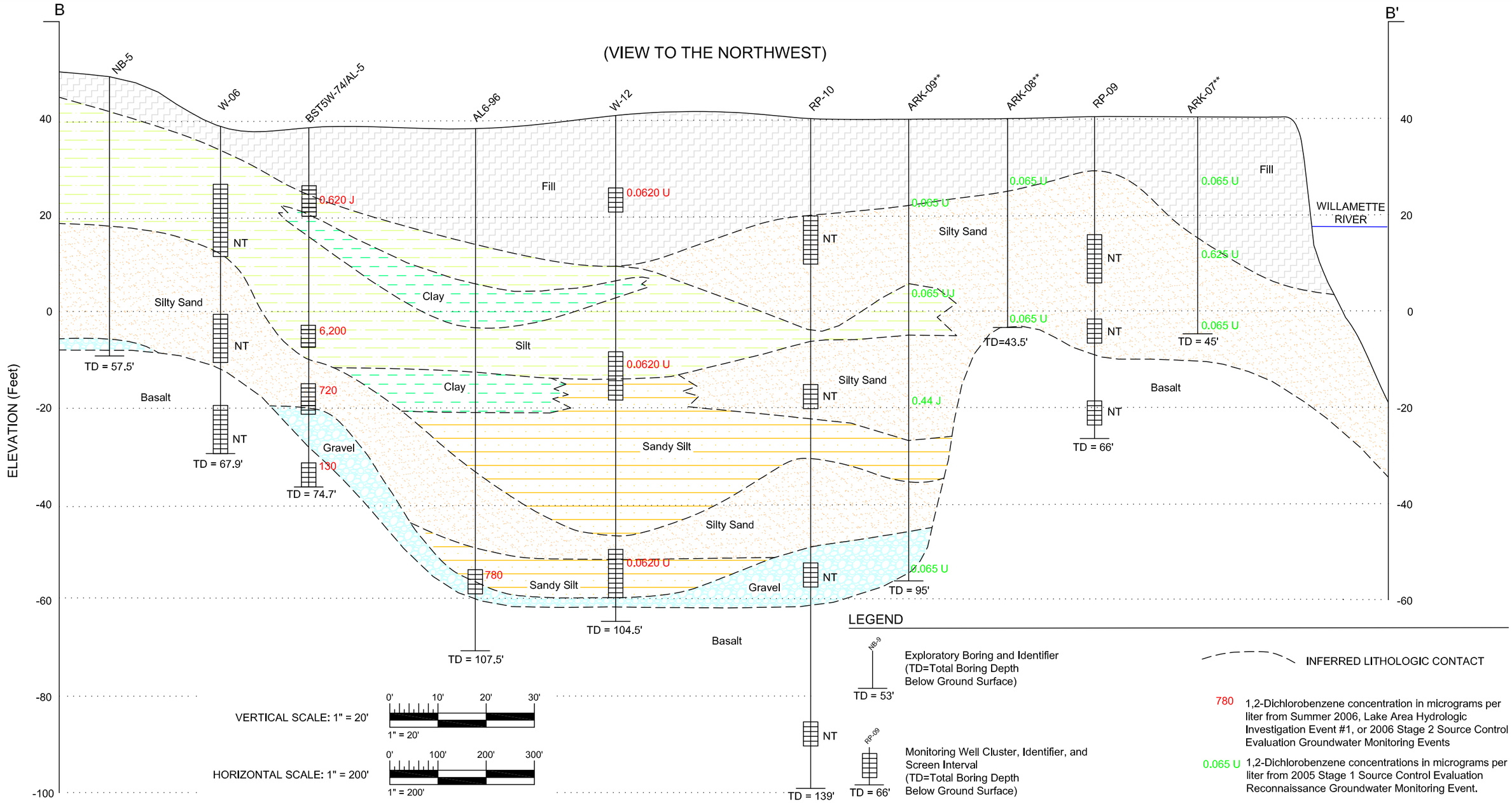


NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

NOTE:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007
.
THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT: SLLI	DWN BY: LM	PROJECT: RP - PORTLAND SITE	DATE: JUNE 2007
	CHK'D BY: CJ		PROJECT NO: 061M-107030-P69 T1
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR U.S.A. 97224	DATUM: City of Portland	TITLE: LITHOLOGIC CROSS SECTION FROM A-A'	REV. NO.: 1
	PROJECTION: -		FIGURE No. 3
	SCALE: AS NOTED		

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_03_Cross_Section_A-A'.dwg – 11X17 – Jun. 21, 2007 9:39am – patrick.mccarthy



NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

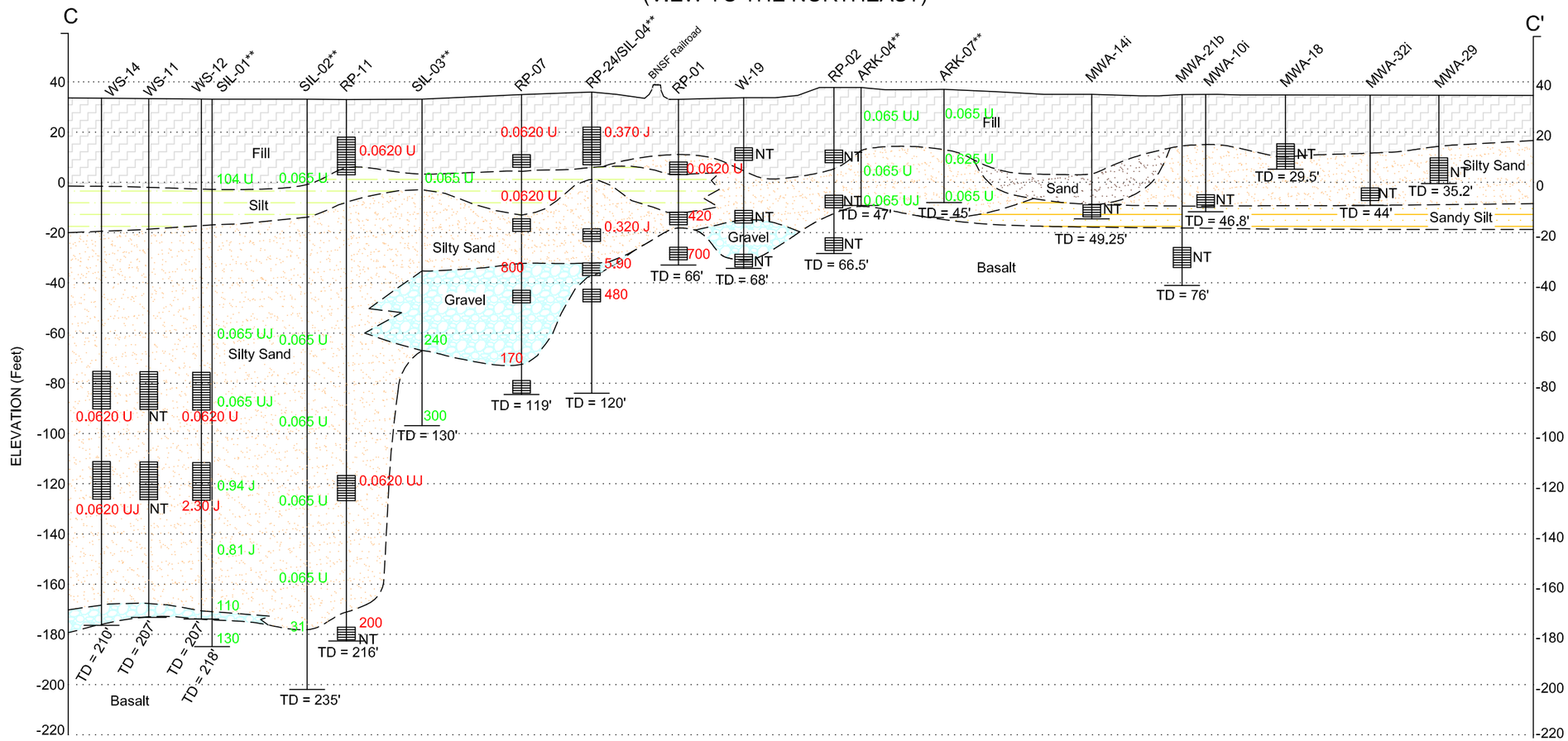
NOTE:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT: SLLI	DWN BY: LM	PROJECT: RP - PORTLAND SITE	DATE: JUNE 2007
	CHK'D BY: CJ		PROJECT NO: 061M-107030-P69 T1
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR U.S.A. 97224	DATUM: City of Portland	TITLE: LITHOLOGIC CROSS SECTION FROM B-B'	REV. NO.: 2
	PROJECTION: -		FIGURE No. 4
	SCALE: AS NOTED		

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_04_Cross_Section_B-B'.dwg – Layout1 – Jun. 21, 2007 9:42am – patrick.mccarthy

(VIEW TO THE NORTHEAST)



VERTICAL SCALE: 1" = 50'

HORIZONTAL SCALE: 1" = 500'

LEGEND

SIL-02 — TD = 235' — Exploratory Boring and Identifier (TD=Total Boring Depth Below Ground Surface)

RP-07 — TD = 119' — Monitoring Well Cluster, Identifier, and Screen Interval (TD=Total Boring Depth Below Ground Surface)

INFERRED LITHOLOGIC CONTACT

**DENOTES APPROXIMATED ELEVATION

170 — 1,2-Dichlorobenzene concentration in micrograms per liter from Summer 2006, Lake Area Hydrologic Investigation Event #1, or 2006 Stage 2 Source Control Evaluation Groundwater Monitoring Events

240 — 1,2-Dichlorobenzene concentrations in micrograms per liter from 2005 Stage 1 Source Control Evaluation Reconnaissance Groundwater Monitoring Event.

NT — NOT TESTED

NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

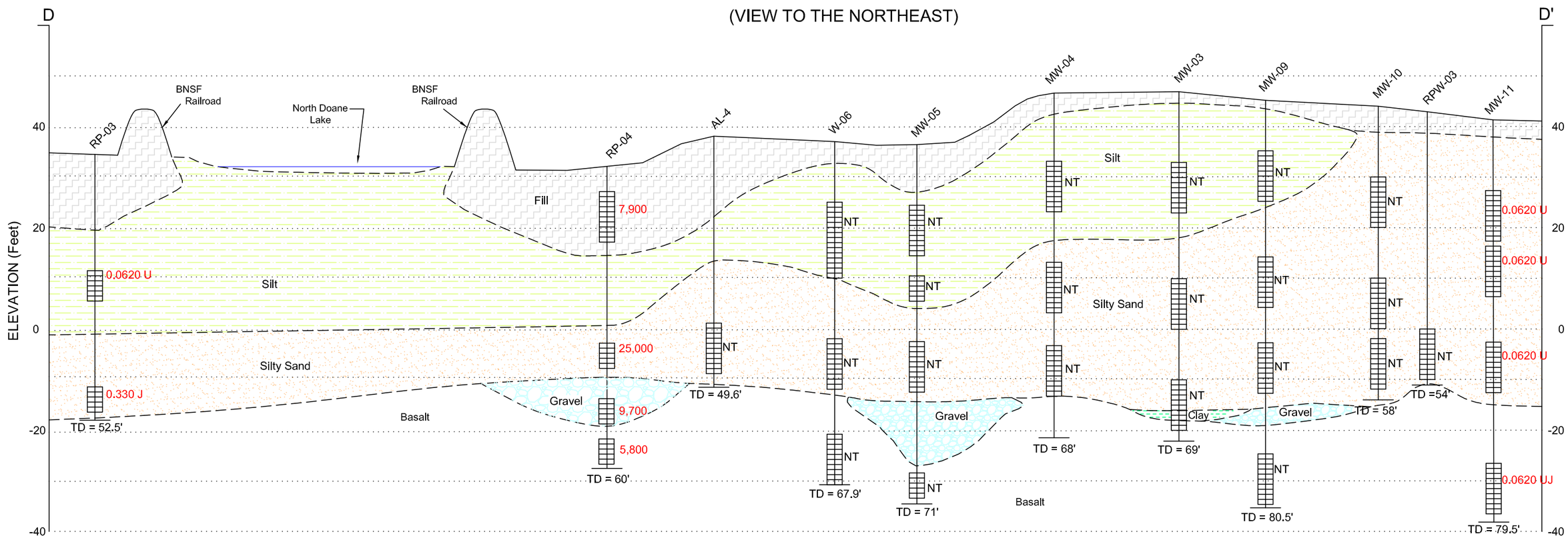
NOTE:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	CJ
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT:	RP - PORTLAND SITE
TITLE:	LITHOLOGIC CROSS SECTION FROM C-C'
DATE:	JUNE 2007
PROJECT NO:	061M-107030-P69 T1
REV. NO.:	2
FIGURE No.	5

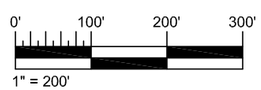
AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_05_Cross_Section_C-C' .dwg – 11x17 – Jun. 21, 2007 9:42am – patrick.mccarthy



VERTICAL SCALE: 1" = 20'

HORIZONTAL SCALE: 1" = 200'



NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

LEGEND

RP-03
TD = 52.5'
Monitoring Well Cluster, Identifier, and Screen Interval (TD=Total Boring Depth Below Ground Surface)

INFERRED LITHOLOGIC CONTACT

**DENOTES APPROXIMATED ELEVATION

0.390 UJ 1,2-Dichlorobenzene concentration in micrograms per liter from Summer 2006, Lake Area Hydrologic Investigation Event #1, or 2006 Stage 2 Source Control Evaluation Groundwater Monitoring Events

872 1,2-Dichlorobenzene concentrations in micrograms per liter from 2005 Stage 1 Source Control Evaluation Reconnaissance Groundwater Monitoring Event.

NT NOT TESTED

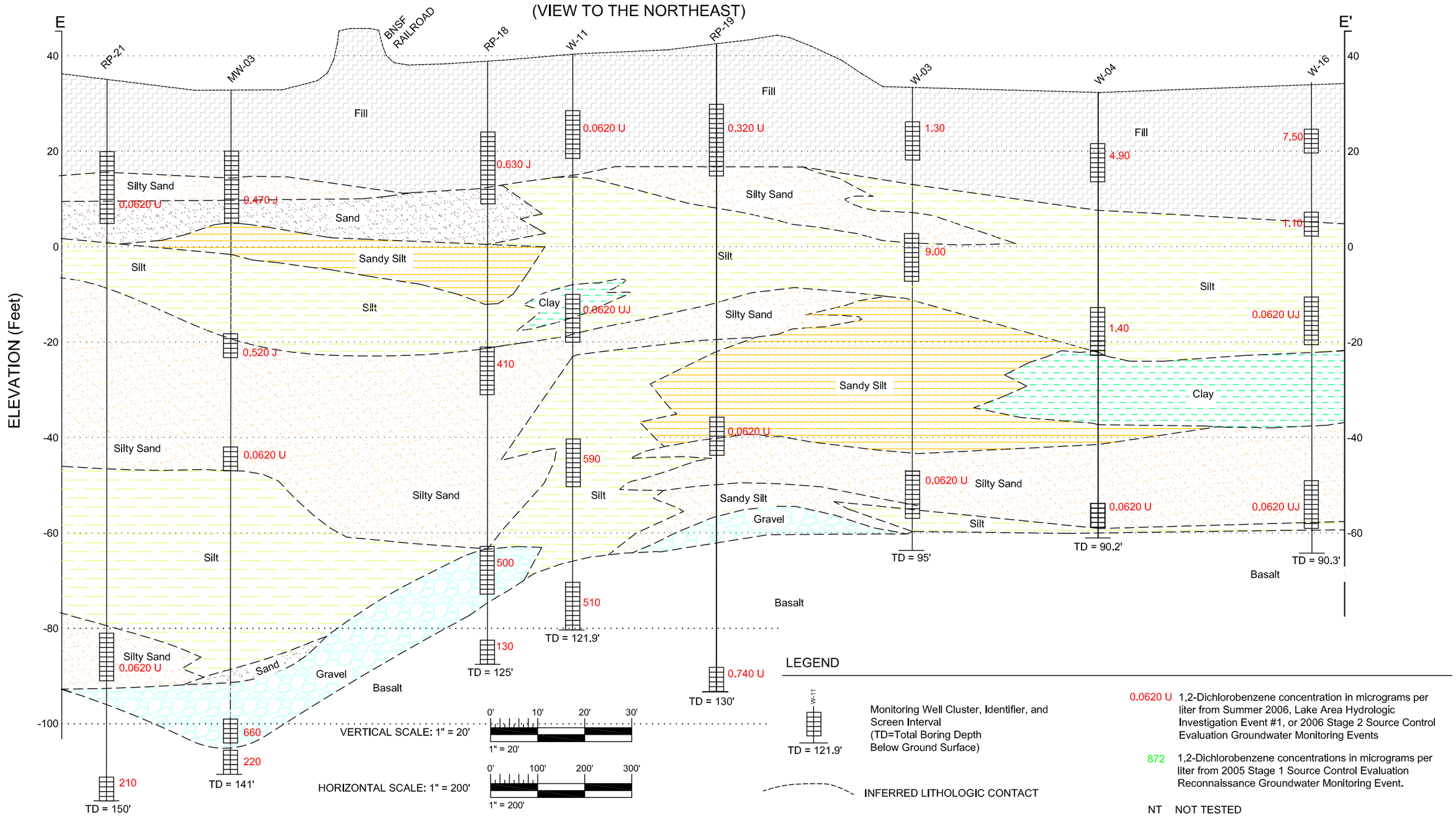
NOTE:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	CJ
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT:	RP - PORTLAND SITE
TITLE:	LITHOLOGIC CROSS SECTION FROM D-D'
DATE:	JUNE 2007
PROJECT NO:	061M-107030-P69 T1
REV. NO.:	2
FIGURE No.	6

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_06_Cross_Section_D-D'.dwg – 11x17 – Jun. 21, 2007 9:43am – patrick.mccarthy



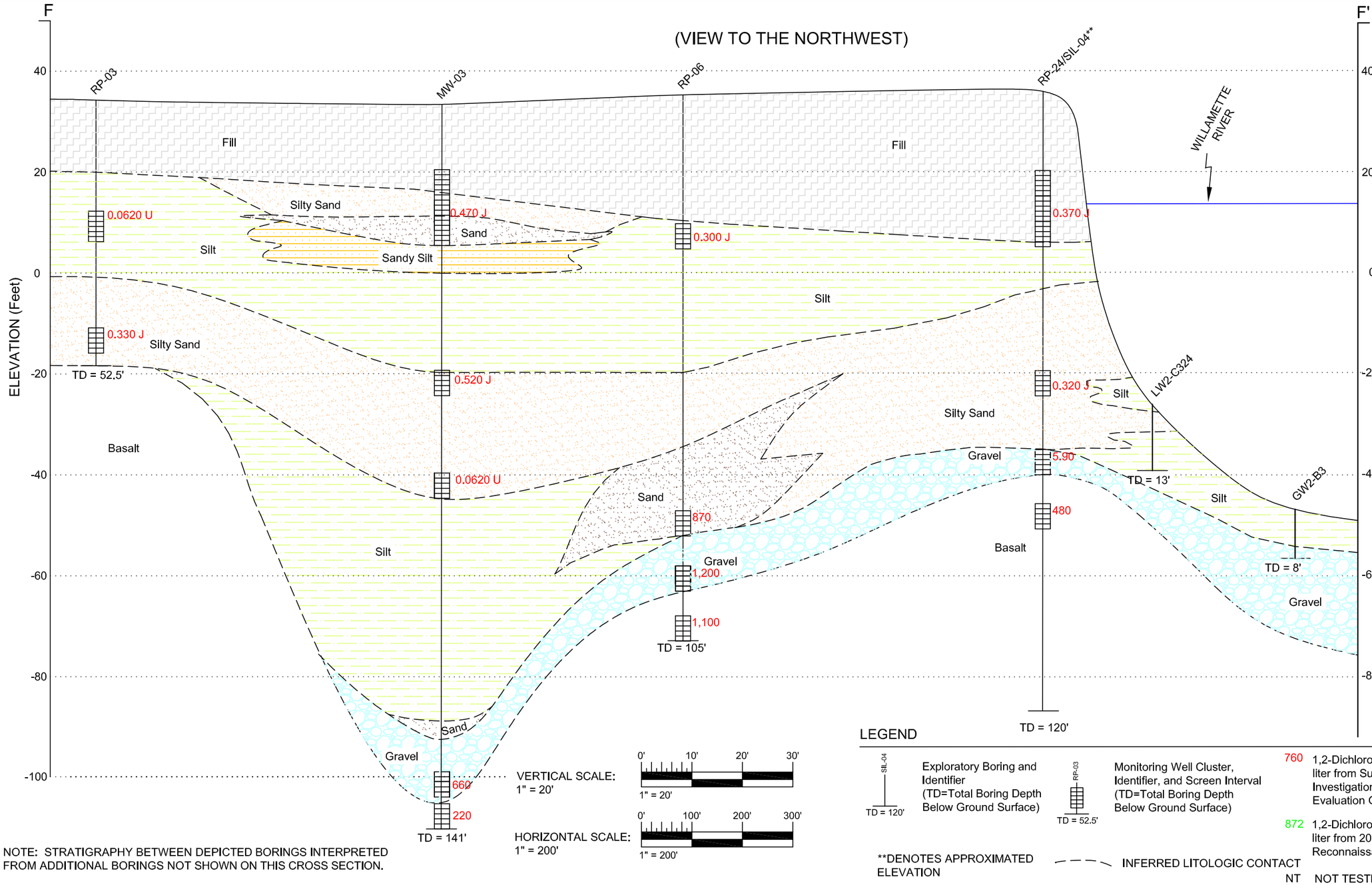
NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT: SLLI	DWN BY: LM	PROJECT: RP - PORTLAND SITE	DATE: JUNE 2007
	CHK'D BY: CJ		PROJECT NO: 061M-107030-P69 T1
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR U.S.A. 97224	DATUM: City of Portland	TITLE: LITHOLOGIC CROSS SECTION FROM E-E'	REV. NO.: 1
	PROJECTION: -		FIGURE No. 7
	SCALE: AS NOTED		

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_07_Cross_Section_E-E'.dwg – 11x17 – Jun. 21, 2007 9:44am – patrick.mccarthy



NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

LEGEND

SIL-04 / TD = 120' — Exploratory Boring and Identifier (TD=Total Boring Depth Below Ground Surface)

RP-03 / TD = 52.5' — Monitoring Well Cluster, Identifier, and Screen Interval (TD=Total Boring Depth Below Ground Surface)

760 — 1,2-Dichlorobenzene concentration in micrograms per liter from Summer 2006, Lake Area Hydrologic Investigation Event #1, or 2006 Stage 2 Source Control Evaluation Groundwater Monitoring Events

872 — 1,2-Dichlorobenzene concentrations in micrograms per liter from 2005 Stage 1 Source Control Evaluation Reconnaissance Groundwater Monitoring Event.

**DENOTES APPROXIMATED ELEVATION

INFERRED LITOLOGIC CONTACT

NT NOT TESTED

NOTE:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	CJ
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT:	RP - PORTLAND SITE
TITLE:	LITHOLOGIC CROSS SECTION FROM F-F'
DATE:	JUNE 2007
PROJECT NO:	061M-107030-P69 T1
REV. NO.:	2
FIGURE No.	8

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

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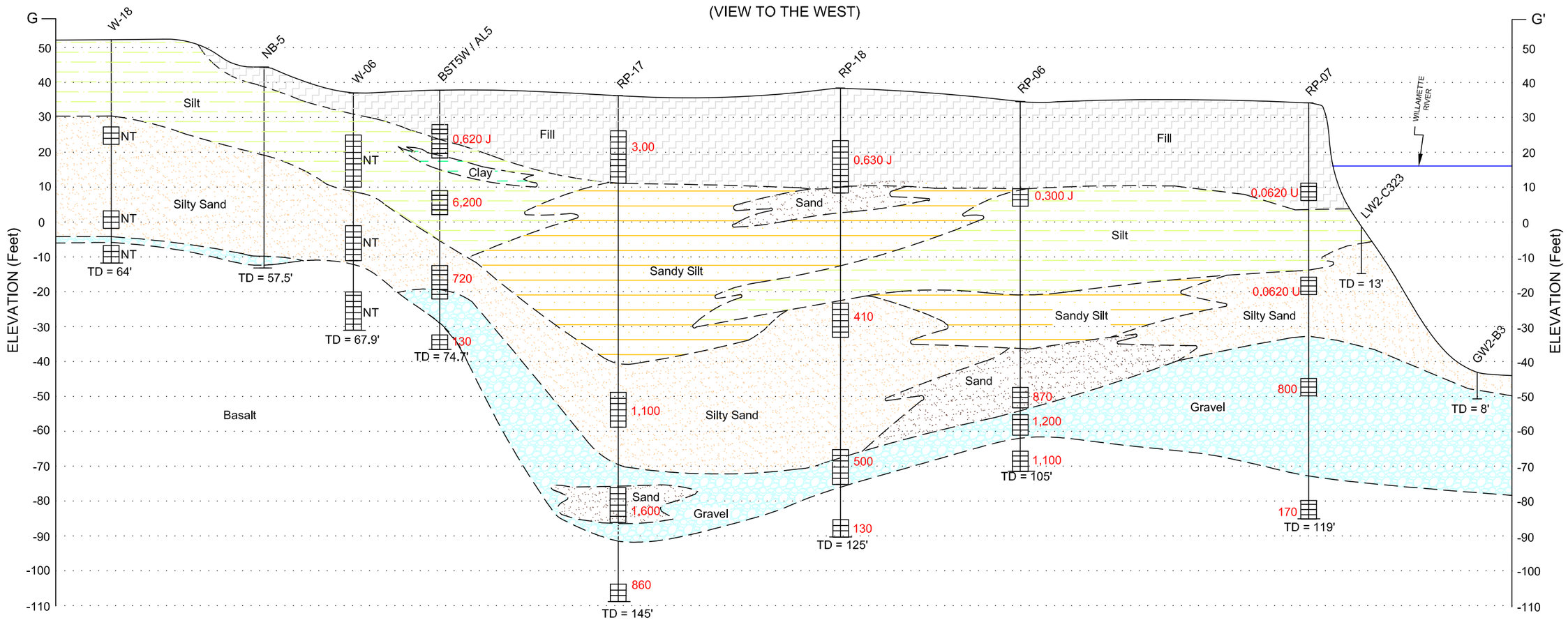

LEGEND

VERTICAL SCALE: 1" = 30' (0', 15', 30', 45')

HORIZONTAL SCALE: 1" = 300' (0', 150', 300', 450')

NB-5 — Exploratory Boring and Identifier (TD=Total Boring Depth Below Ground Surface) — TD = 57.5'

RP-07 — Monitoring Well Cluster, Identifier, and Screen Interval (TD=Total Boring Depth Below Ground Surface) — TD = 119'

INFERRED LITHOLOGIC CONTACT

**DENOTES APPROXIMATED ELEVATION

170 — 1,2-Dichlorobenzene concentration in micrograms per liter from Summer 2006, Lake Area Hydrologic Investigation Event #1, or 2006 Stage 2 Source Control Evaluation Groundwater Monitoring Events

872 — 1,2-Dichlorobenzene concentrations in micrograms per liter from 2005 Stage 1 Source Control Evaluation Reconnaissance Groundwater Monitoring Event.

NT — NOT TESTED

NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS MAY HAVE BEEN INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT: SLLI	DWN BY: LM	PROJECT: RP - PORTLAND SITE	DATE: JUNE 2007
	CHK'D BY: CJ		PROJECT NO: 061M-107030-P69 T1
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR U.S.A. 97224	DATUM: City of Portland	TITLE: LITHOLOGIC CROSS SECTION FROM G-G'	REV. NO.: 2
	PROJECTION: -		FIGURE No. 9
	SCALE: AS NOTED		

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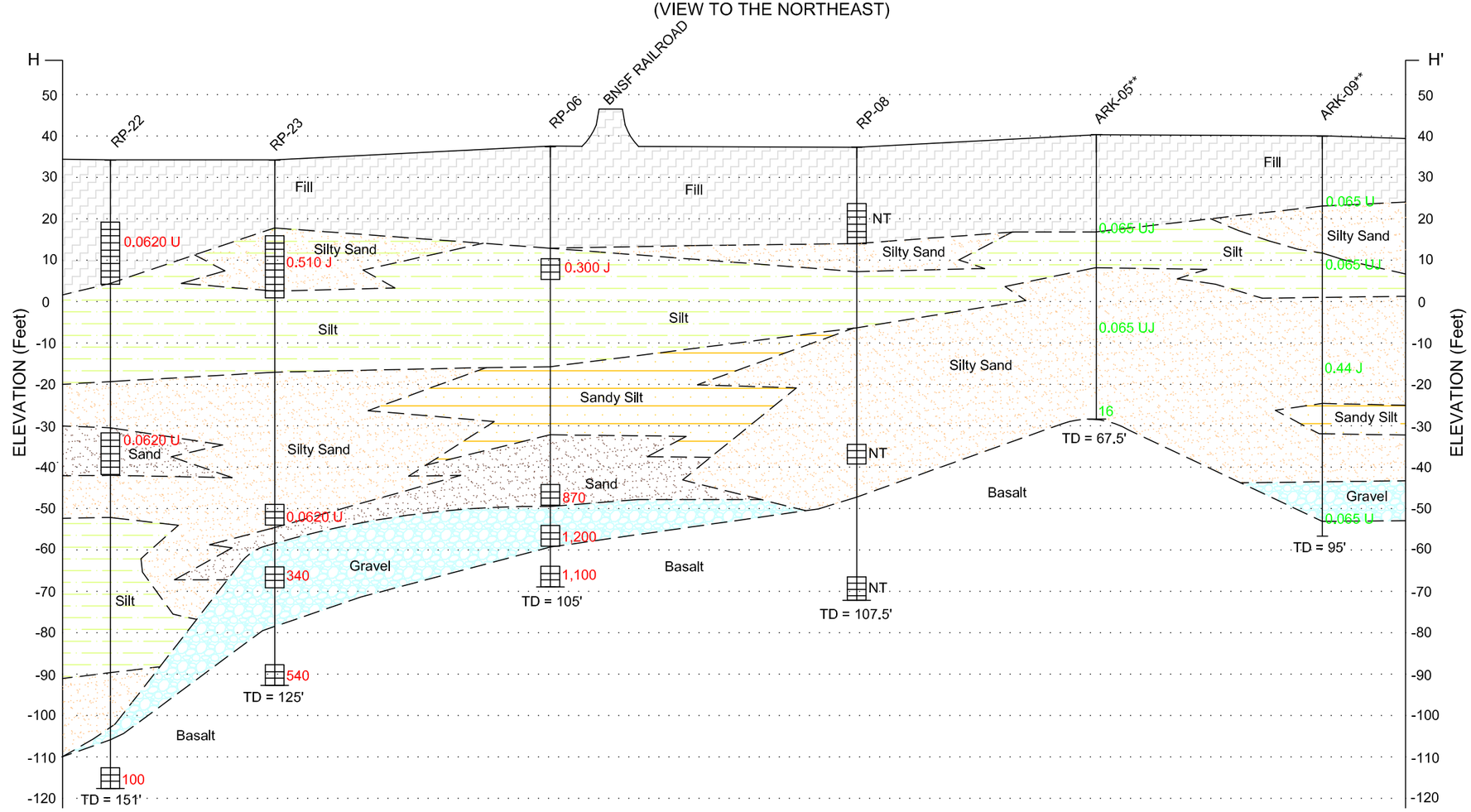
(VIEW TO THE NORTHEAST)



VERTICAL SCALE: 1" = 30'

HORIZONTAL SCALE: 1" = 200'

NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS MAY HAVE BEEN INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

LEGEND

ARK-05 — TD = 67.5' — Exploratory Boring and Identifier (TD=Total Boring Depth Below Ground Surface)

RP-22 — TD = 151' — Monitoring Well Cluster, Identifier, and Screen Interval (TD=Total Boring Depth Below Ground Surface)

760 — 1,2-Dichlorobenzene concentration in micrograms per liter from Summer 2006, Lake Area Hydrologic Investigation Event #1, or 2006 Stage 2 Source Control Evaluation Groundwater Monitoring Events

0.0620 UJ — 1,2-Dichlorobenzene concentrations in micrograms per liter from 2005 Stage 1 Source Control Evaluation Reconnaissance Groundwater Monitoring Event.

**DENOTES APPROXIMATED ELEVATION

INFERRED LITHOLOGIC CONTACT

NT — NOT TESTED

NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	CJ
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT:	RP - PORTLAND SITE
TITLE:	LITHOLOGIC CROSS SECTION FROM H-H'
DATE:	JUNE 2007
PROJECT NO:	061M-107030-P69 T1
REV. NO.:	2
FIGURE No.	10

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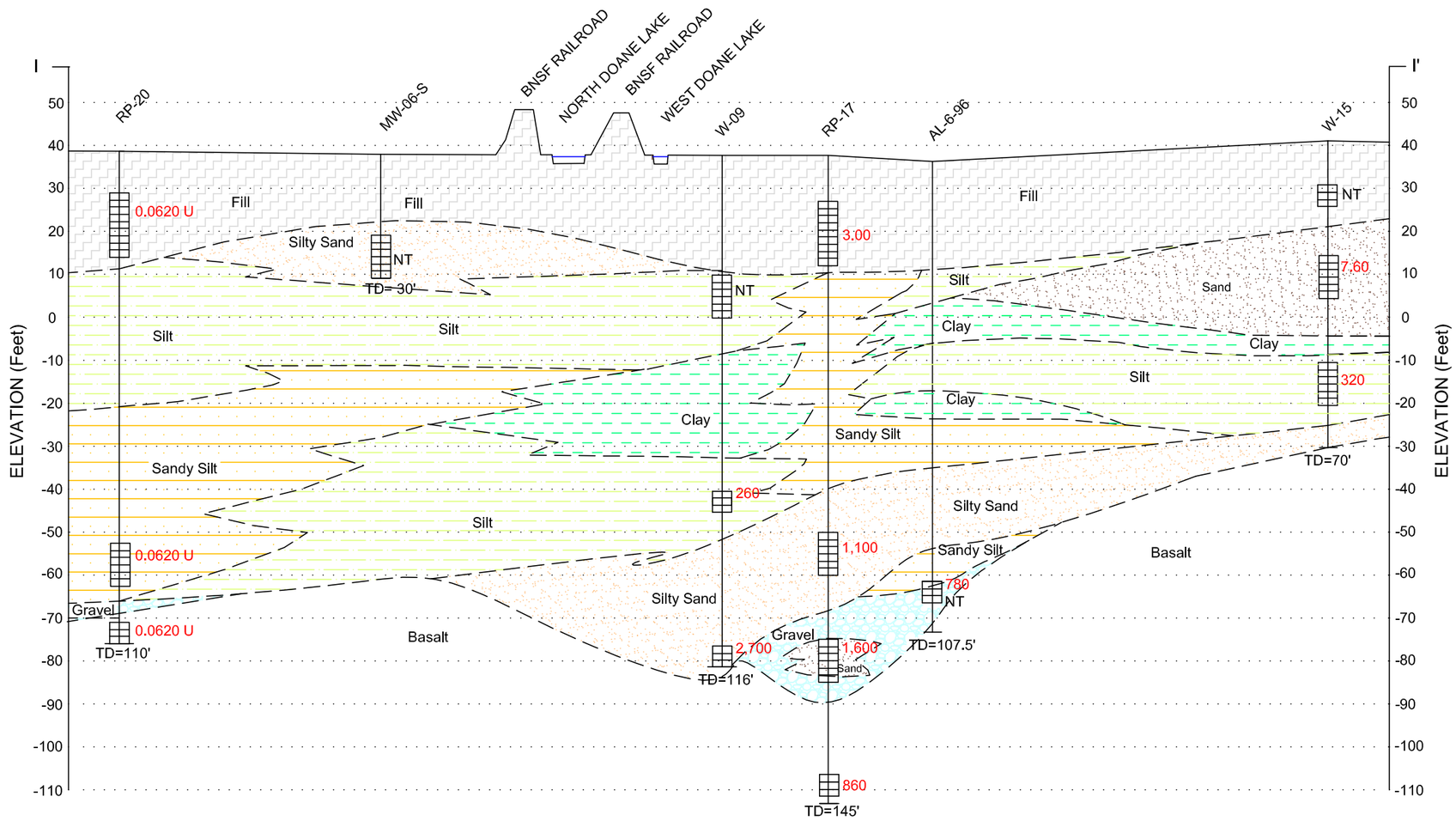
(VIEW TO THE NORTHEAST)



VERTICAL SCALE: 1" = 30'

HORIZONTAL SCALE: 1" = 300'

NOTE: STRATIGRAPHY BETWEEN DEPICTED BORINGS MAY HAVE BEEN INTERPRETED FROM ADDITIONAL BORINGS NOT SHOWN ON THIS CROSS SECTION.

LEGEND

RP-20 — TD = 120' — Monitoring Well Cluster, Identifier, and Screen Interval (TD=Total Boring Depth Below Ground Surface)

INFERRED LITHOLOGIC CONTACT

320 — 1,2-Dichlorobenzene concentration in micrograms per liter from Summer 2006, Lake Area Hydrologic Investigation Event #1, or 2006 Stage 2 Source Control Evaluation Groundwater Monitoring Events

872 — 1,2-Dichlorobenzene concentrations in micrograms per liter from 2005 Stage 1 Source Control Evaluation Reconnaissance Groundwater Monitoring Event.

NT — NOT TESTED

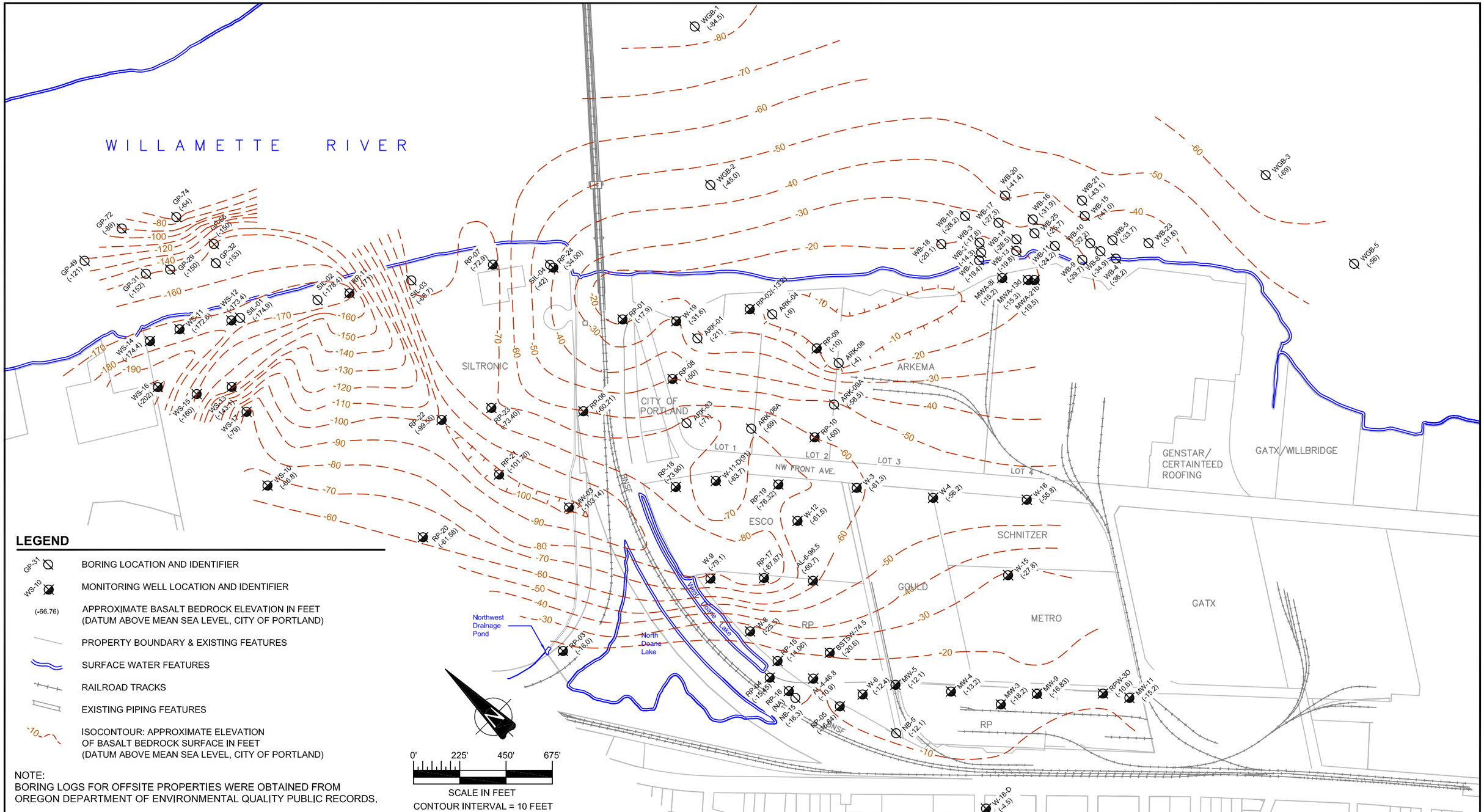
NOTE: THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

THE CONSTITUENT CONCENTRATIONS PRESENTED REPRESENT VALIDATED ANALYTICAL RESULTS FROM THE SPECIFIED GROUNDWATER CHARACTERIZATION EVENTS. DATA QUALIFIER DEFINITIONS ARE PROVIDED ON THE ASSOCIATED GROUNDWATER CONCENTRATION TABLES.

CLIENT:	SLLI
DWN BY:	LM
CHK'D BY:	CJ
DATUM:	City of Portland
PROJECTION:	-
SCALE:	AS NOTED
PROJECT:	RP - PORTLAND SITE
TITLE:	LITHOLOGIC CROSS SECTION FROM I-I'
DATE:	JUNE 2007
PROJECT NO:	061M-107030-P69 T1
REV. NO.:	2
FIGURE No.	11

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_11_Cross_Section_I-I'.dwg – 11x17 – Jun. 21, 2007 9:46am – patrick.mccarthy

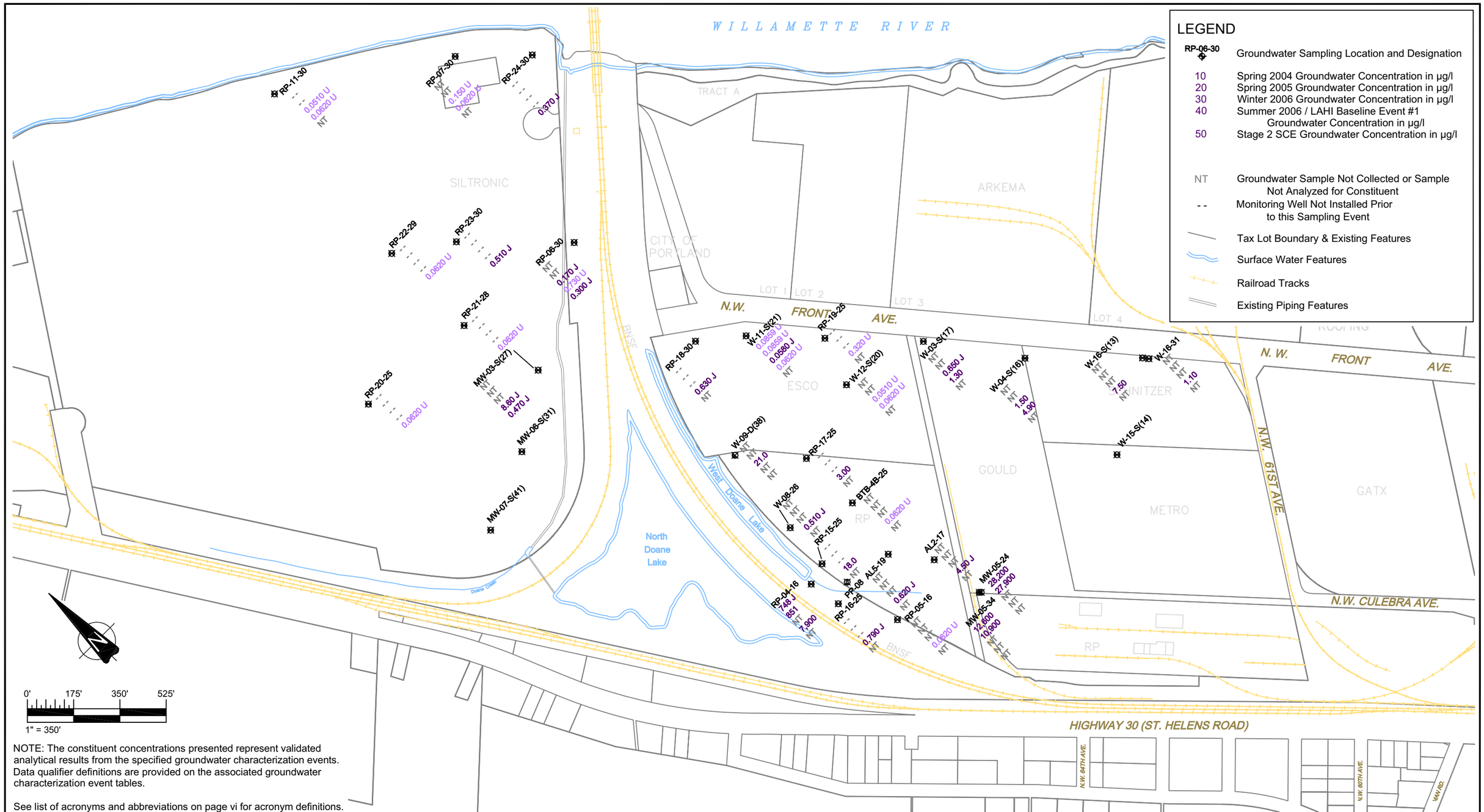


NOTE:
BORING LOGS FOR OFFSITE PROPERTIES WERE OBTAINED FROM OREGON DEPARTMENT OF ENVIRONMENTAL QUALITY PUBLIC RECORDS.

NOTE:
THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL STAGE 2 SOURCE CONTROL EVALUATION TECHNICAL MEMORANDUM DATED JUNE 21, 2007.

CLIENT: SLLI	DWN BY: JH/LM	PROJECT: RP - PORTLAND SITE	DATE: JUNE 2007
	CHK'D BY: CJ		PROJECT NO: 061M-107030 P69 T1
AMEC Earth & Environmental, 7376 S.W. Durham Road, Portland, OR U.S.A. 97224	DATUM: City of Portland	TITLE: BASALT ELEVATION CONTOUR MAP	REV. NO.: 3
	PROJECTION: OR SP North Intl Ft		FIGURE No. 12
	SCALE: As Shown		

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figure_12_Basalt_Elevation_Contours_Dec06.dwg – Layout1 – Jun. 21, 2007 9:46am – patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

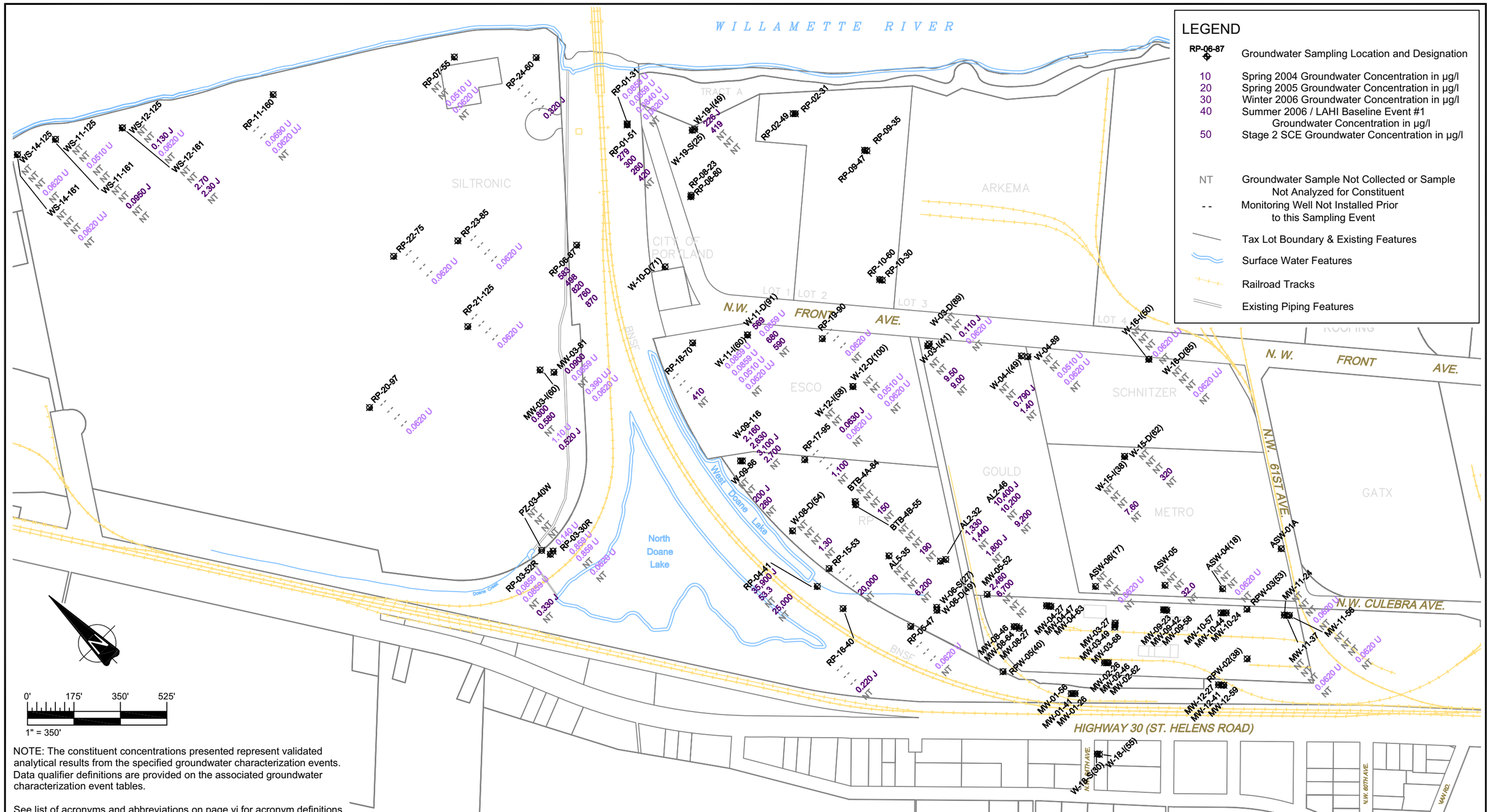
See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	1,2-DICHLOROBENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	13

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 13-16 12DCB in GW (2004-2006).dwg - Fill - Jun. 21, 2007 10:03am - patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: 1,2-DICHLOROBENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
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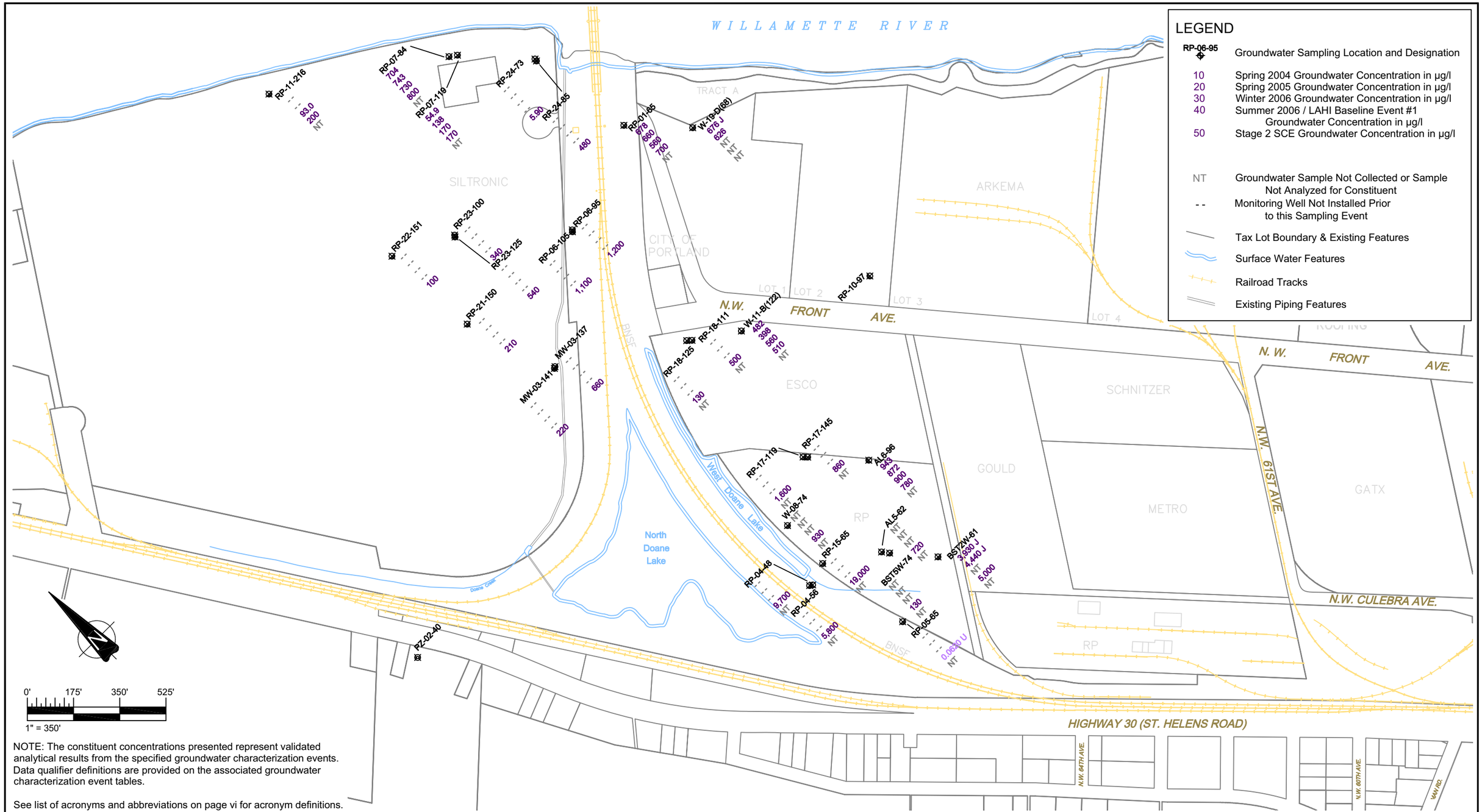
FIGURE No.	14

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 13-16 12DCB in GW (2004-2006).dwg - Alluvium - Jun. 21, 2007 10:03am - patrick.mccarthy



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DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: 1,2-DICHLOROBENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
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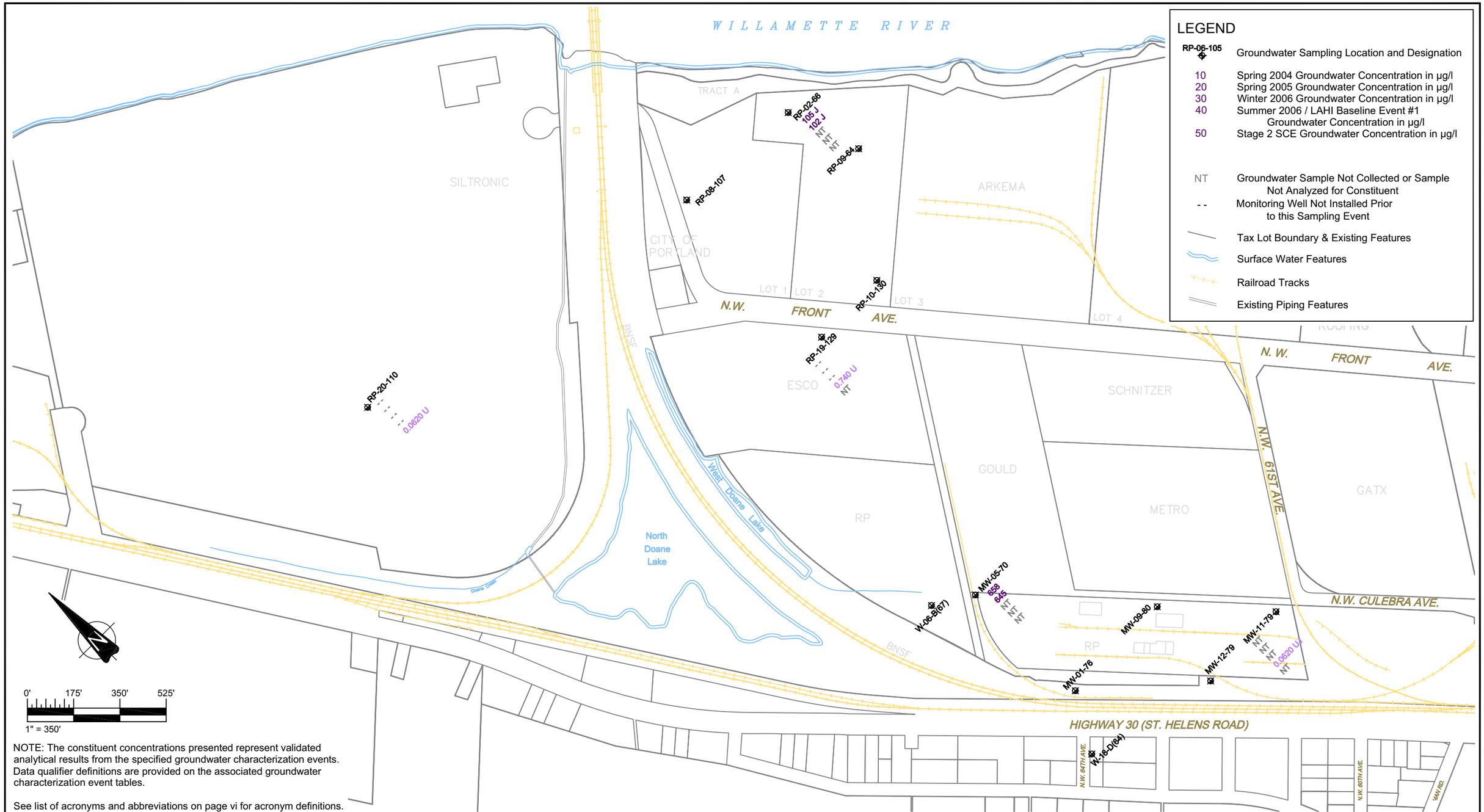
FIGURE No.	15

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 13-16 12DCB in GW (2004-2006).dwg - Deep Gravel - Jun. 21, 2007 10:03am - patrick.mccarthy



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PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: 1,2-DICHLOROBENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
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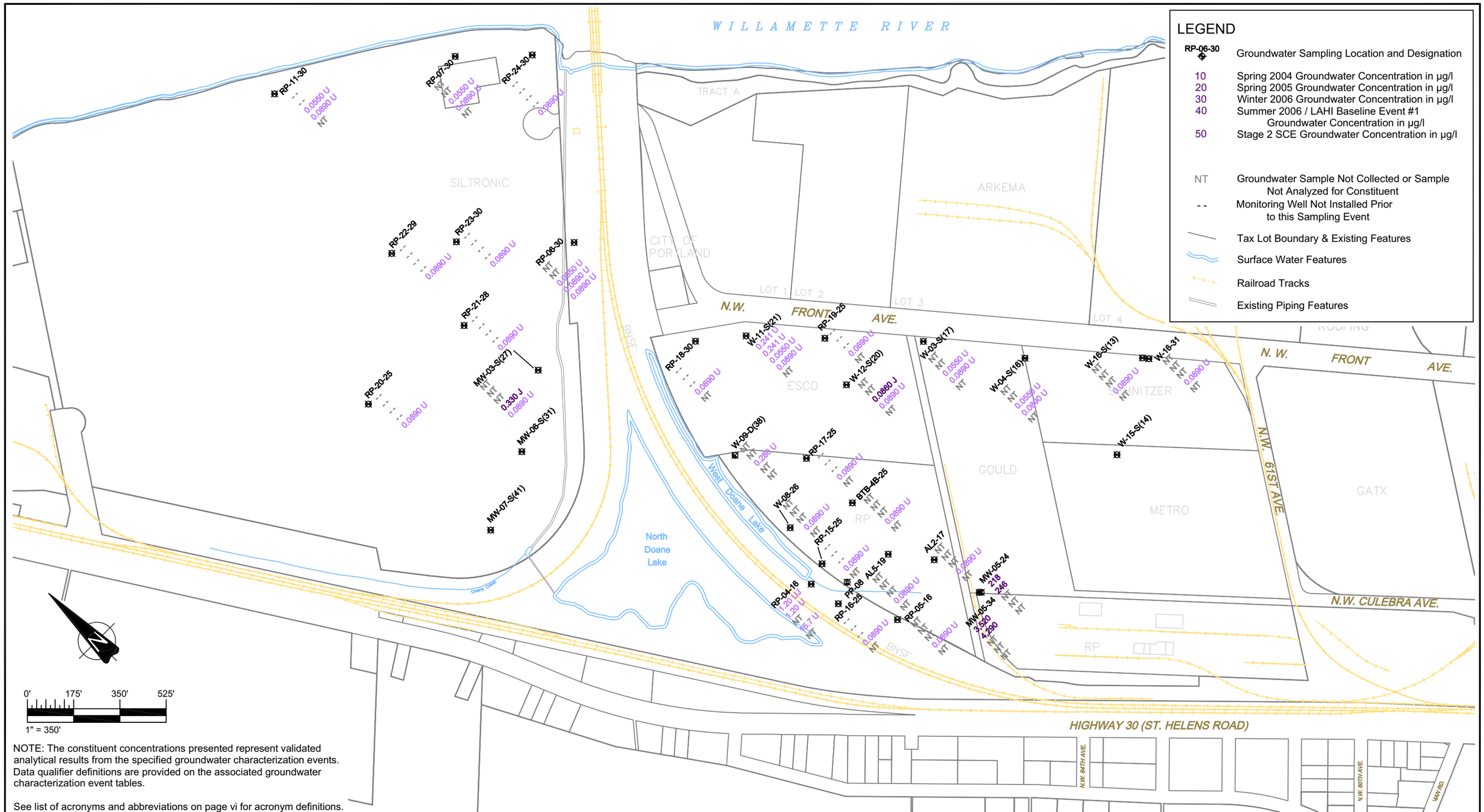
FIGURE No.	16

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 13-16 12DCB in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:04am - patrick.mccarthy



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PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TRICHLOROETHENE DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	17

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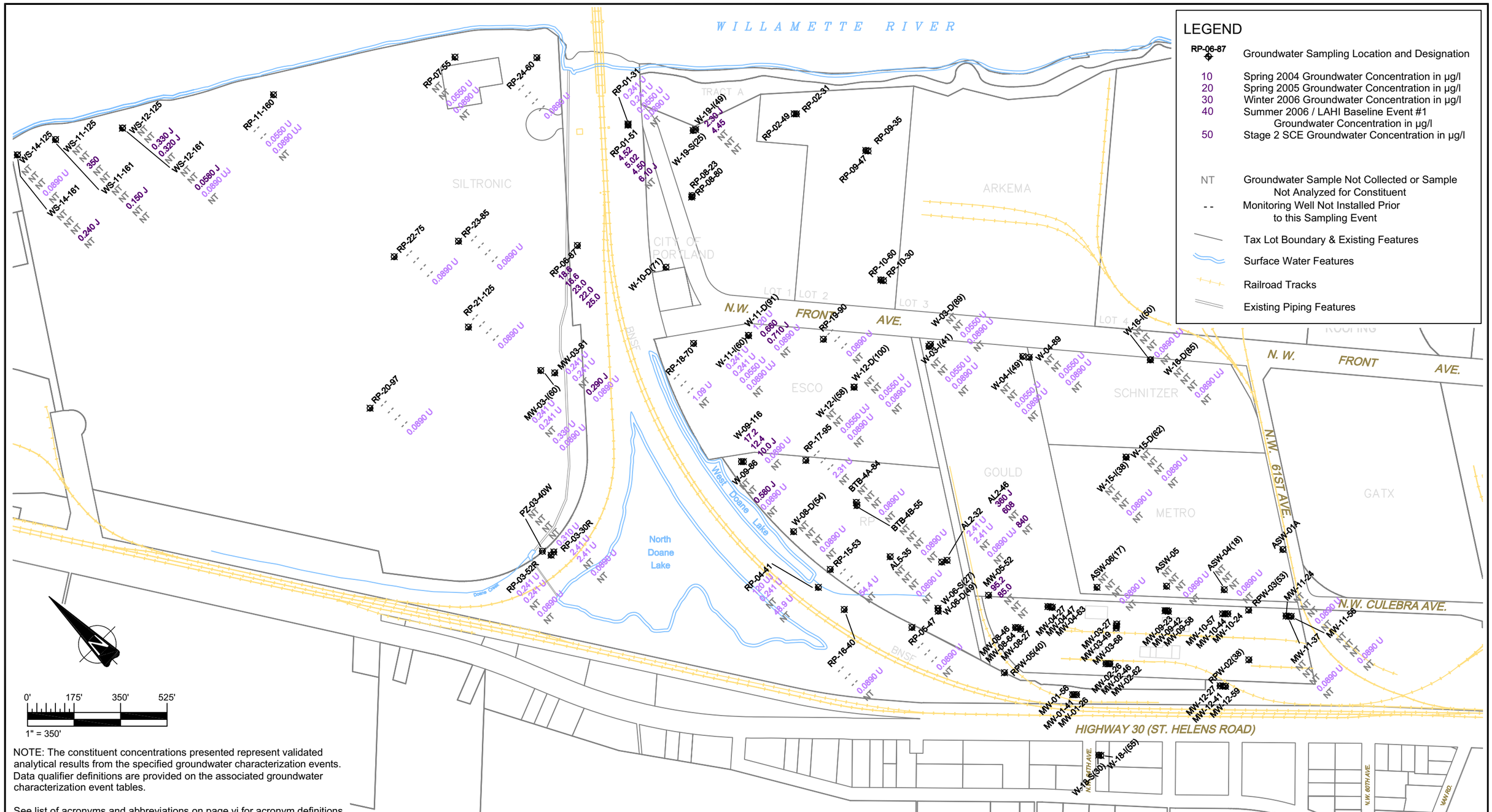

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SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TRICHLOROETHENE DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	18

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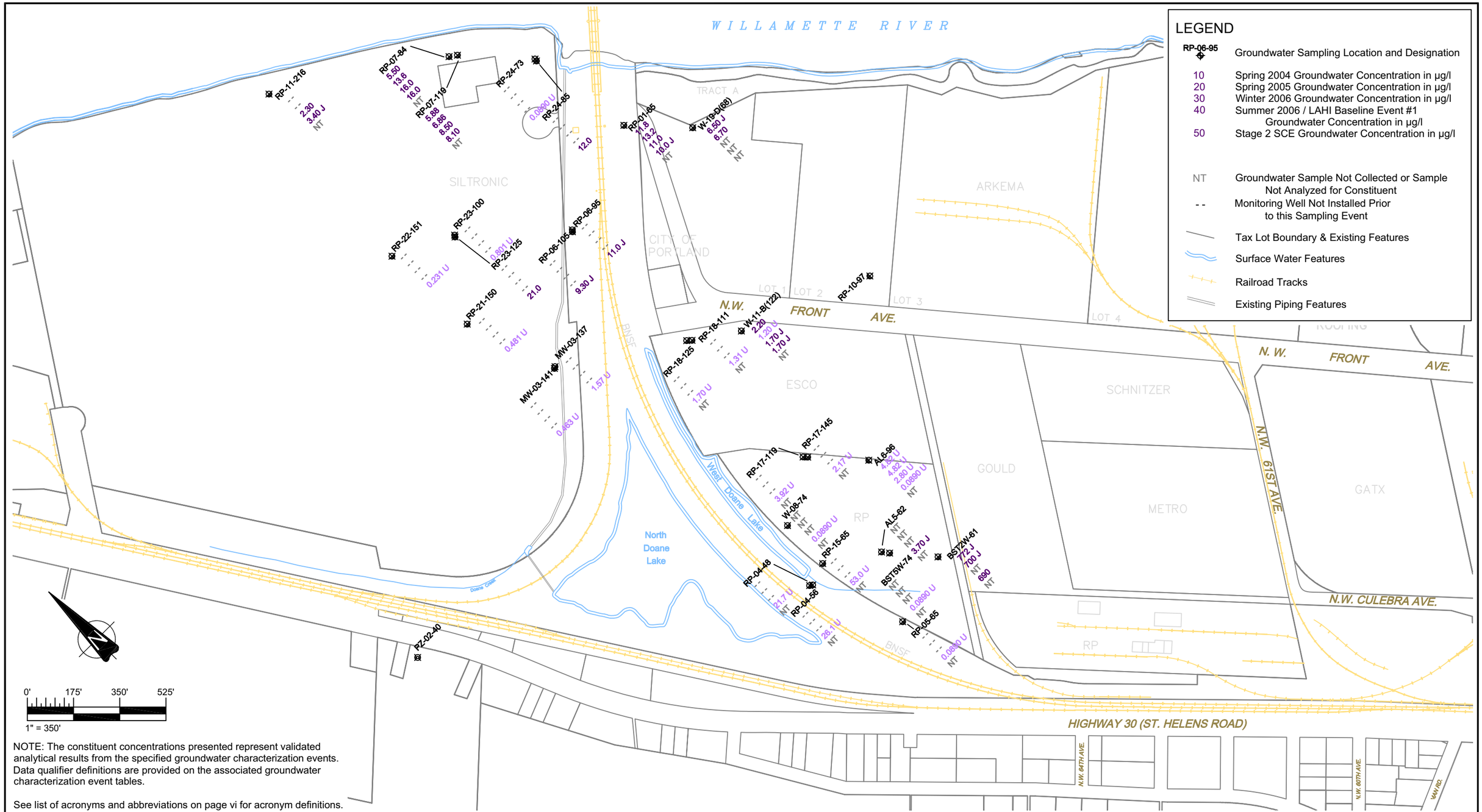

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PROJECT: RP - PORTLAND SITE

TITLE: TRICHLOROETHENE DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
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FIGURE No.	19

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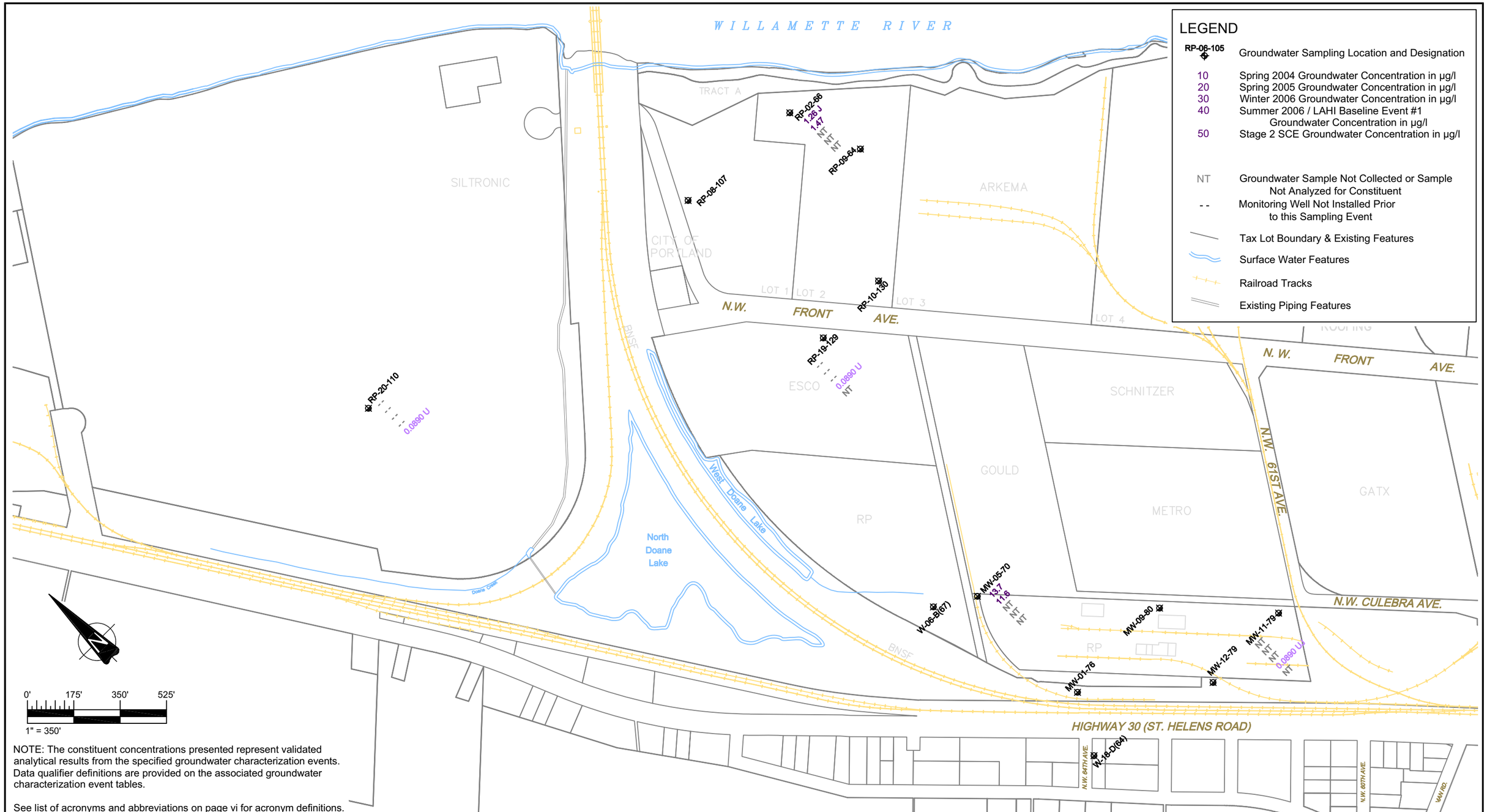

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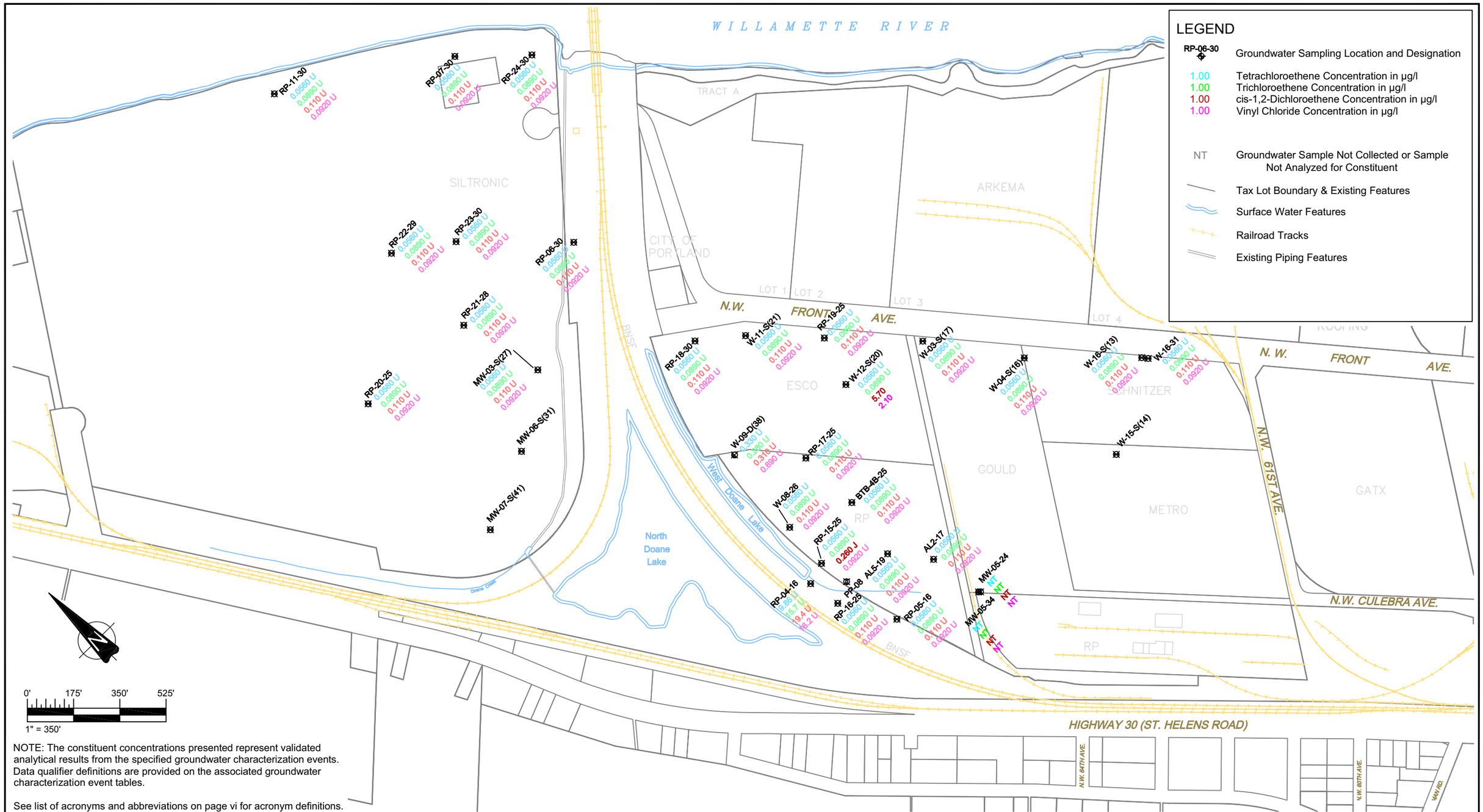
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TRICHLOROETHENE DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	20

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 17-20 TCE in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:05am - patrick.mccarthy



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SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TETRACHLOROETHENE, TRICHLOROETHENE, cis-1,2-DICHLOROETHENE, AND VINYL CHLORIDE DISTRIBUTION IN GROUNDWATER MOST RECENT 2006, FILL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	21

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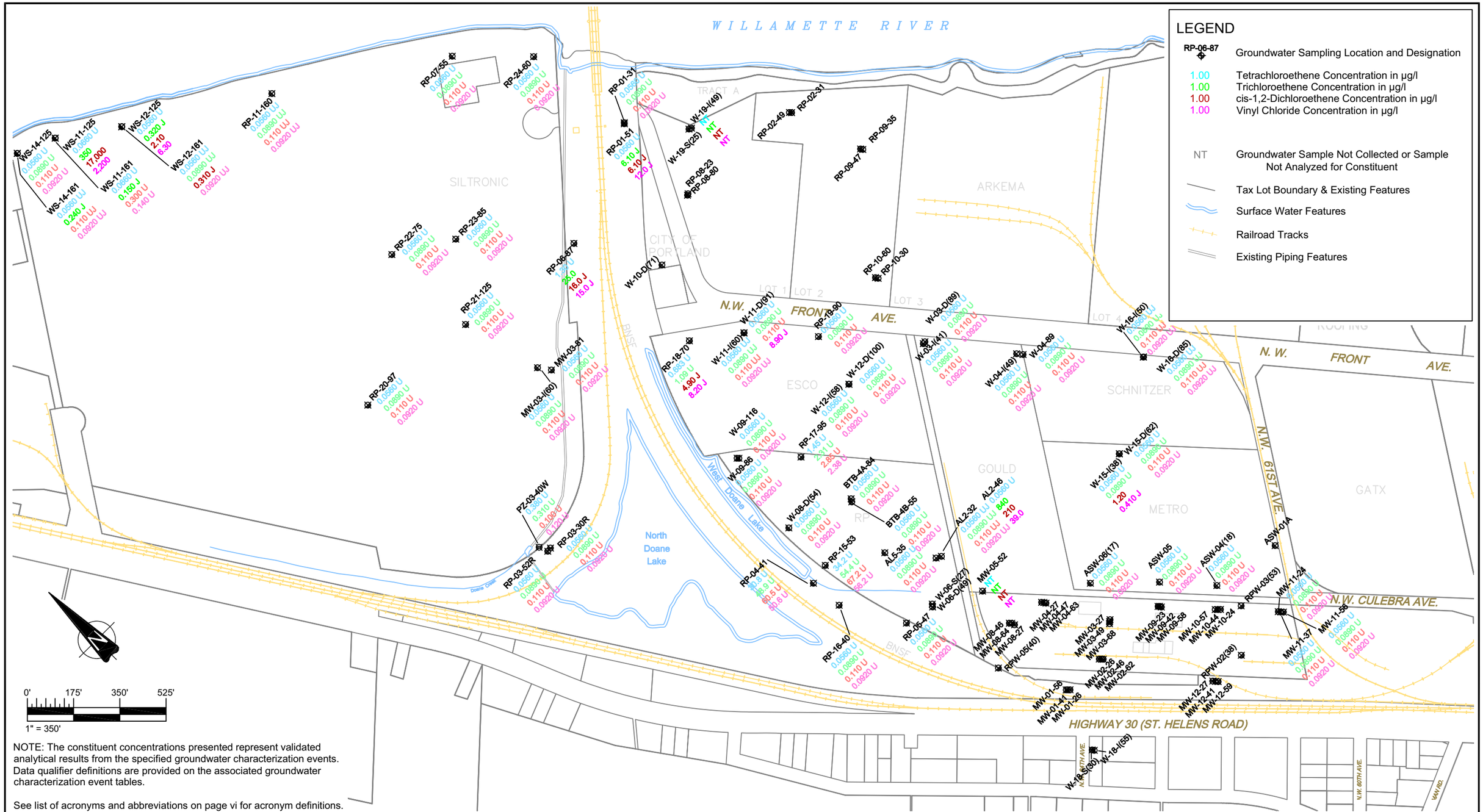

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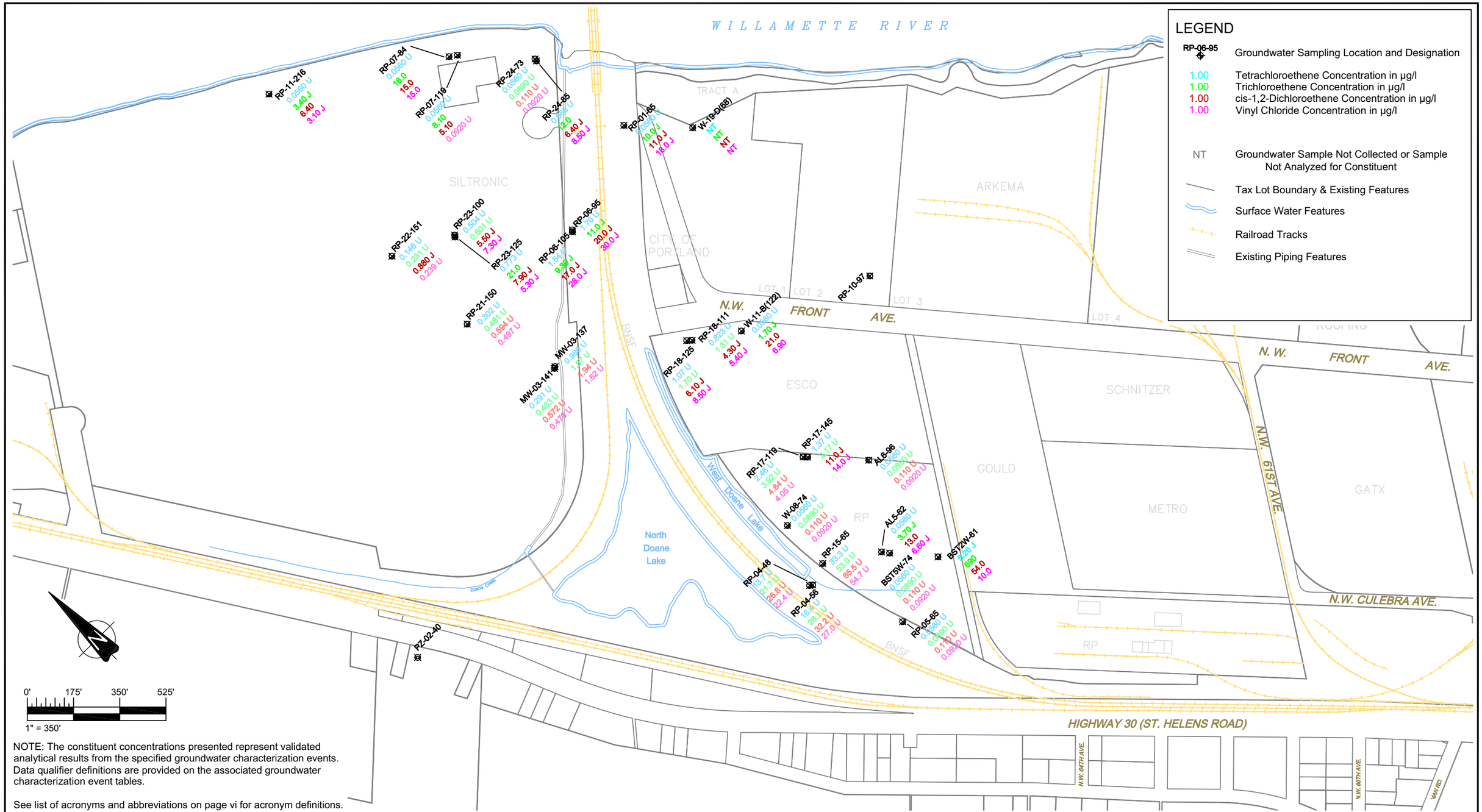
PROJECT: RP - PORTLAND SITE

TITLE: TETRACHLOROETHENE, TRICHLOROETHENE, cis-1,2-DICHLOROETHENE, AND VINYL CHLORIDE DISTRIBUTION IN GROUNDWATER MOST RECENT 2006, ALLUVIUM ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	22

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 21-24 PCE-TCE-cis12DCE-VC in GW (2004-2006).dwg - Alluvium - Jun. 21, 2007 10:05am - patrick.mccarthy



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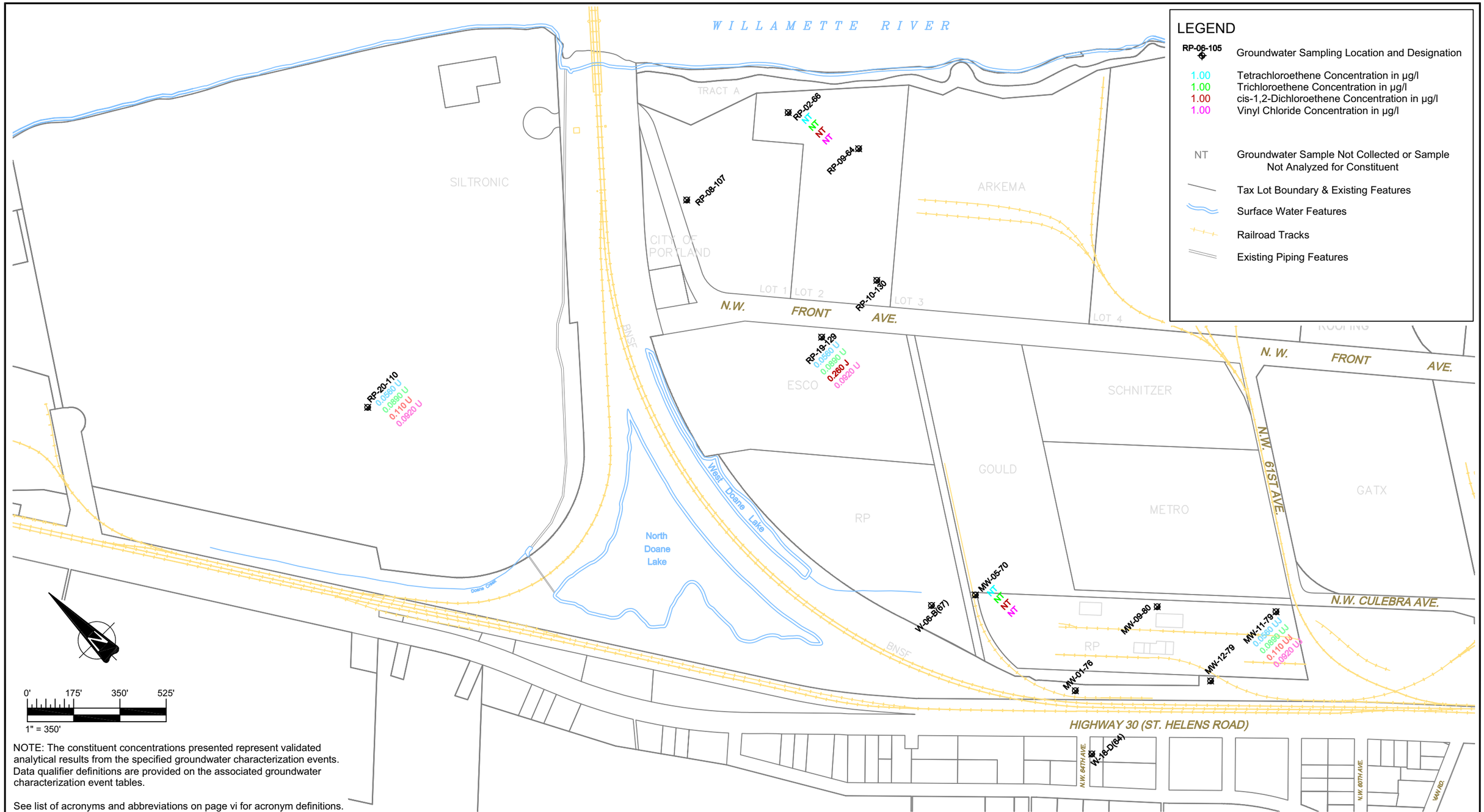
PROJECT: RP - PORTLAND SITE

TITLE: TETRACHLOROETHENE, TRICHLOROETHENE, cis-1,2-DICHLOROETHENE, AND VINYL CHLORIDE DISTRIBUTION IN GROUNDWATER MOST RECENT 2006, DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	23

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 21-24 PCE-TCE-cis12DCE-VC in GW (2004-2006).dwg - Deep Gravel - Jun. 21, 2007 10:05am - patrick.mccarthy



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TITLE: TETRACHLOROETHENE, TRICHLOROETHENE, cis-1,2-DICHLOROETHENE, AND VINYL CHLORIDE DISTRIBUTION IN GROUNDWATER MOST RECENT 2006, BASALT ZONE

DATE:	MAY 2007
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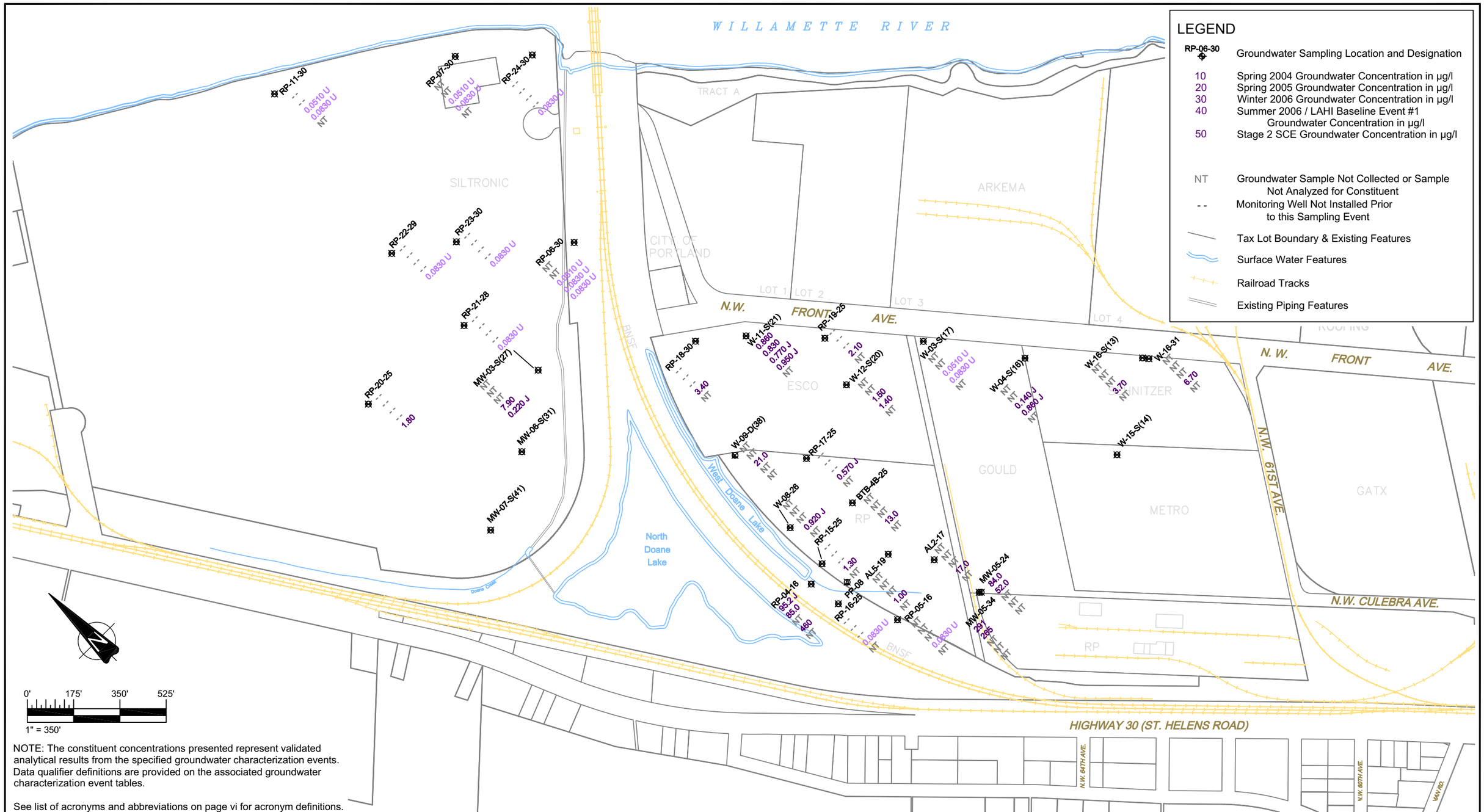
FIGURE No.	24

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 21-24 PCE-TCE-cis12DCE-VC in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:21am - patrick.mccarthy



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SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	BENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
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FIGURE No.	25

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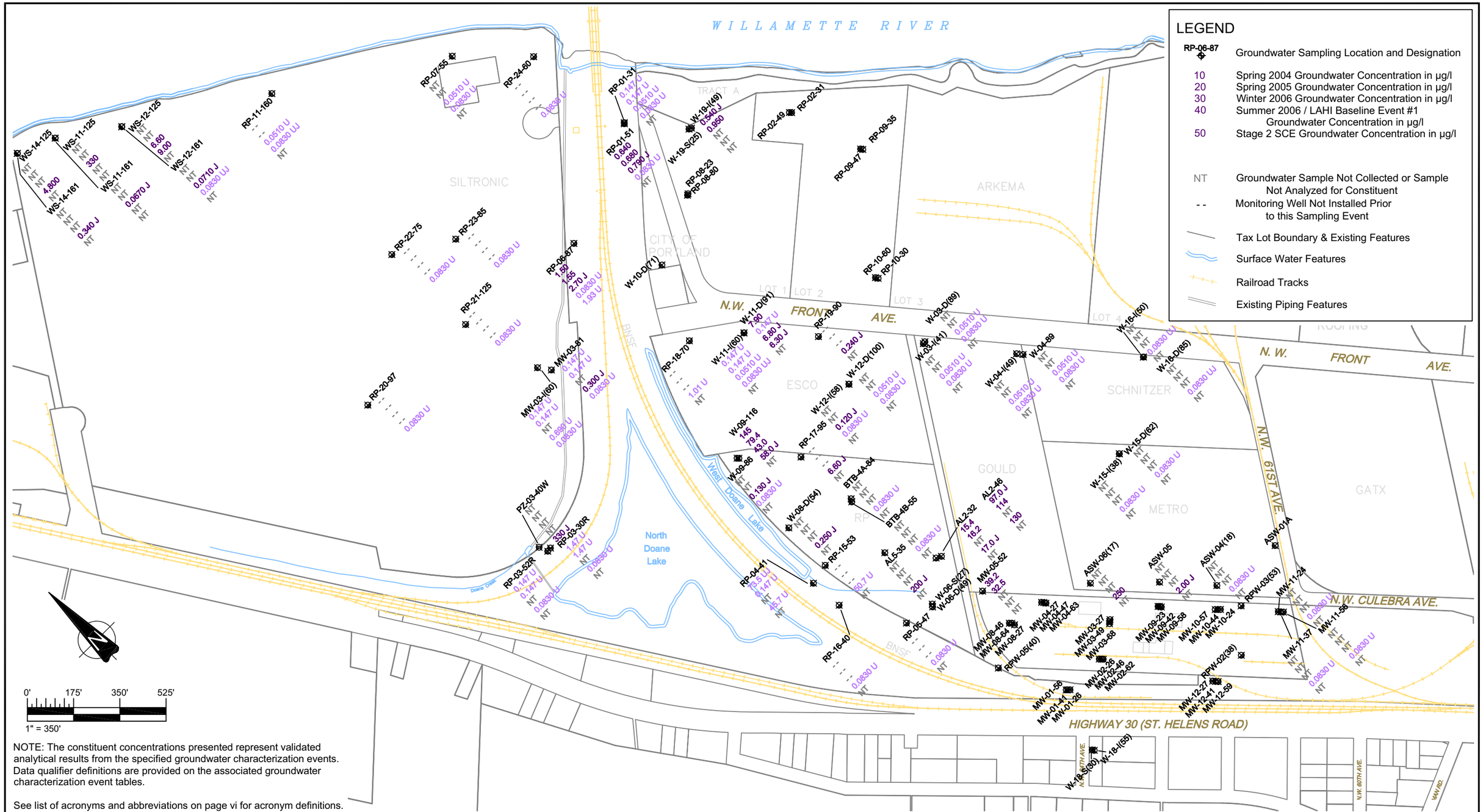

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TITLE: BENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE

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PROJECT NO:	061M107030 P69 T1
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FIGURE No.	26

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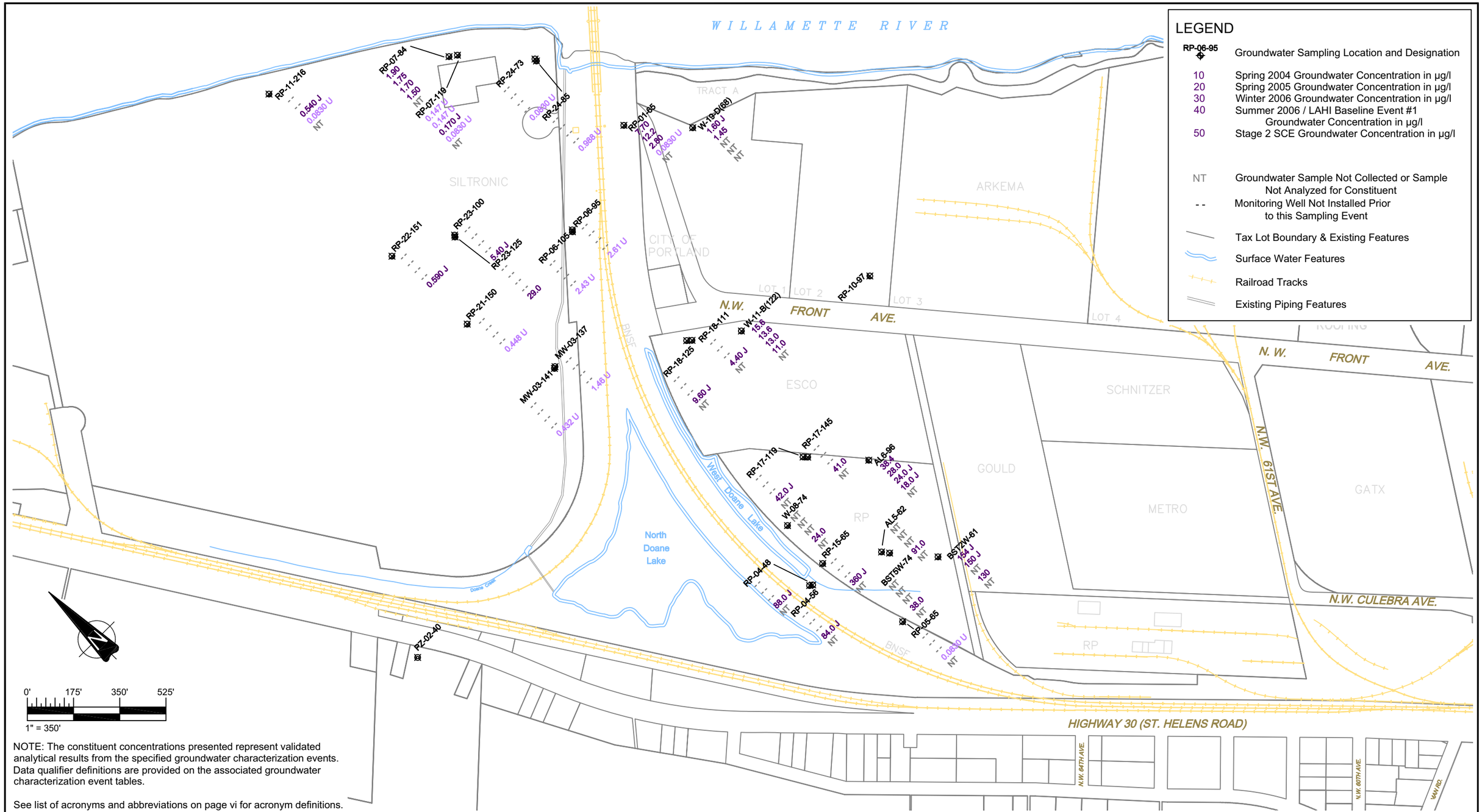

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TITLE: BENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
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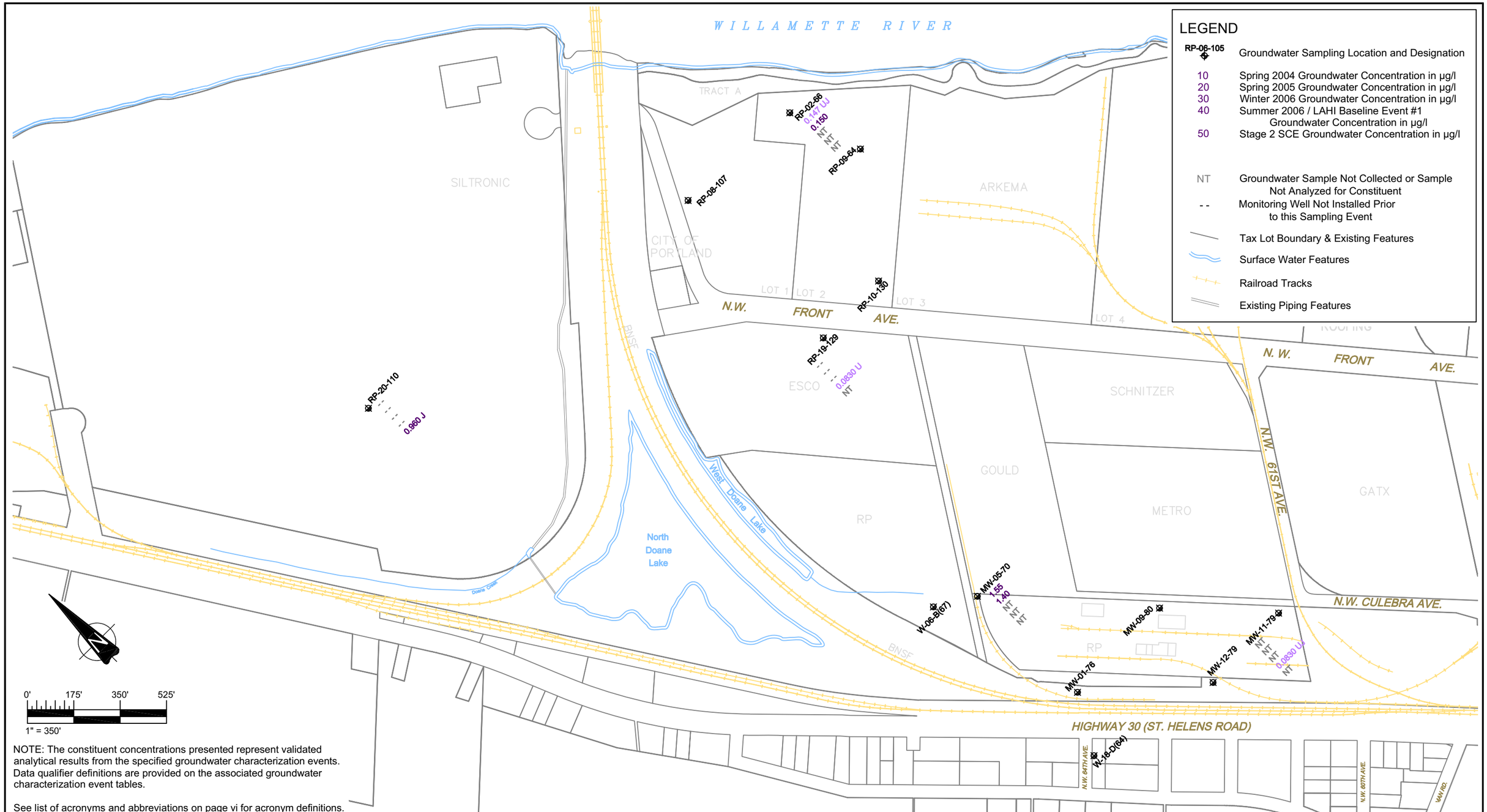
FIGURE No.	27

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 25-28 Benzene in GW (2004-2006).dwg – Deep Gravel – Jun. 21, 2007 10:22am – patrick.mccarthy



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PROJECT:	RP - PORTLAND SITE
TITLE:	BENZENE DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE
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FIGURE No.	28

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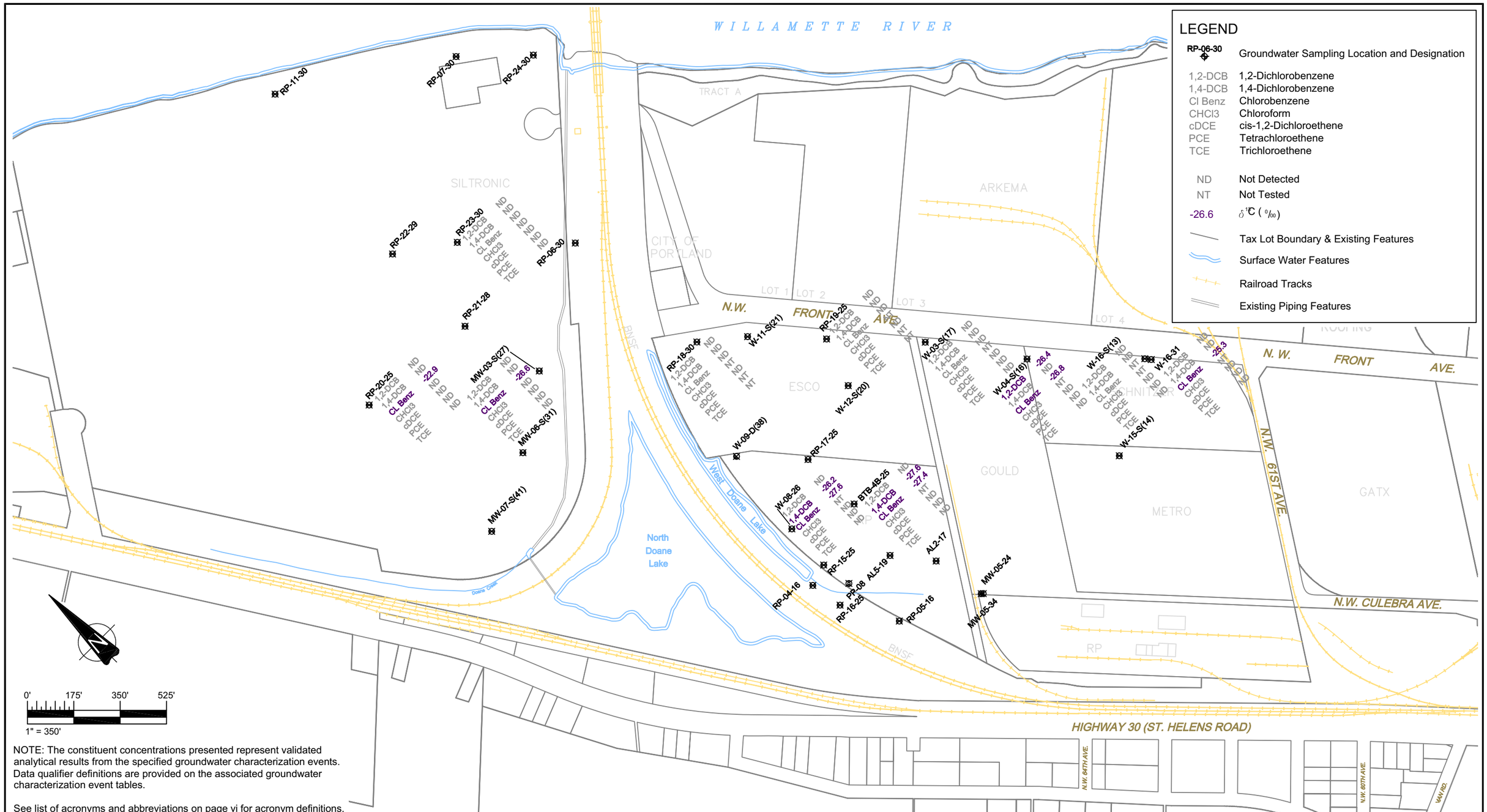

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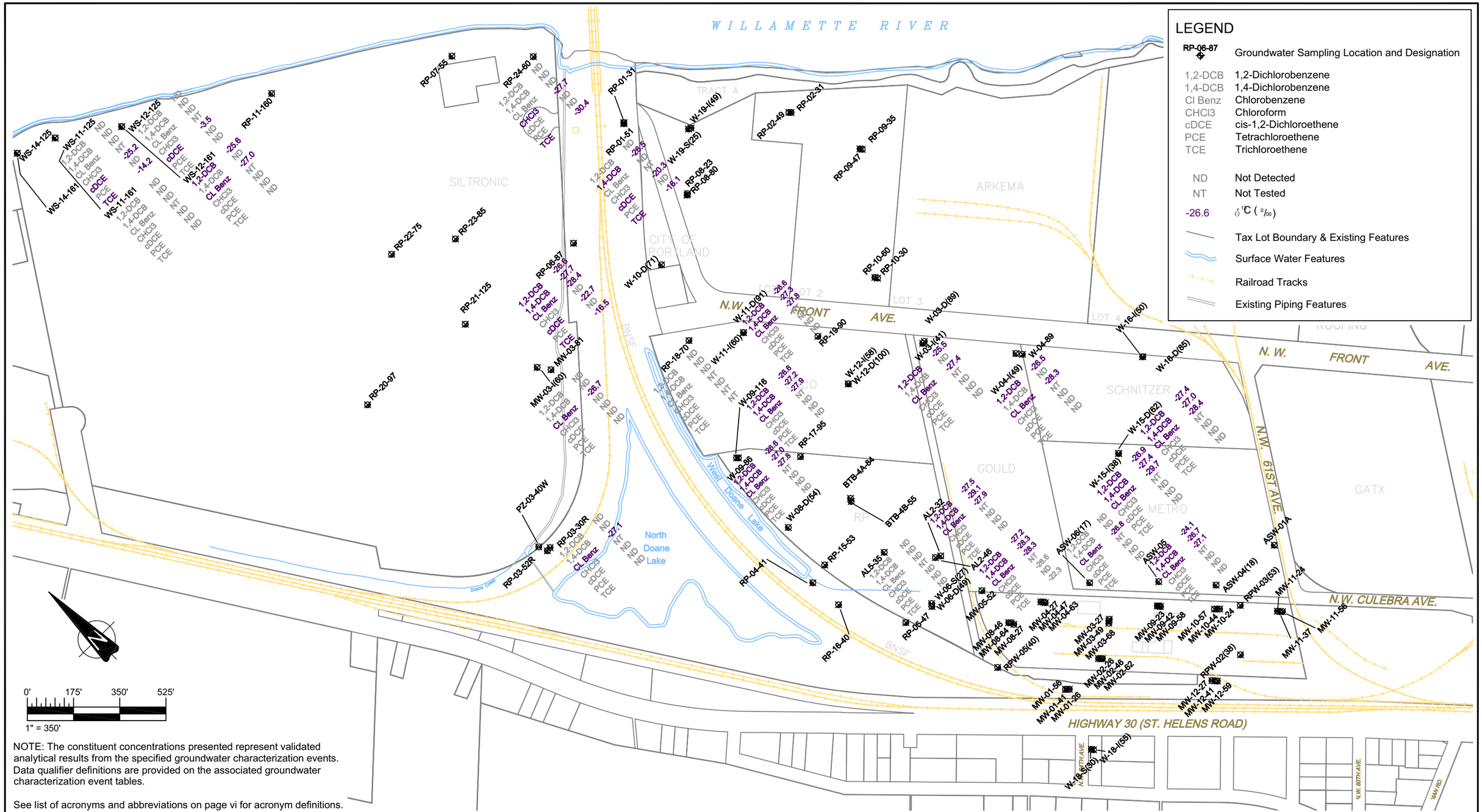
PROJECT:	RP - PORTLAND SITE
TITLE:	COMPOUND SPECIFIC ISOTOPES MOST RECENT FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	29

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 29-32 Compound Specific Isotopes.dwg – Fill – Jun. 21, 2007 10:22am – patrick.mccarthy



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SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	COMPOUND SPECIFIC ISOTOPES MOST RECENT ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	30

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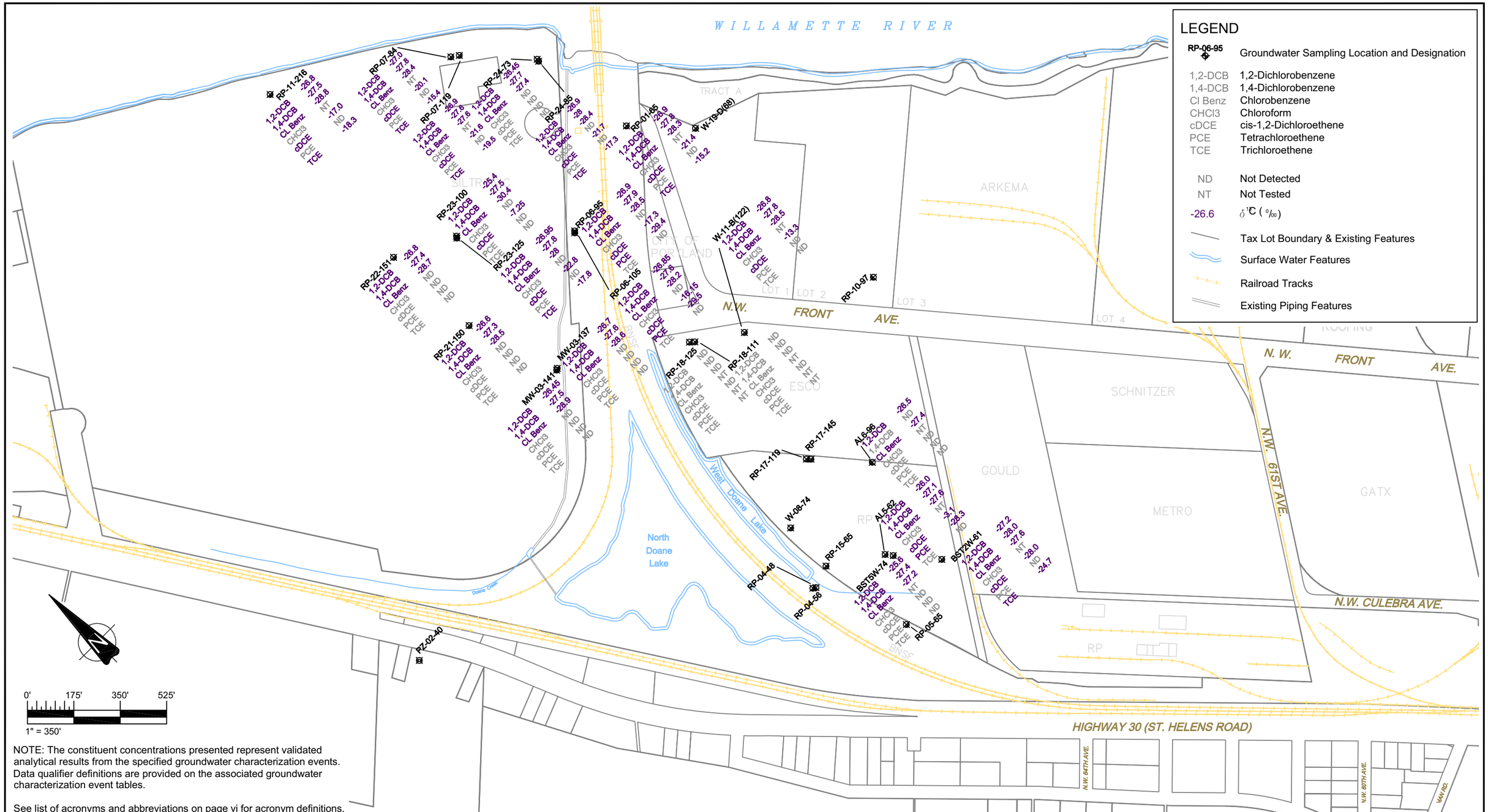

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See list of acronyms and abbreviations on page vi for acronym definitions.

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CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	COMPOUND SPECIFIC ISOTOPES MOST RECENT DEEP GRAVEL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	31

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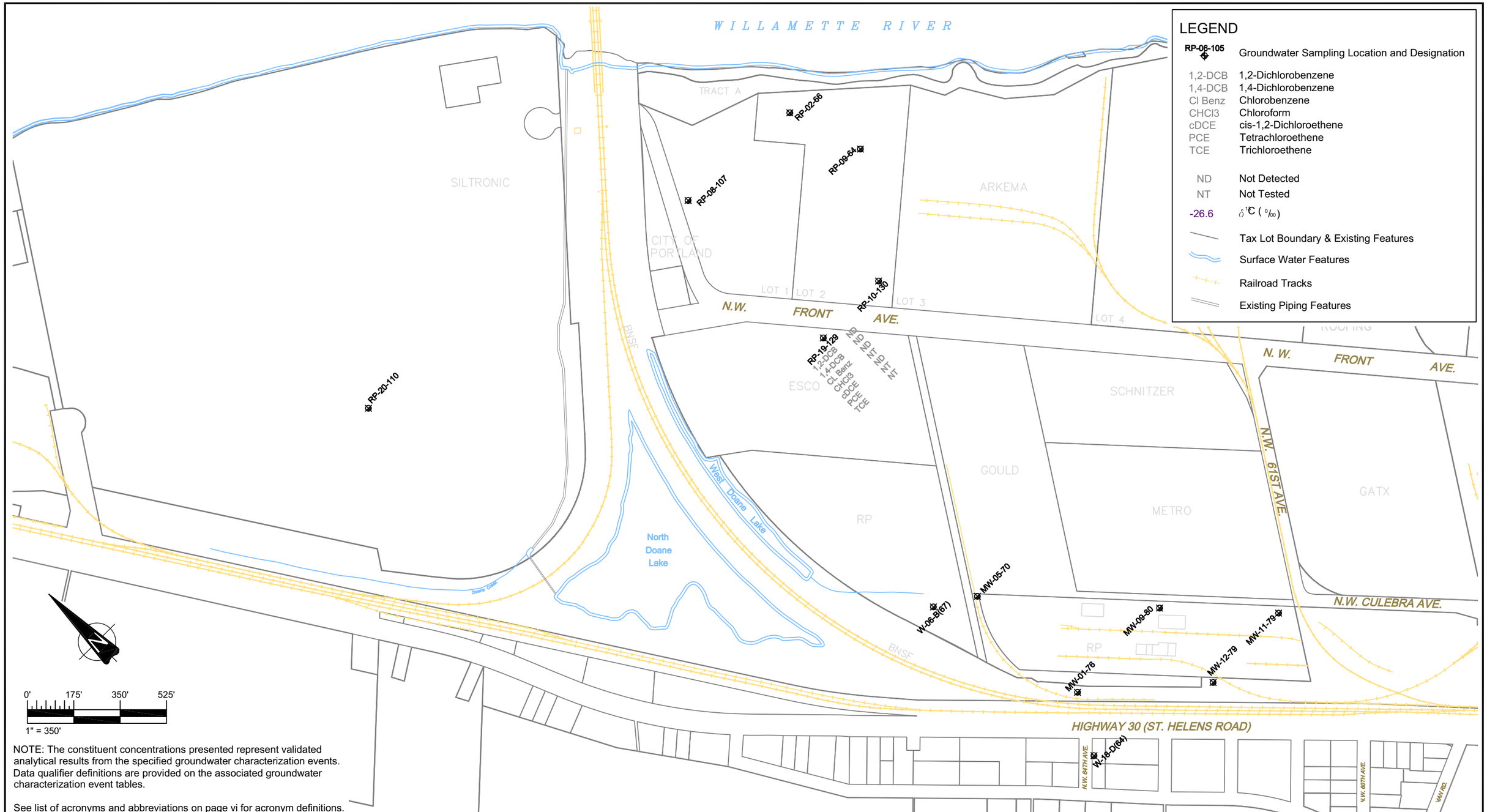
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 29-32 Compound Specific Isotopes.dwg – Deep Gravel – Jun. 21, 2007 10:23am – patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	COMPOUND SPECIFIC ISOTOPES MOST RECENT BASALT ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	32

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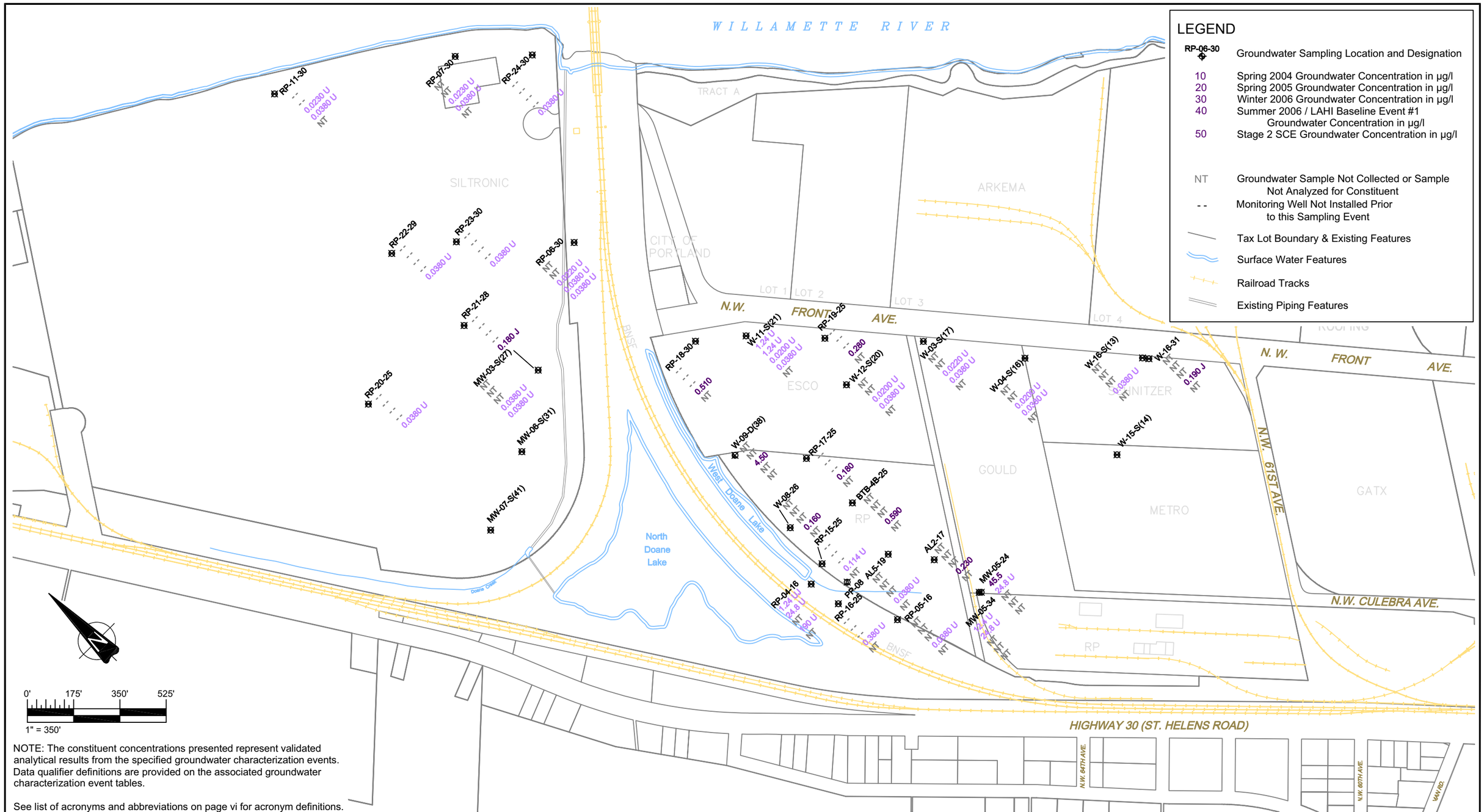
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 29-32 Compound Specific Isotopes.dwg – Basalt – Jun. 21, 2007 10:23am – patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	2,4,5-TP (SILVEX) DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	33

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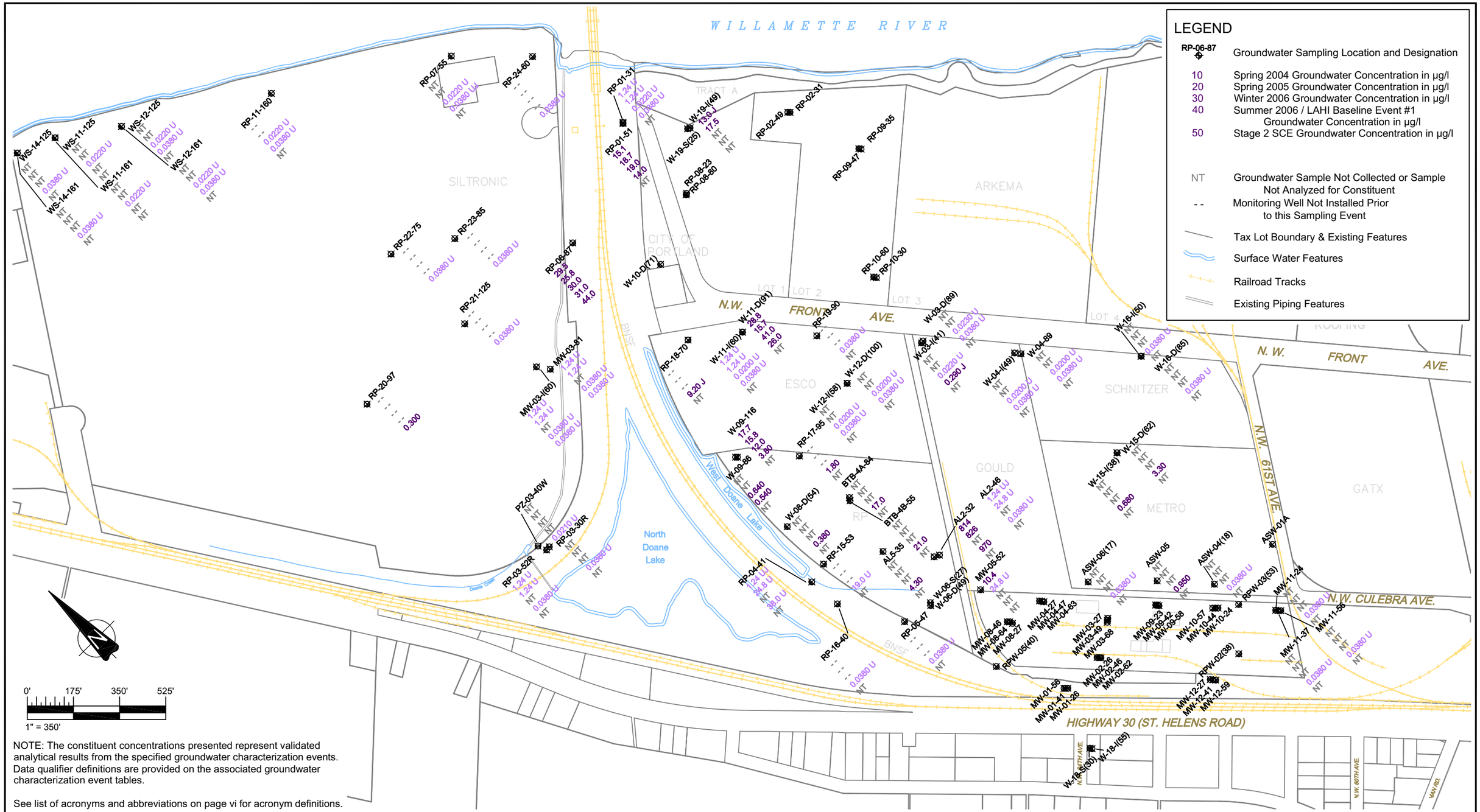
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 33-36 Silvex in GW (2004-2006).dwg - Fill - Jun. 21, 2007 10:23am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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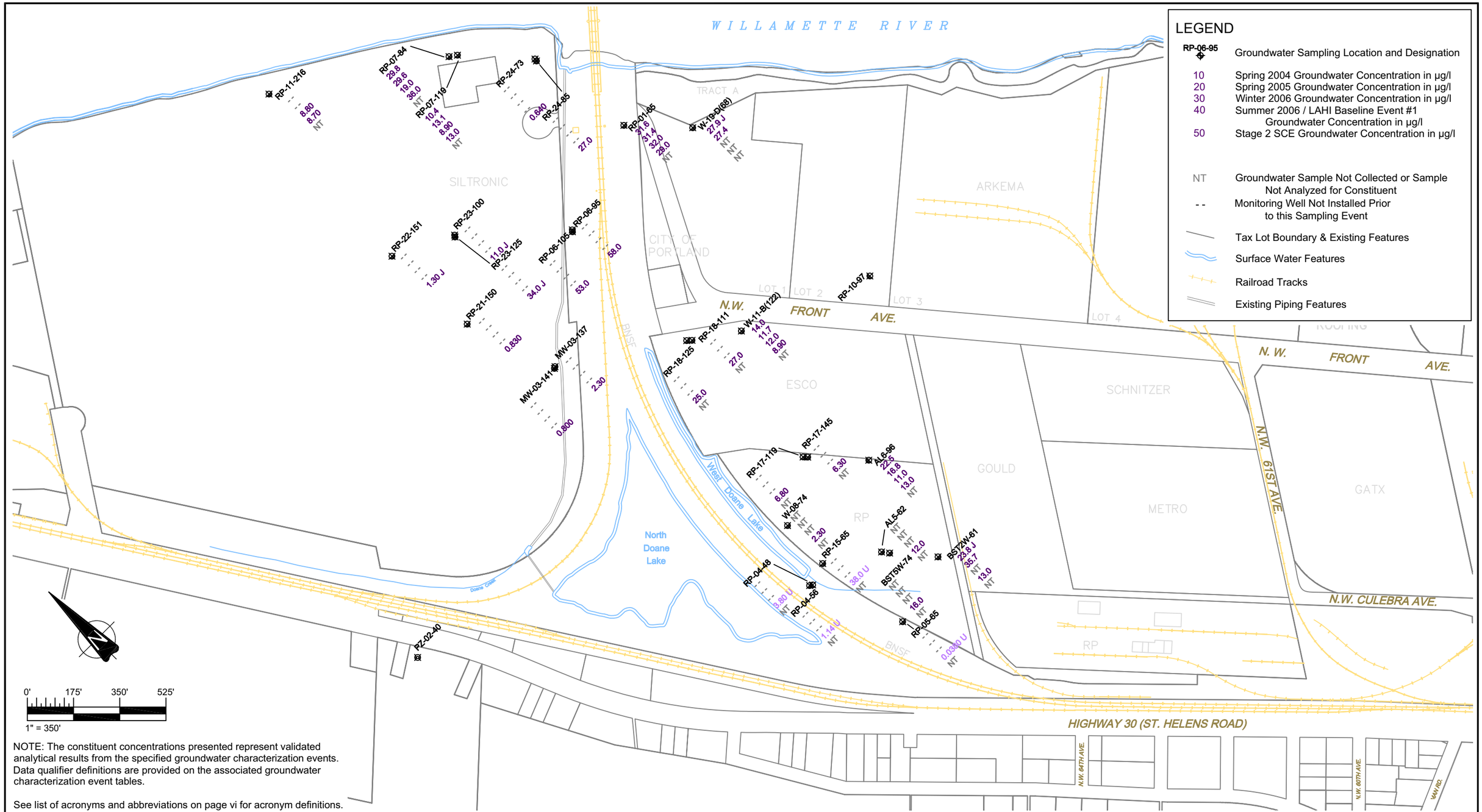
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: 2,4,5-TP (SILVEX) DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	34

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 33-36 Silvex in GW (2004-2006).dwg – Alluvium – Jun. 21, 2007 10:24am – patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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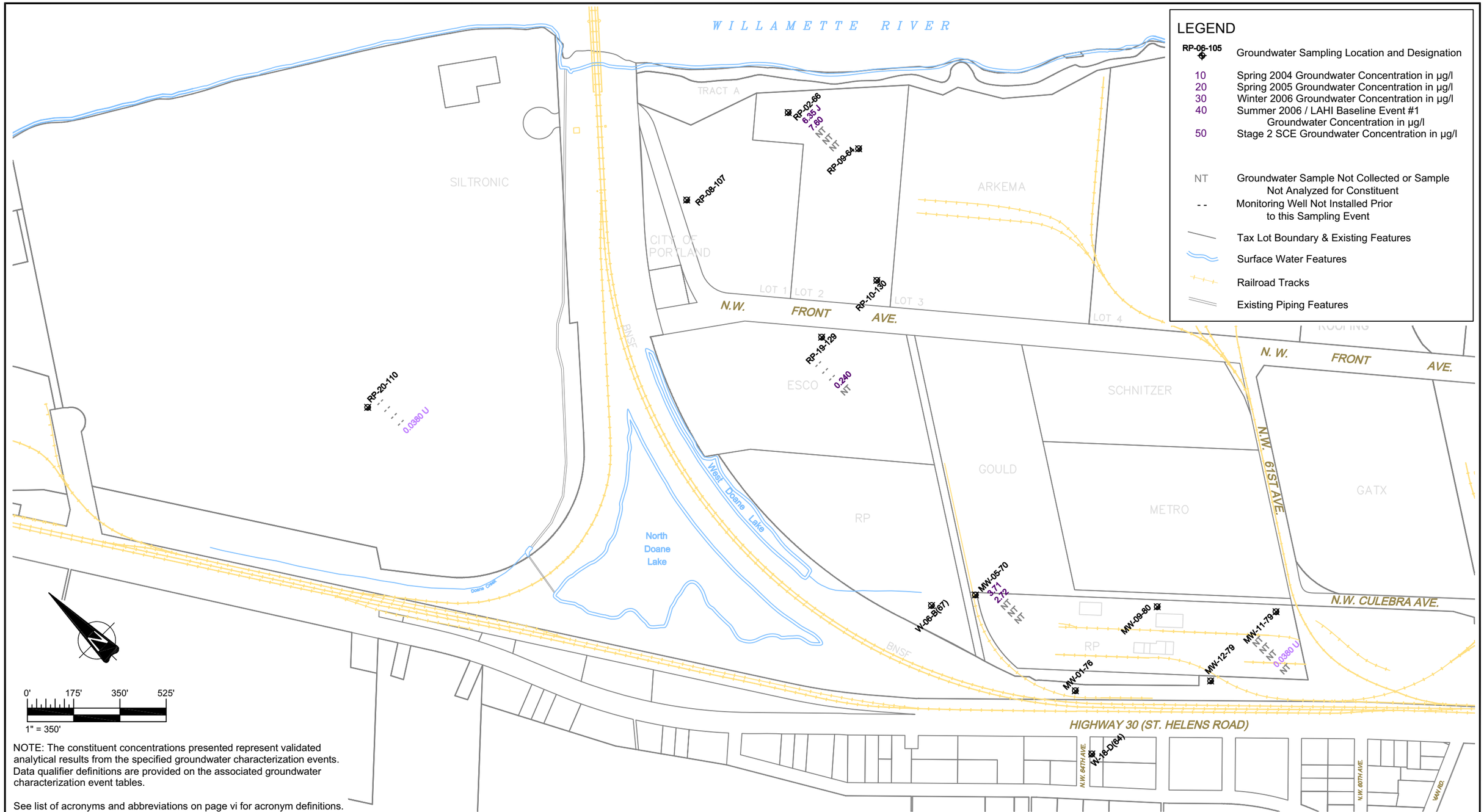
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: 2,4,5-TP (SILVEX) DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	35

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 33-36 Silvex in GW (2004-2006).dwg – Deep Gravel – Jun. 21, 2007 10:24am – patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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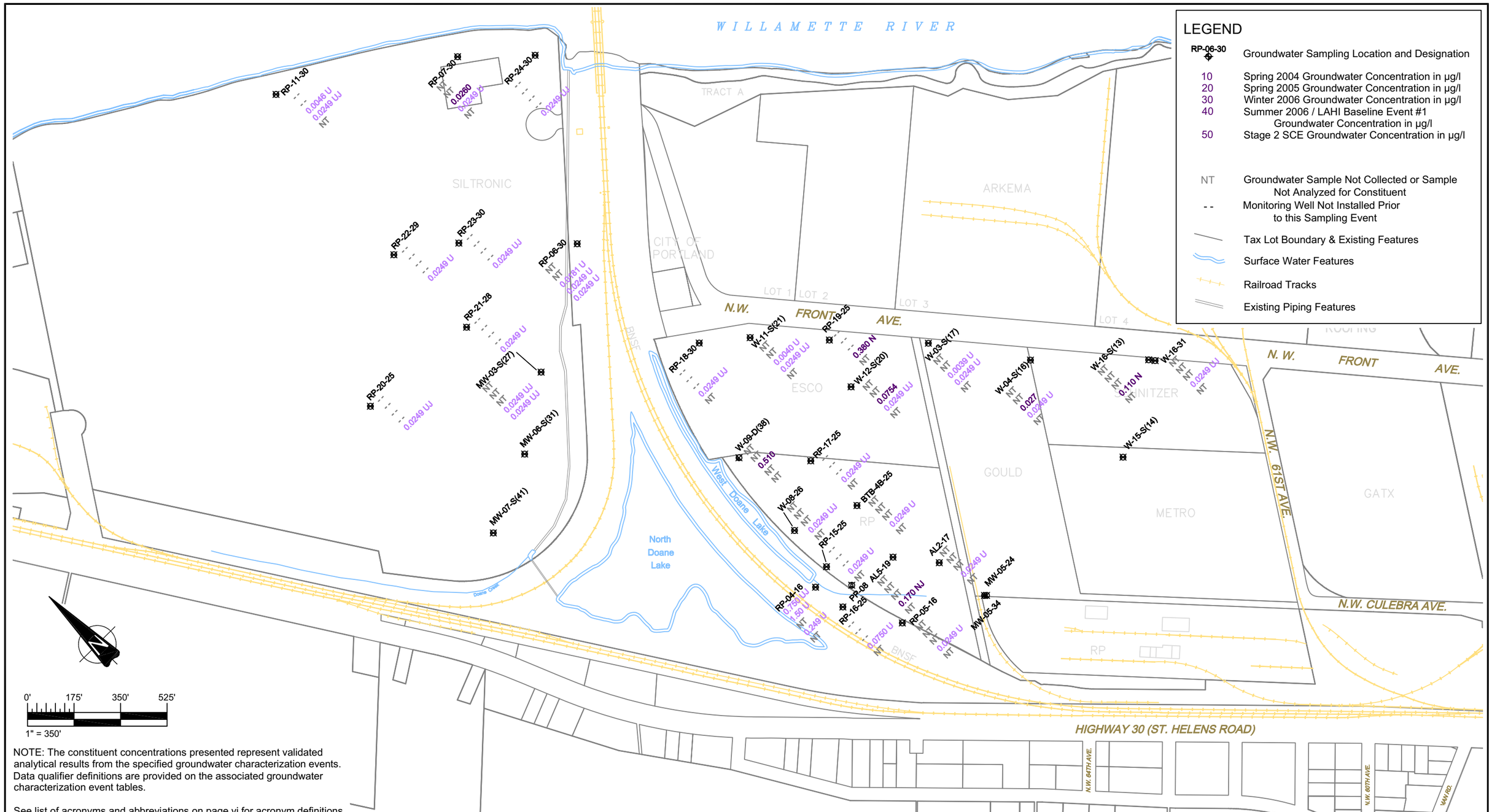
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: 2,4,5-TP (SILVEX) DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	36

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 33-36 Silvex in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:24am - patrick.mccarthy



0' 175' 350' 525'

1" = 350'

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See list of acronyms and abbreviations on page vi for acronym definitions.

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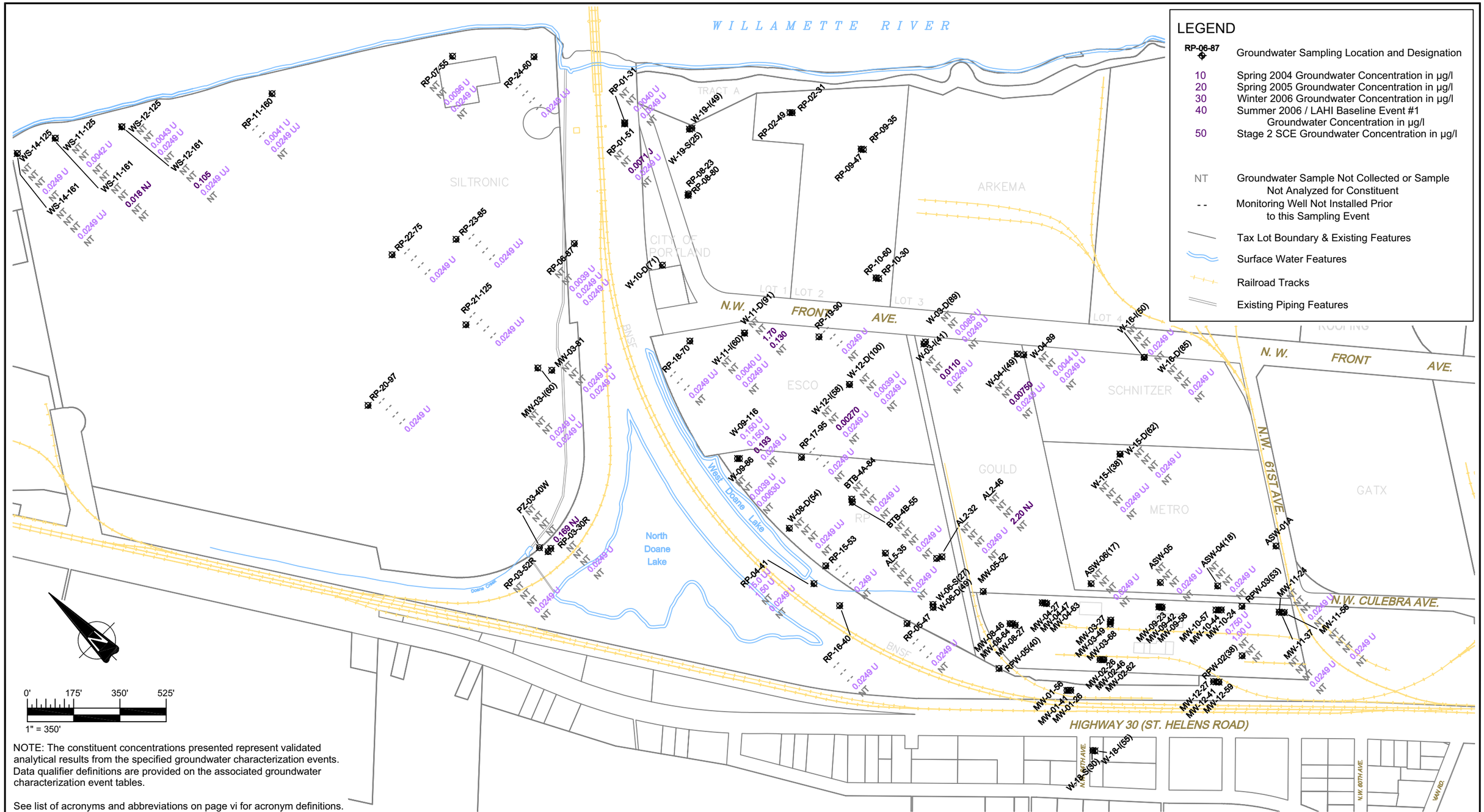
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL 4,4'-DDD, 4,4'-DDE, & 4,4'-DDT DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	37

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 37-40 Total DDD-DDE-DDT in GW (2004-2006).dwg - Fill - Jun. 21, 2007 10:24am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TOTAL 4,4'-DDD, 4,4'-DDE, & 4,4'-DDT DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	38

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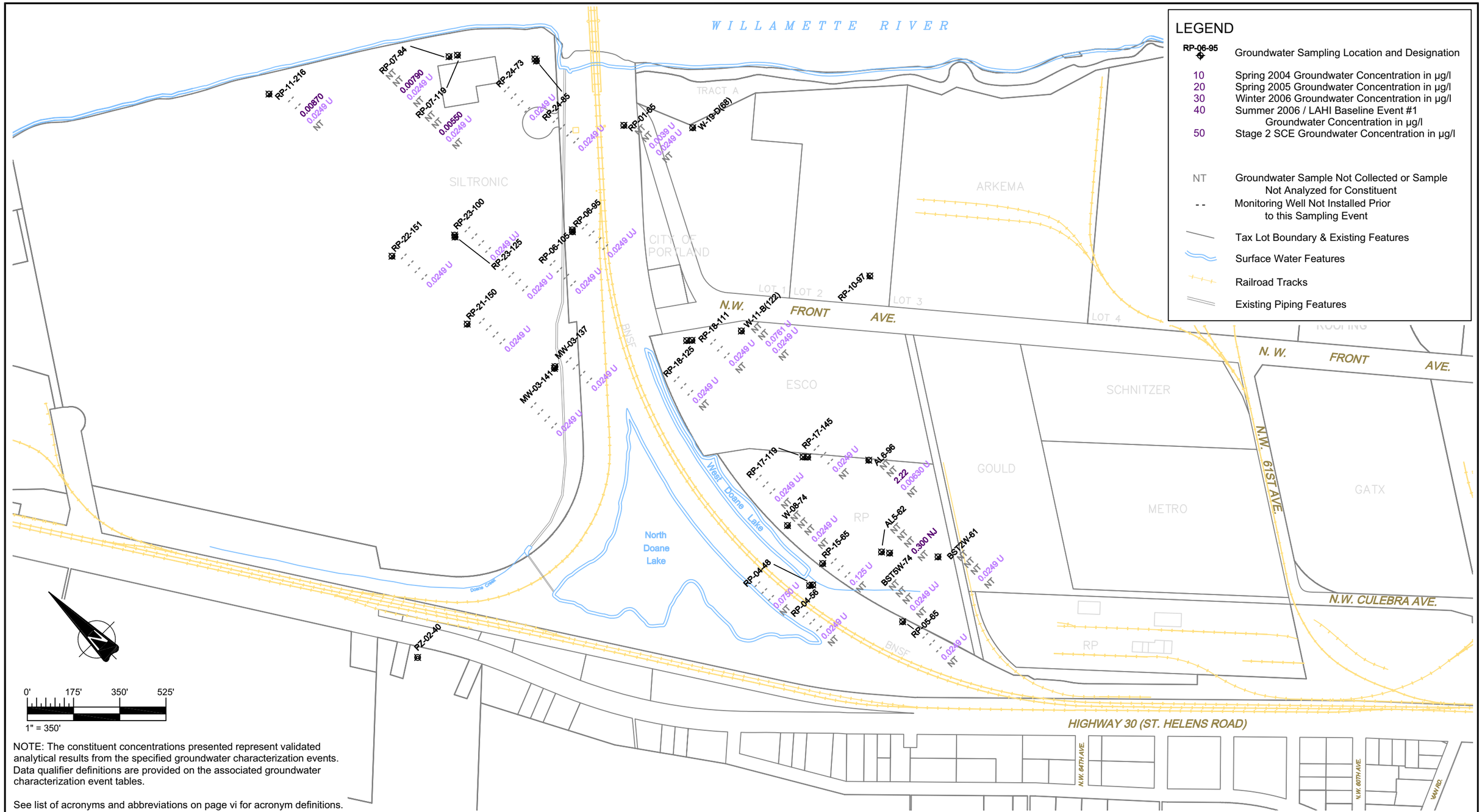
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 37-40 Total DDD-DDE-DDT in GW (2004-2006).dwg – Alluvium – Jun. 21, 2007 10:24am – patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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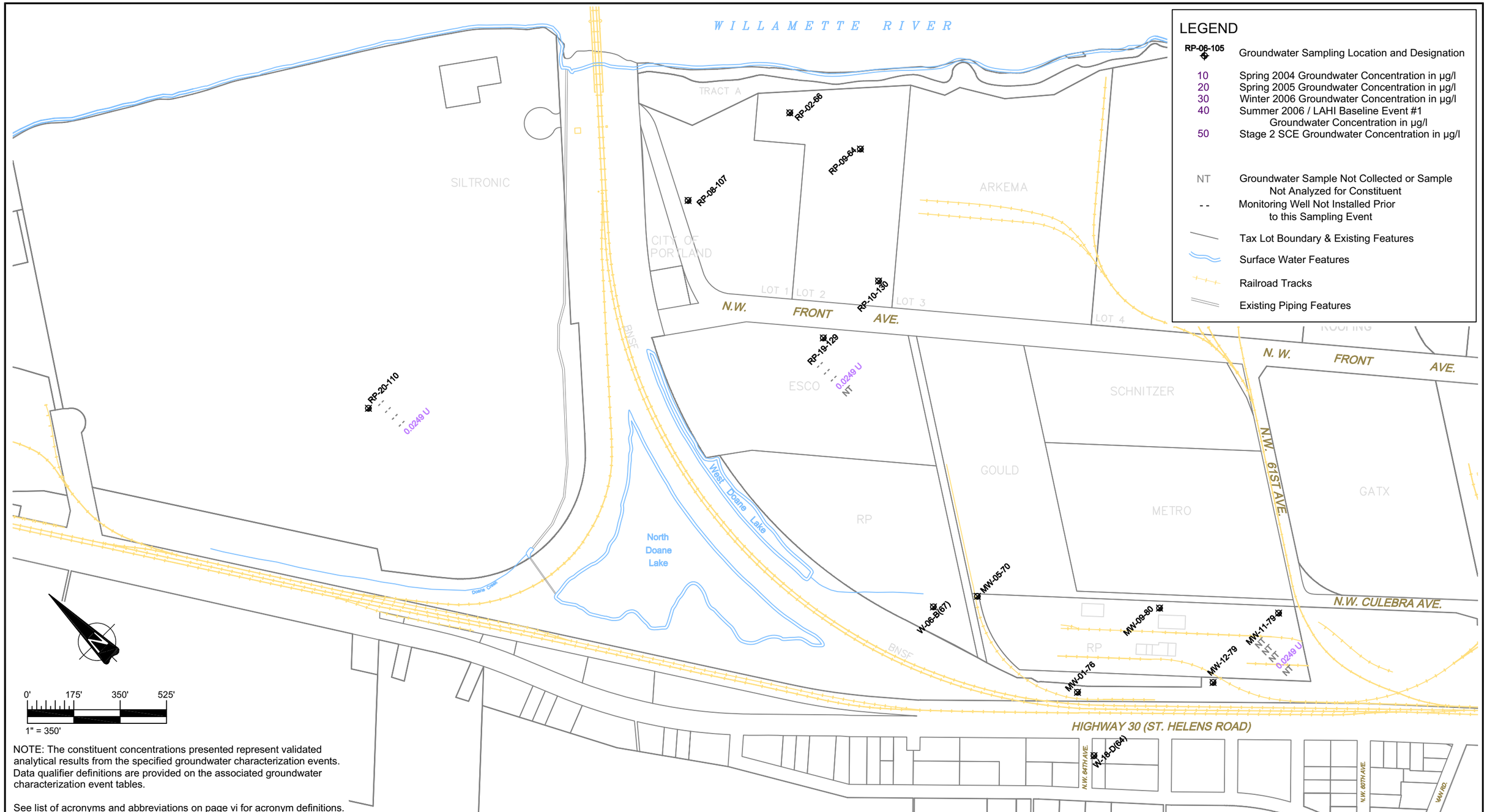
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL 4,4'-DDD, 4,4'-DDE, & 4,4'-DDT DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	39

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 37-40 Total DDD-DDE-DDT in GW (2004-2006).dwg - Deep Gravel - Jun. 21, 2007 10:25am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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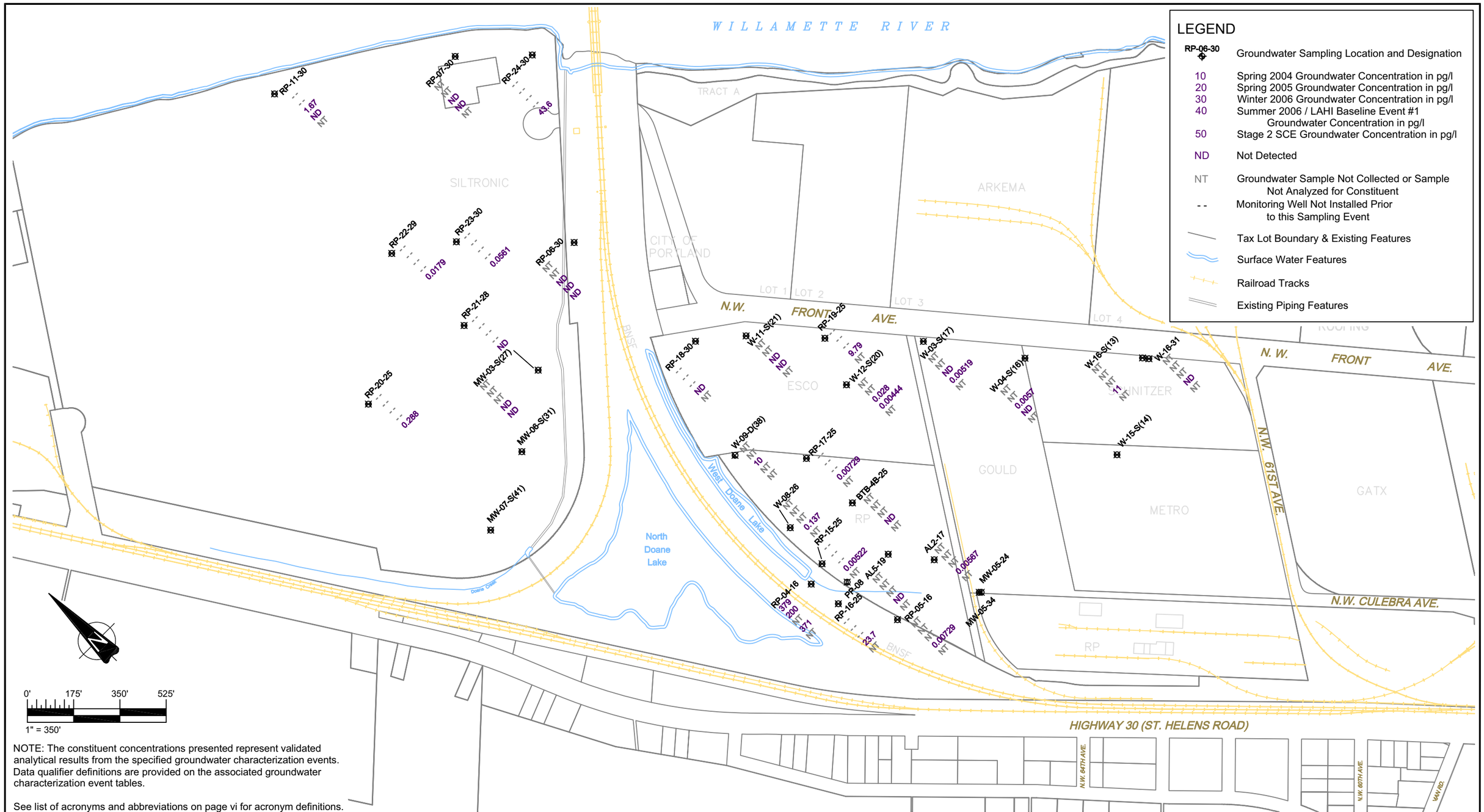
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL 4,4'-DDD, 4,4'-DDE, & 4,4'-DDT DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	40

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 37-40 Total DDD-DDE-DDT in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:25am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TOTAL TEQ DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	41

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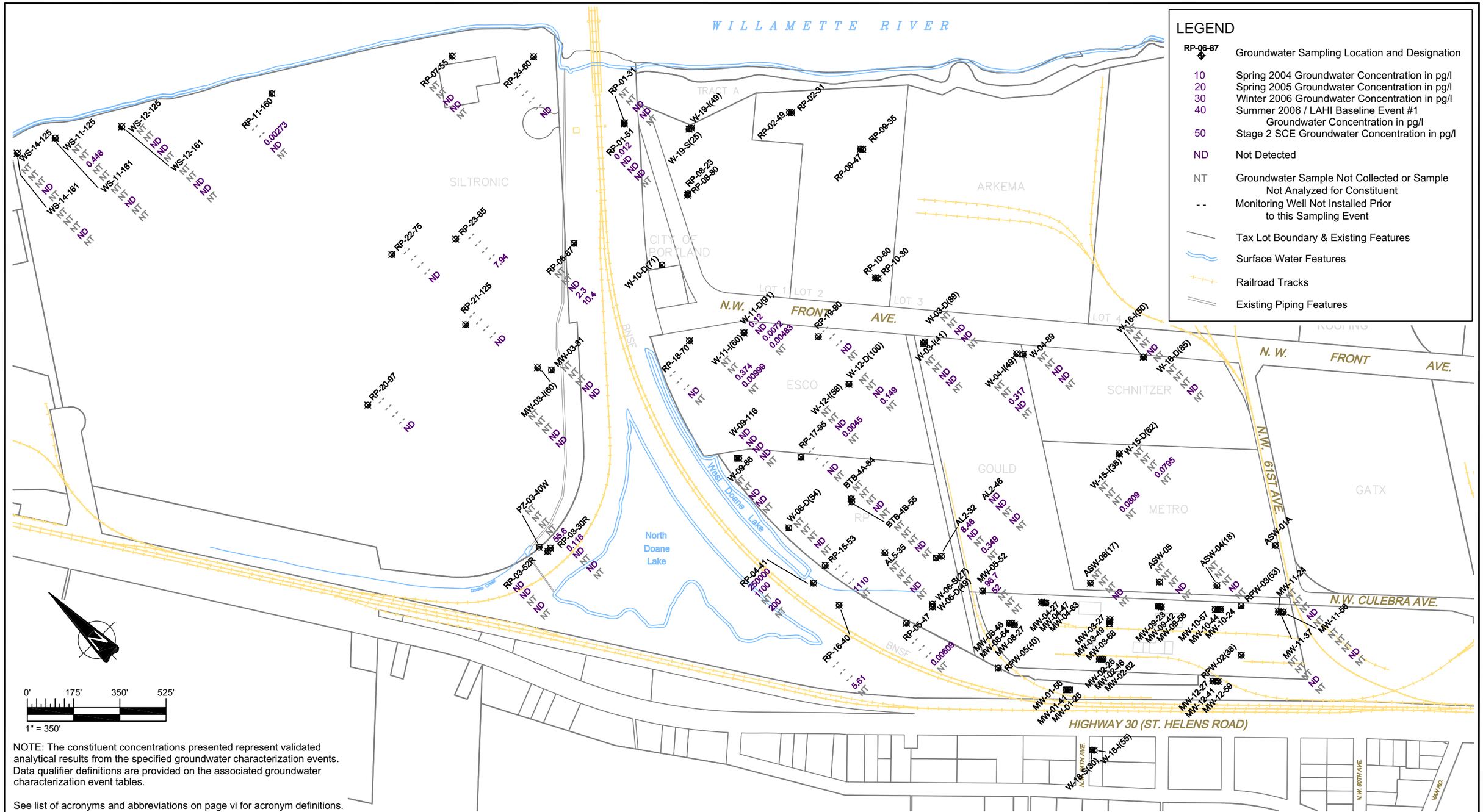
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 41-44 Total TEQ in GW (2004-2006).dwg - Fill - Jun. 21, 2007 10:25am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TOTAL TEQ DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	42

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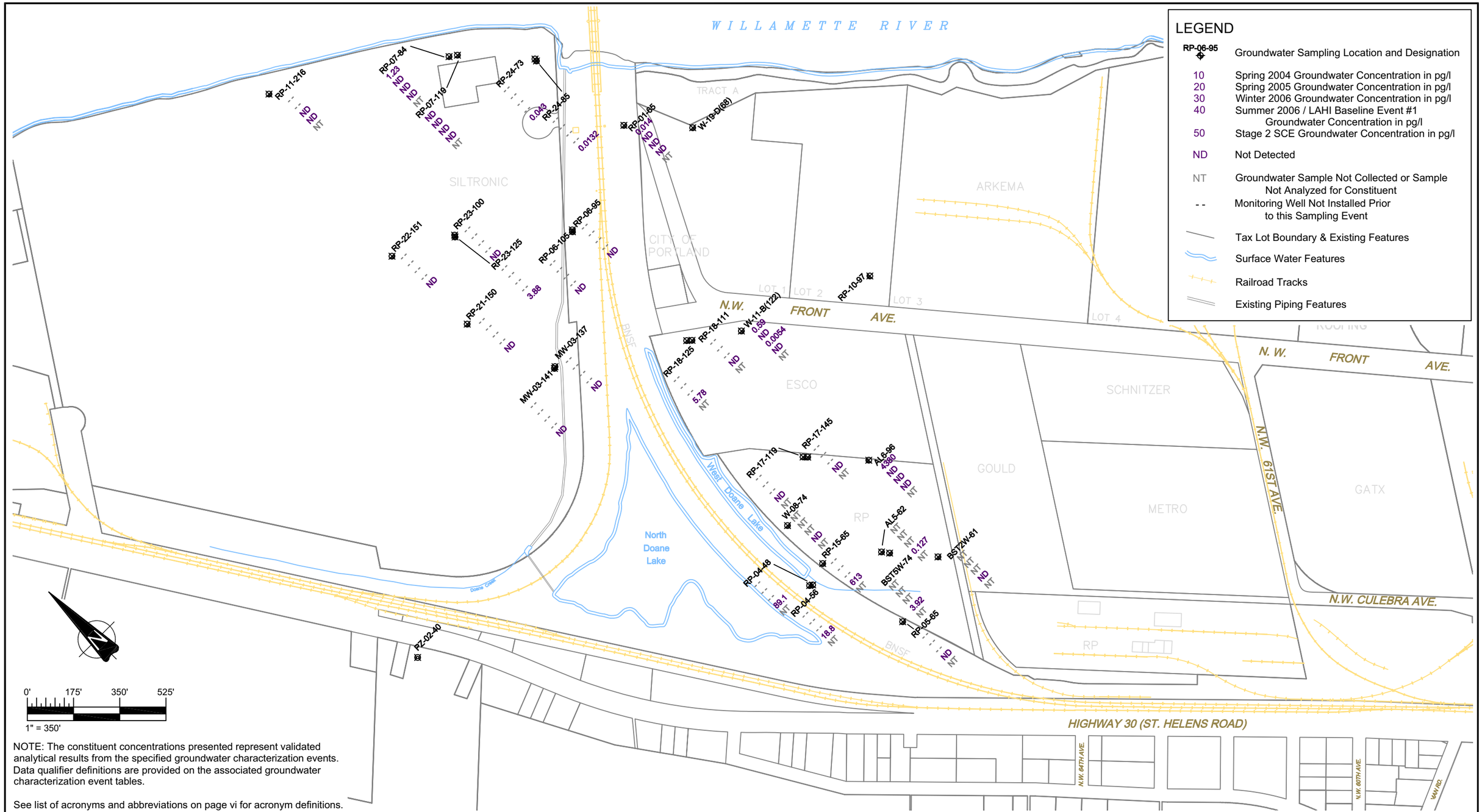
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 41-44 Total TEQ in GW (2004-2006).dwg - Alluvium - Jun. 21, 2007 10:25am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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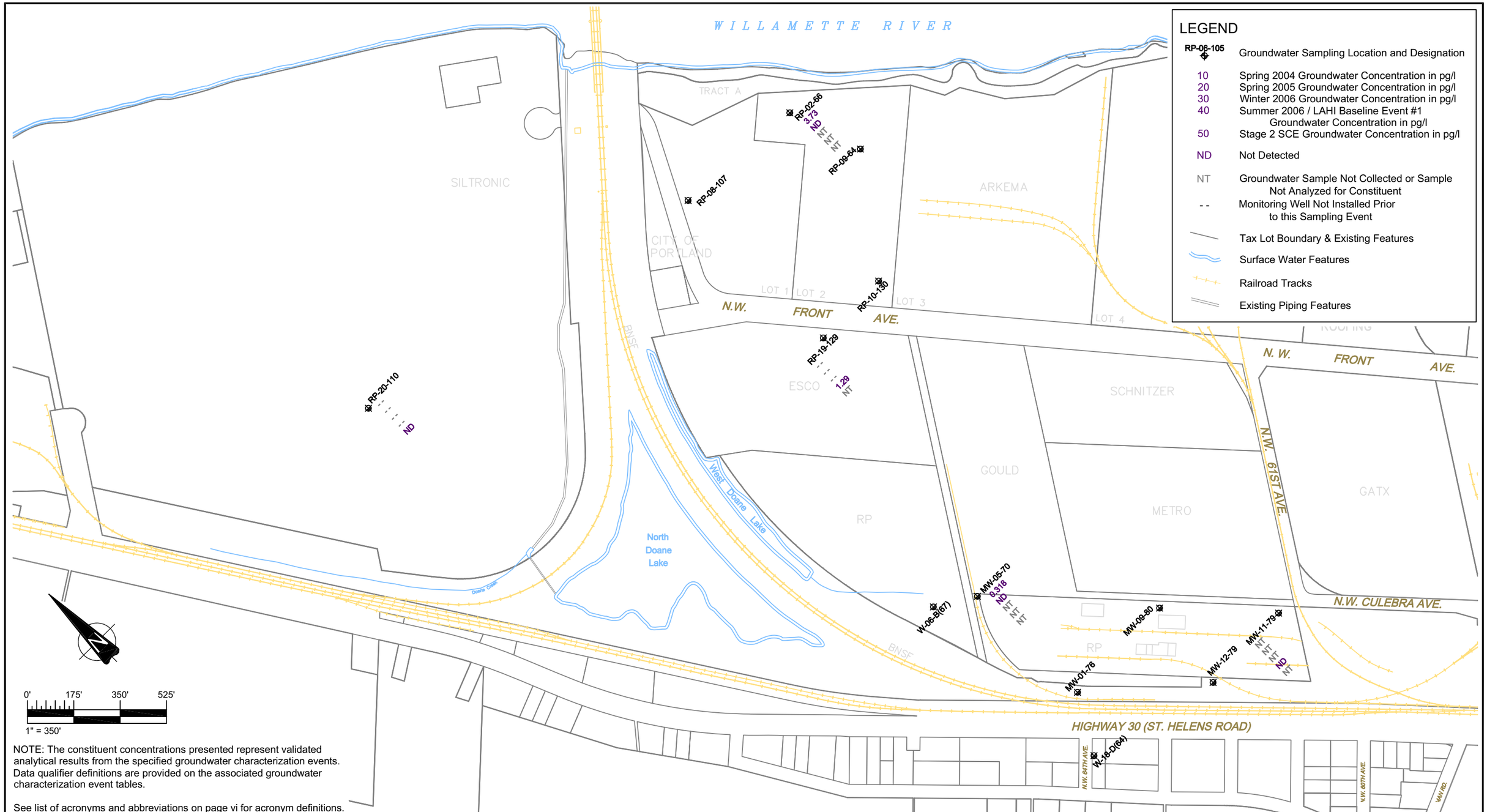
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL TEQ DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	43

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 41-44 Total TEQ in GW (2004-2006).dwg - Deep Gravel - Jun. 21, 2007 10:25am - patrick.mccarthy



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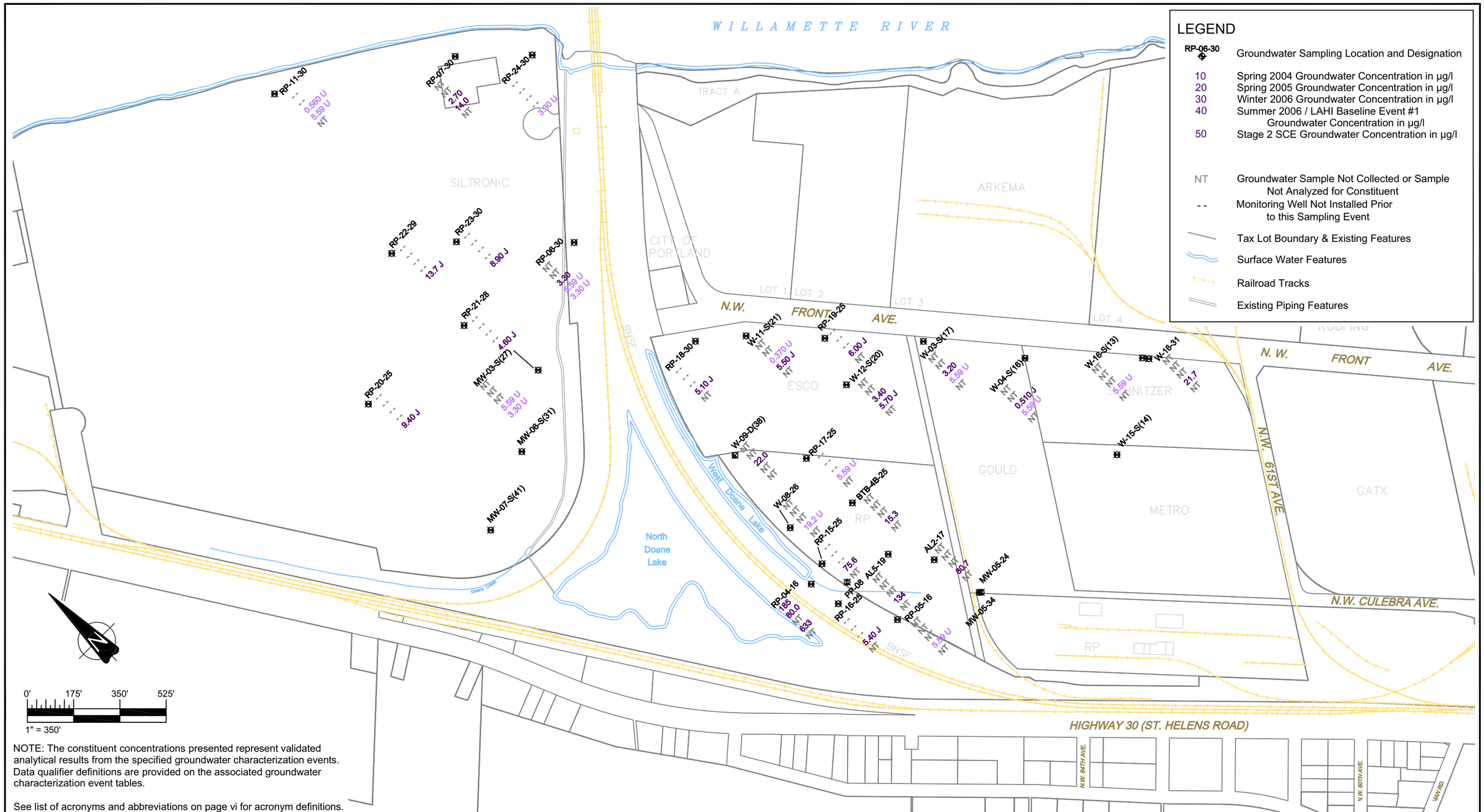
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL TEQ DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	44

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 41-44 Total TEQ in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:26am - patrick.mccarthy



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DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TOTAL ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	45

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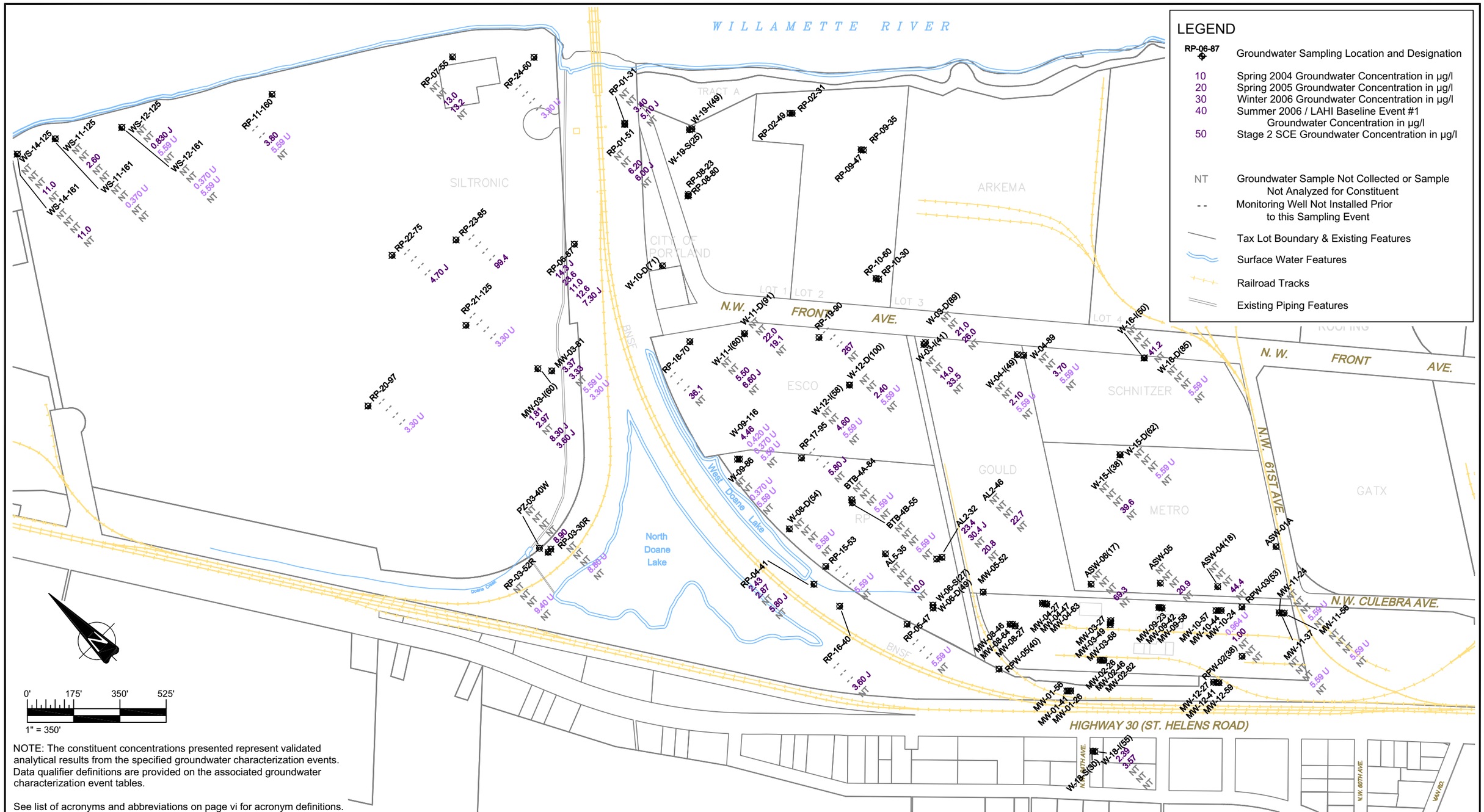
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 45-48 Total Arsenic in GW (2004-2006).dwg - Fill - Jun. 21, 2007 10:26am - patrick.mccarthy



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See list of acronyms and abbreviations on page vi for acronym definitions.

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PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	TOTAL ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	46

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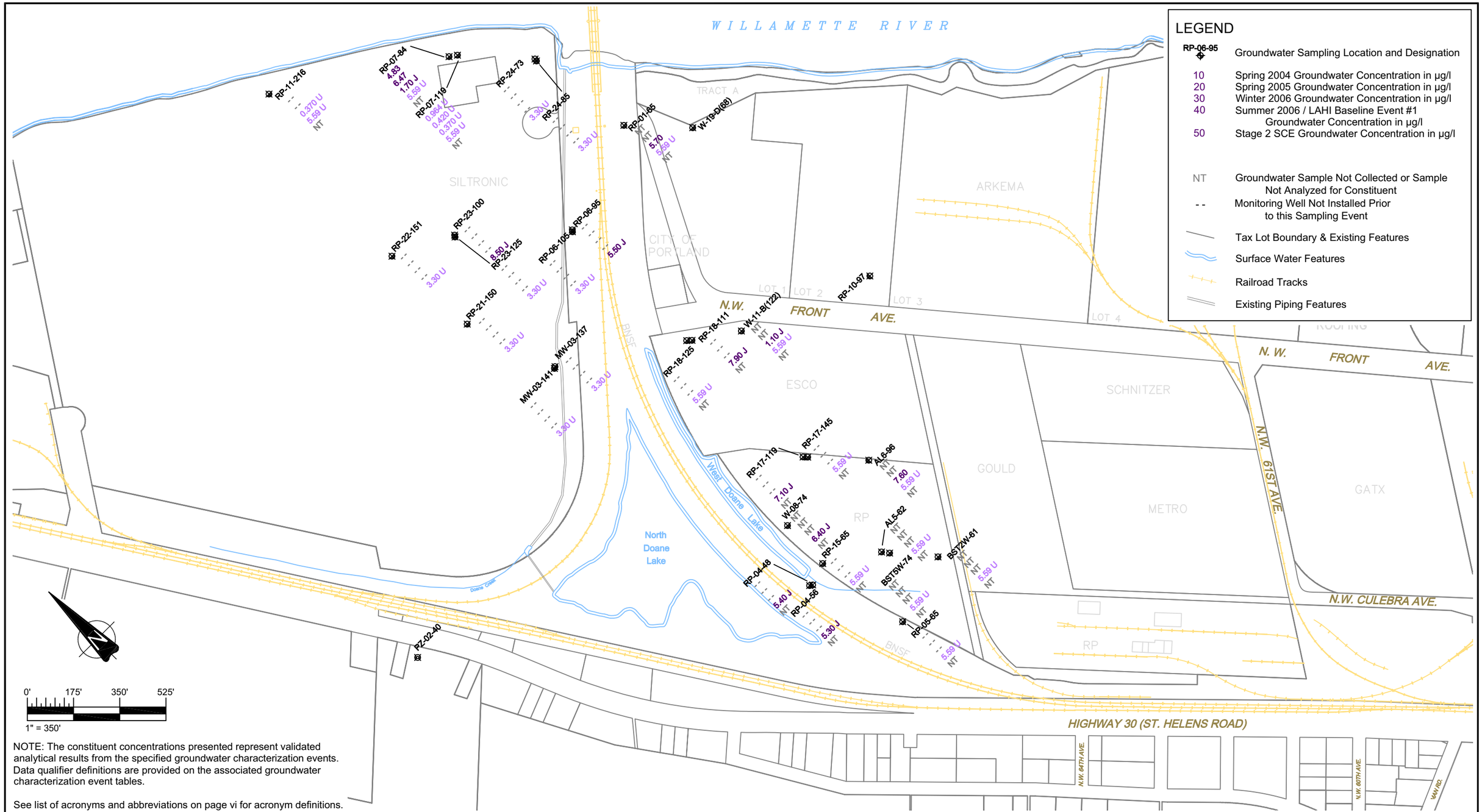

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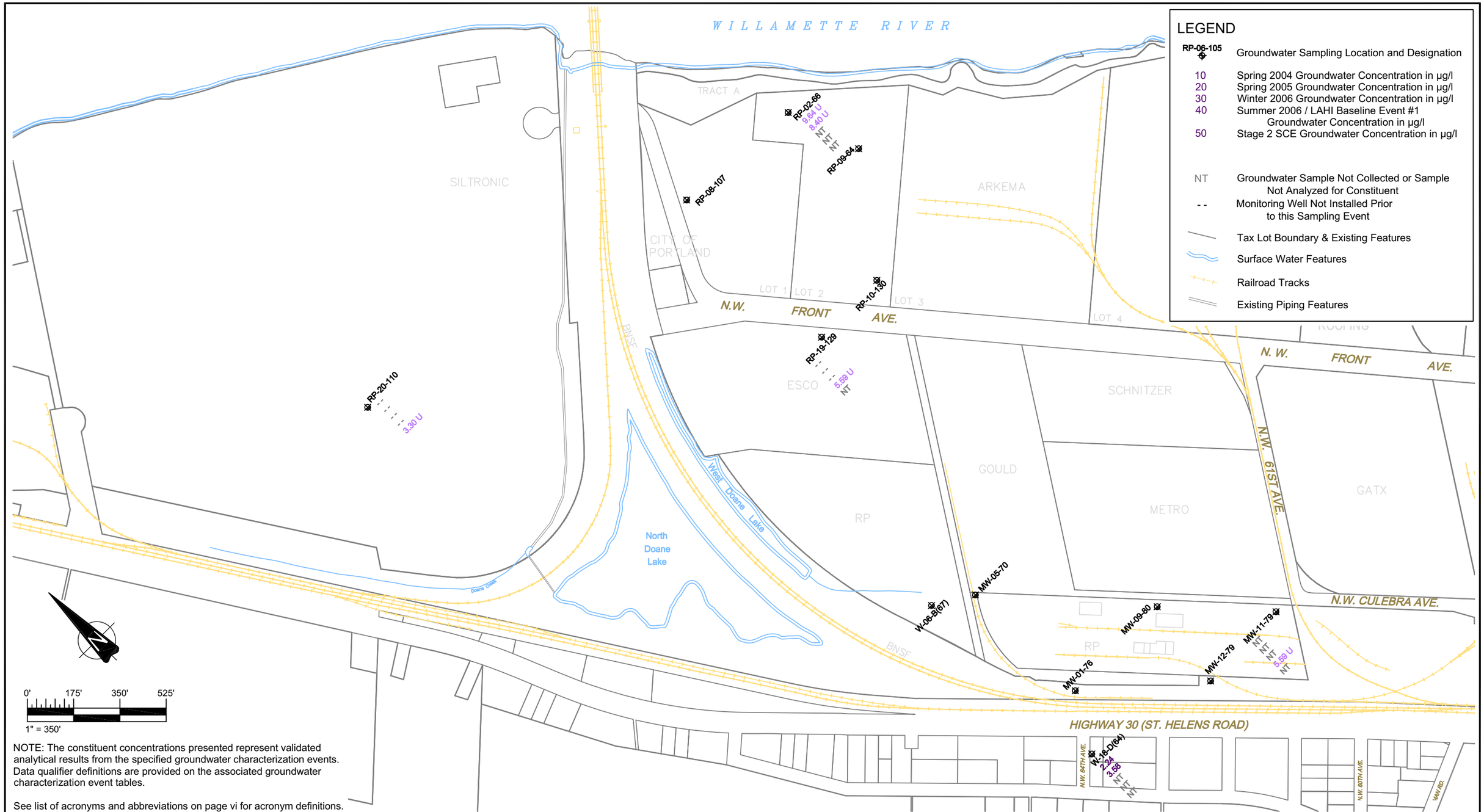
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	47

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 45-48 Total Arsenic in GW (2004-2006).dwg – Deep Gravel – Jun. 21, 2007 10:26am – patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT: SLLI

AMEC Earth & Environmental
7376 S.W. Durham Road
Portland, OR U.S.A. 97224

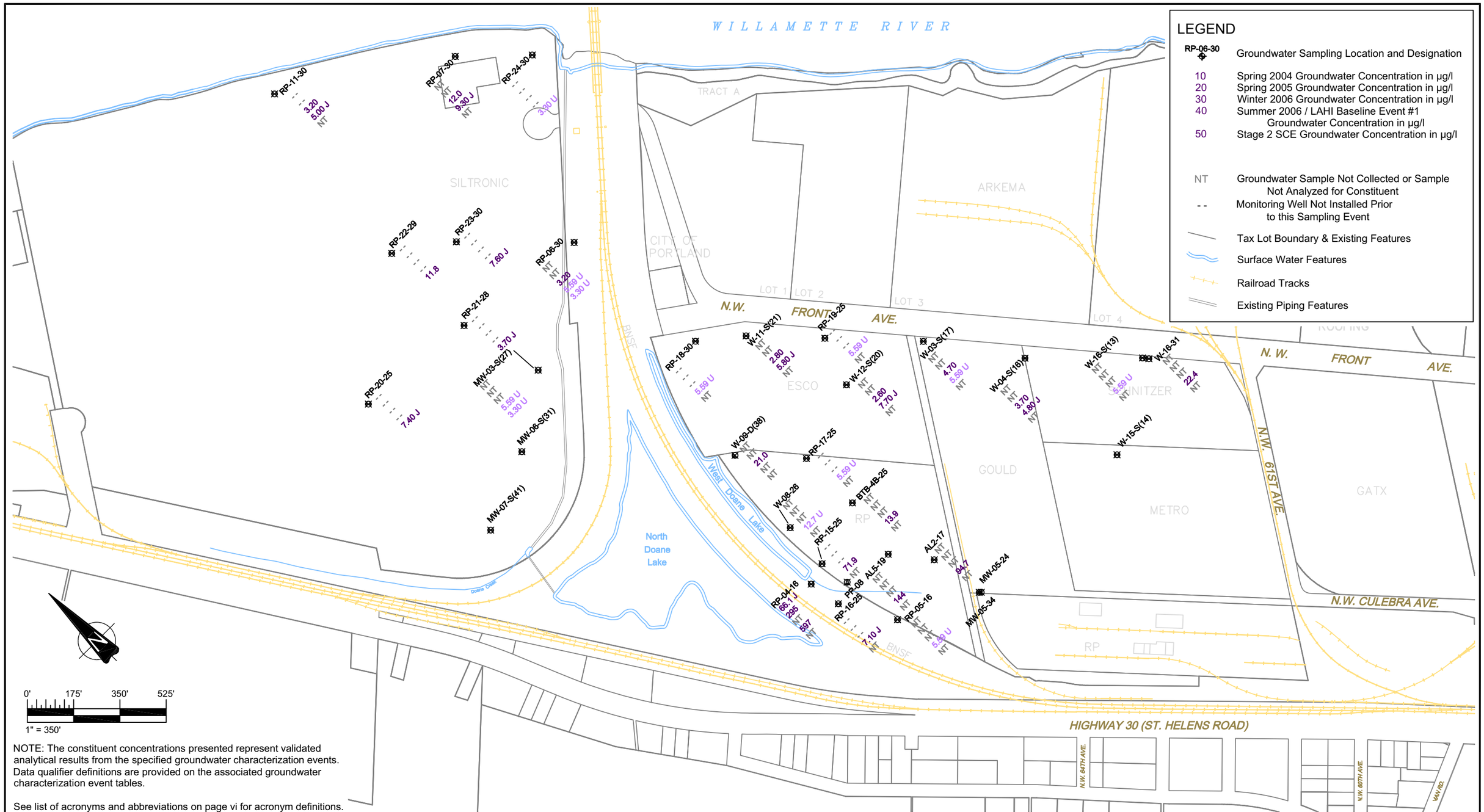
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: TOTAL ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	48

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 45-48 Total Arsenic in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:26am - patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	DISSOLVED ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	49

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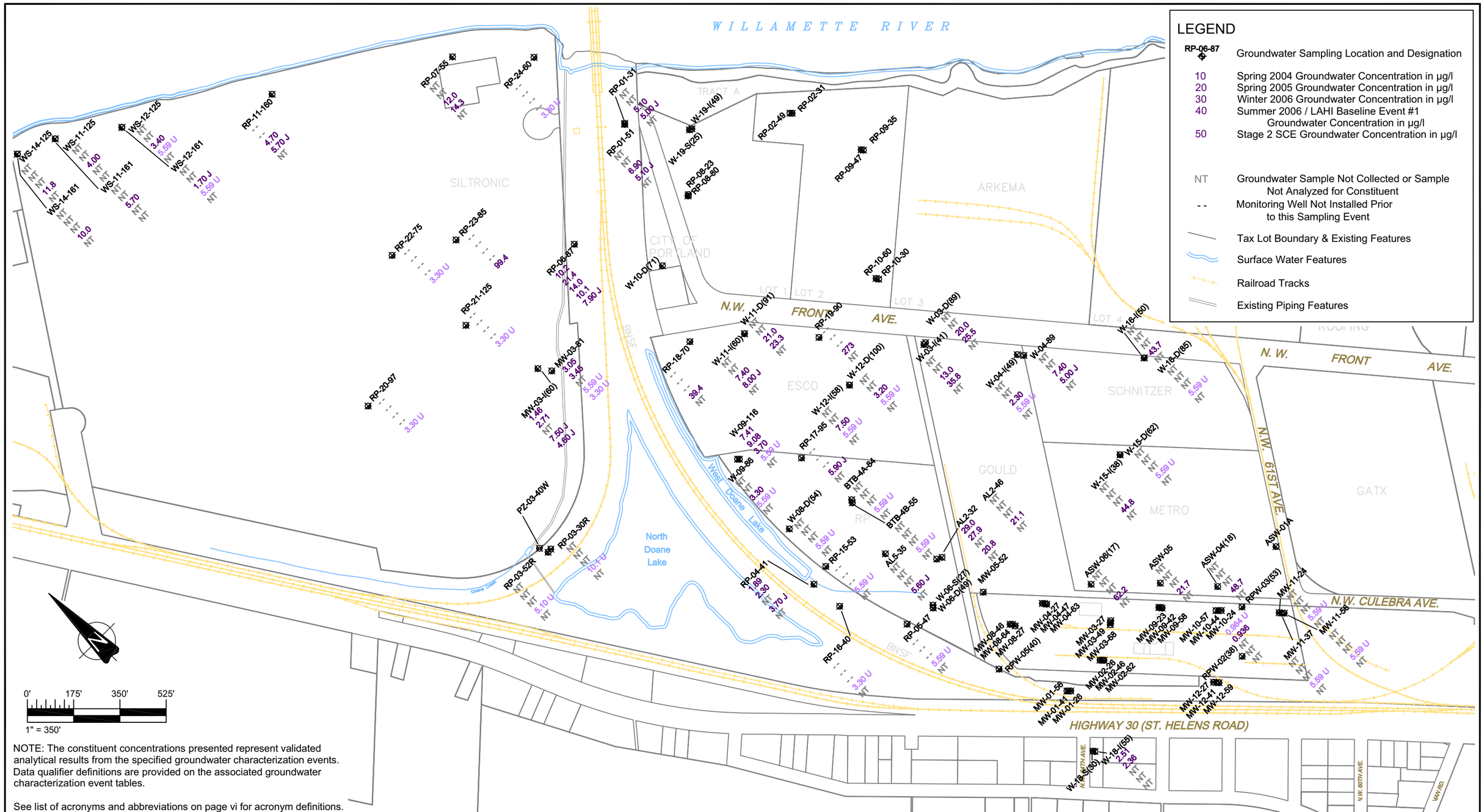
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 49-52 Dissolved Arsenic in GW (2004-2006).dwg - Fill - Jun. 21, 2007 10:26am - patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	DISSOLVED ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	50

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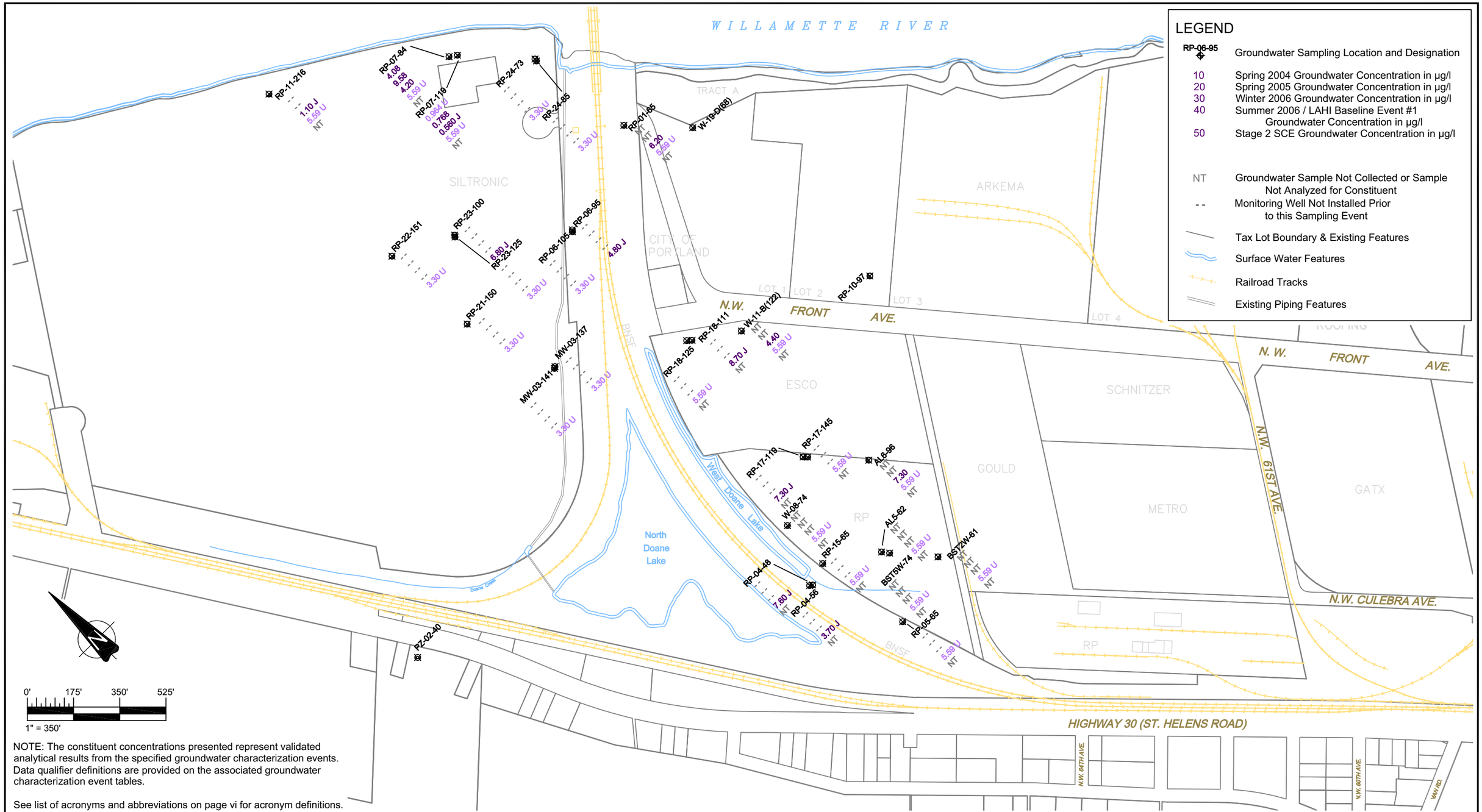
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 49-52 Dissolved Arsenic in GW (2004-2006).dwg – Alluvium – Jun. 21, 2007 10:27am – patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT: SLLI

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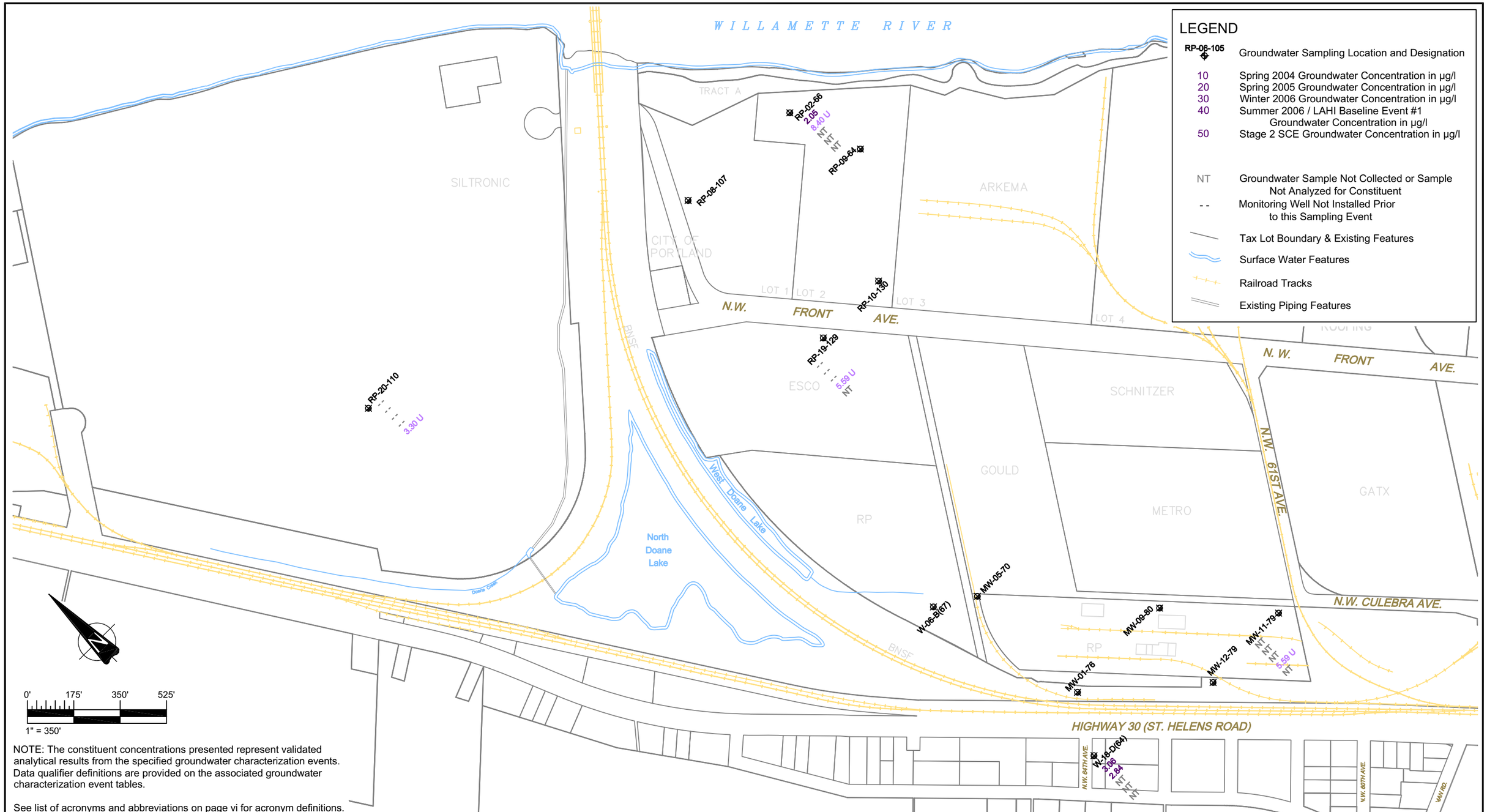
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: DISSOLVED ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 DEEP GRAVEL ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	51

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 49-52 Dissolved Arsenic in GW (2004-2006).dwg – Deep Gravel – Jun. 21, 2007 10:27am – patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT: SLLI

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Portland, OR U.S.A. 97224

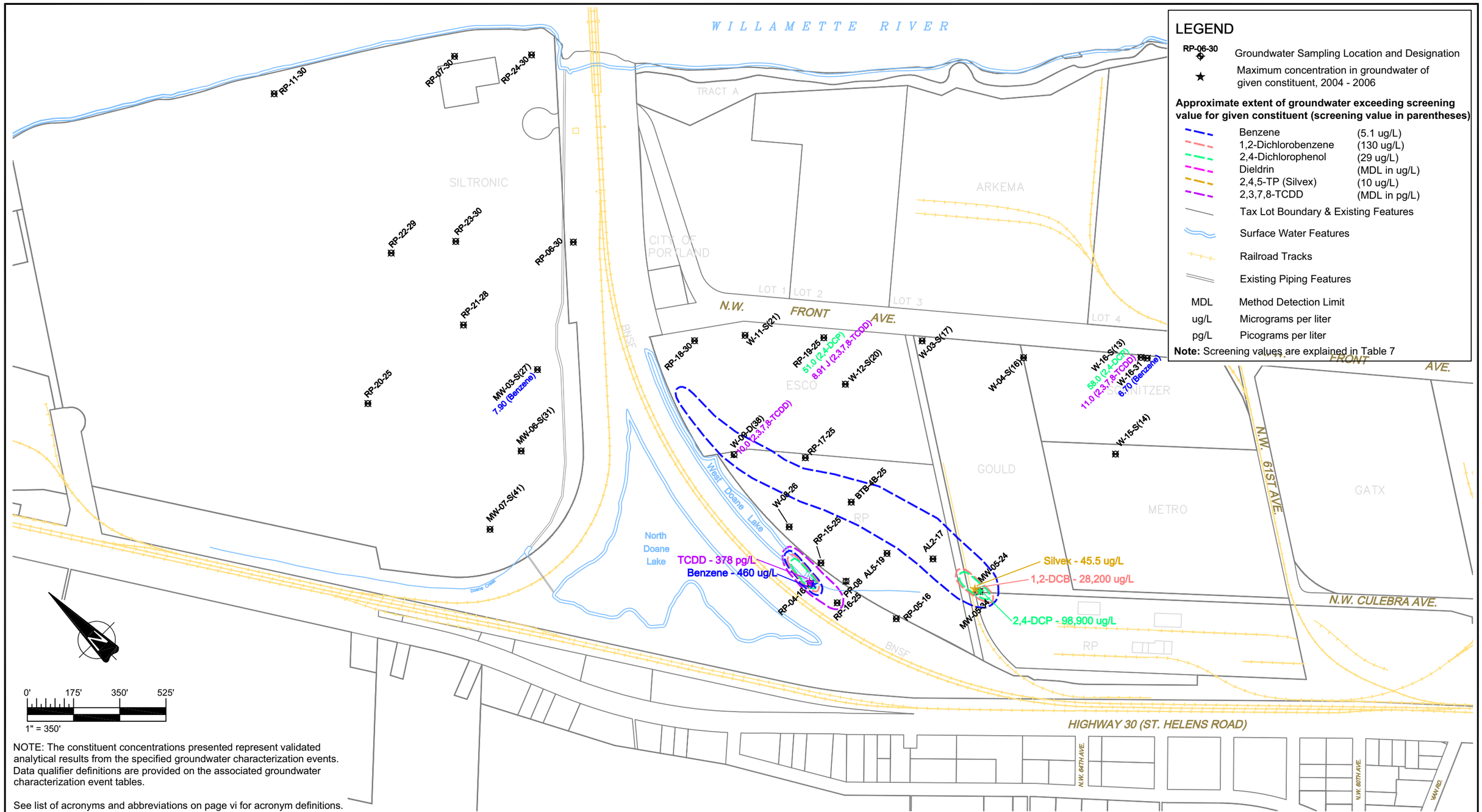
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'

PROJECT: RP - PORTLAND SITE

TITLE: DISSOLVED ARSENIC DISTRIBUTION IN GROUNDWATER, 2004-2006 BASALT ZONE

DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	52

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 49-52 Dissolved Arsenic in GW (2004-2006).dwg - Basalt - Jun. 21, 2007 10:27am - patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	GROUNDWATER EXCEEDING DEQ-REQUESTED SCREENING VALUES, SELECTED CONSTITUENTS, FILL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	53

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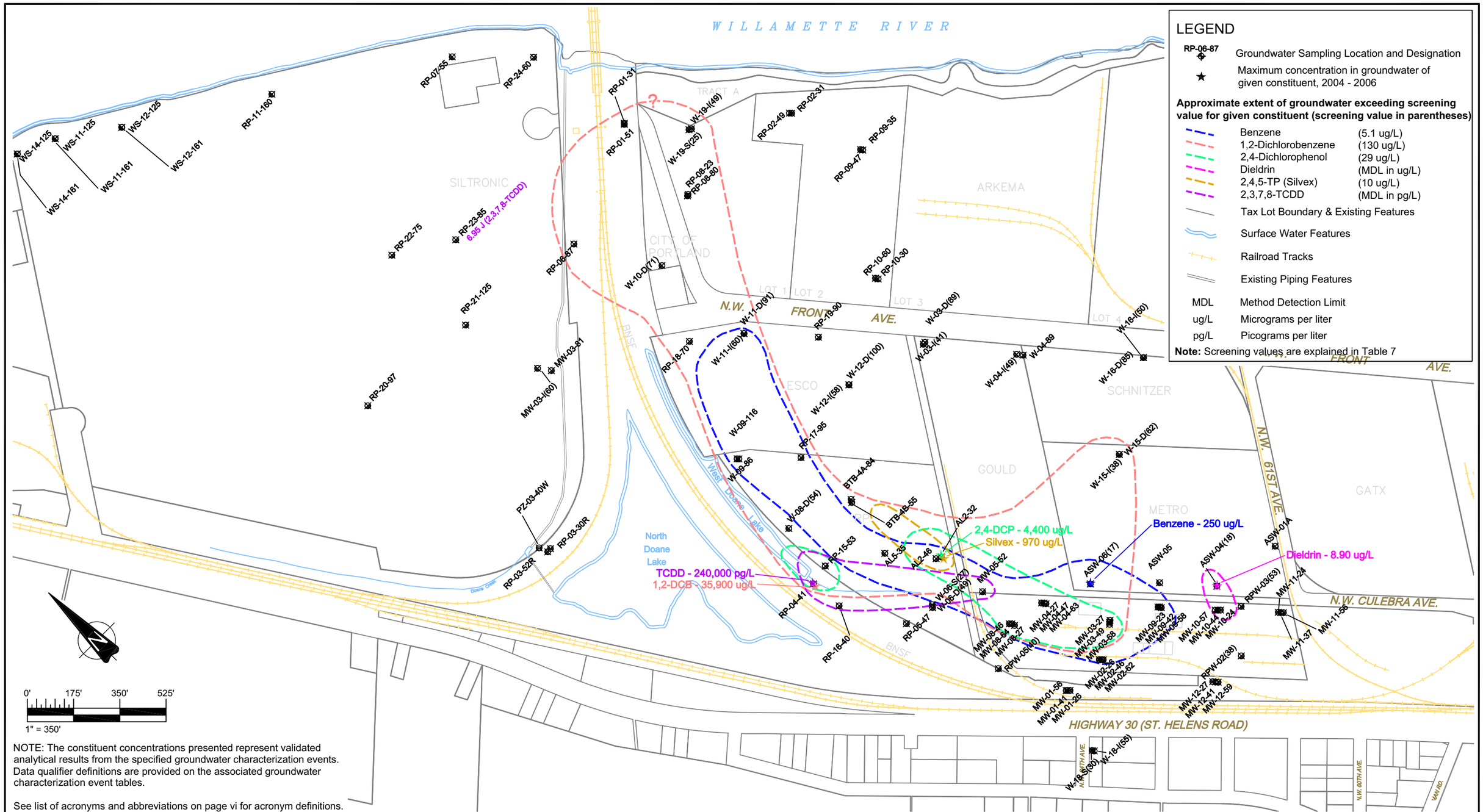
K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 53-56 GW Exceeding DEQ SVs (2004-2006).dwg – Fill – Jun. 21, 2007 10:27am – patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	GROUNDWATER EXCEEDING DEQ-REQUESTED SCREENING VALUES, SELECTED CONSTITUENTS, ALLUVIUM ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	54

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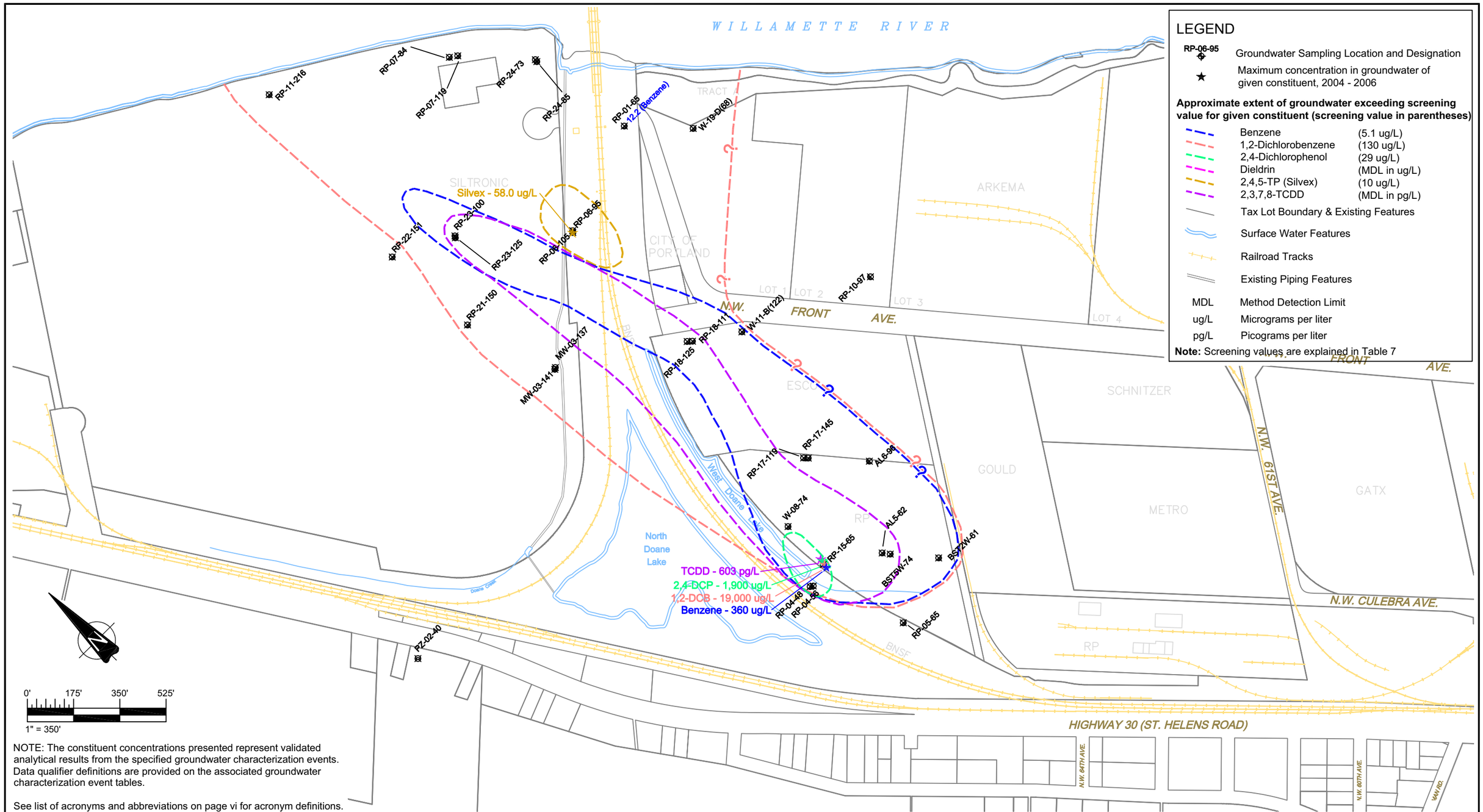
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 53-56 GW Exceeding DEQ SVs (2004-2006).dwg - Alluvium - Jun. 21, 2007 10:27am - patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	GROUNDWATER EXCEEDING DEQ-REQUESTED SCREENING VALUES, SELECTED CONSTITUENTS, DEEP GRAVEL ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	55

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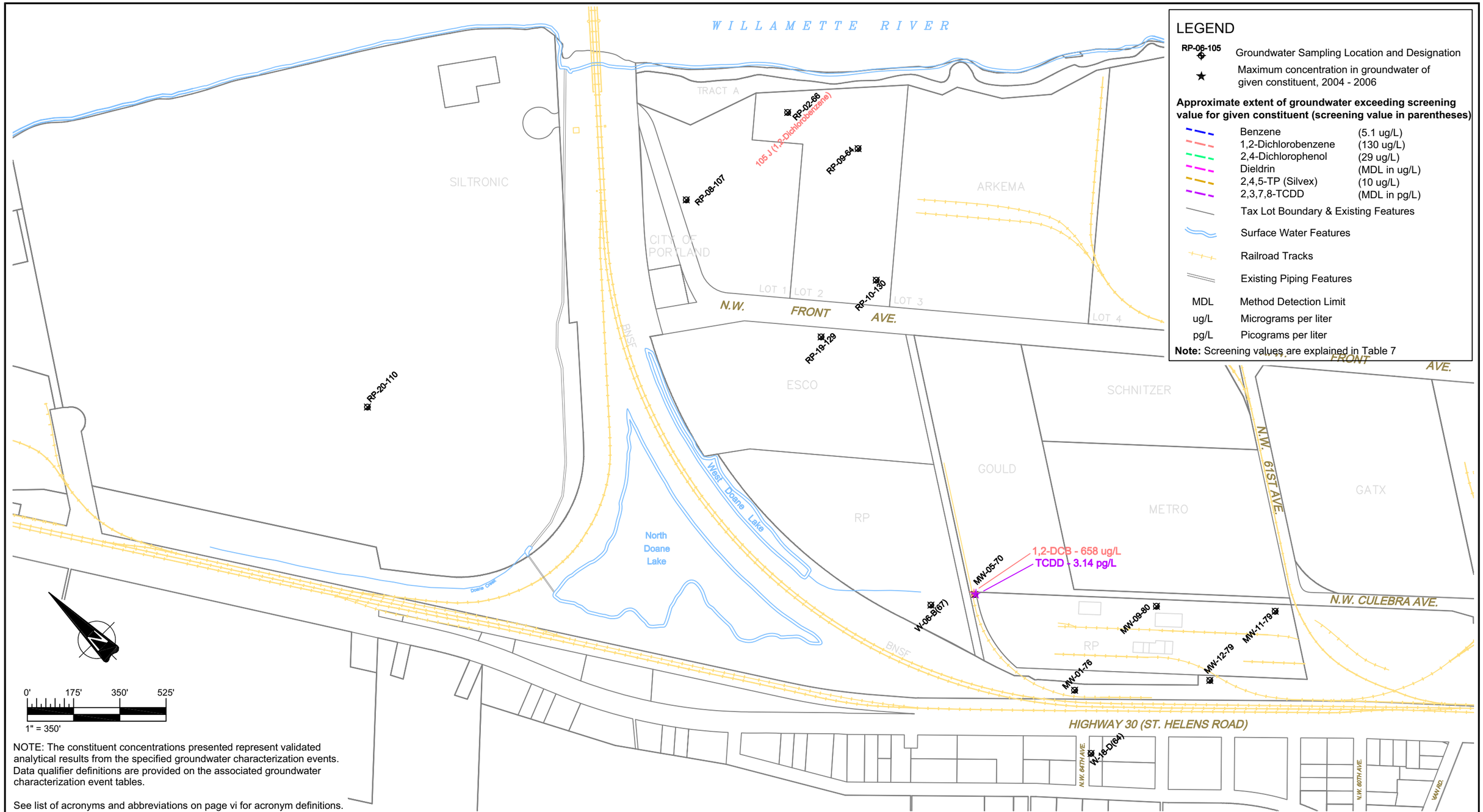
Portland, OR U.S.A. 97224

K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 53-56 GW Exceeding DEQ SVs (2004-2006).dwg - Deep Gravel - Jun. 21, 2007 10:28am - patrick.mccarthy



NOTE: The constituent concentrations presented represent validated analytical results from the specified groundwater characterization events. Data qualifier definitions are provided on the associated groundwater characterization event tables.

See list of acronyms and abbreviations on page vi for acronym definitions.

THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH THE AMEC EARTH & ENVIRONMENTAL **STAGE 2 SCE TECHNICAL MEMORANDUM** DATED JUNE 21, 2007.

CLIENT:	SLLI
DWN BY:	BRJ
CHK'D BY:	CJ
DATUM:	NAD83
PROJECTION:	OR SP N. Int Ft.
SCALE:	1" = 350'
PROJECT:	RP - PORTLAND SITE
TITLE:	GROUNDWATER EXCEEDING DEQ-REQUESTED SCREENING VALUES, SELECTED CONSTITUENTS, BASALT ZONE
DATE:	MAY 2007
PROJECT NO:	061M107030 P69 T1
REV. NO.:	1
FIGURE No.	56

AMEC Earth & Environmental
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K:\10000\10700\10703\Phase 69 Source Control Evaluation\Stage 2 SCE Tech Memo\DWG\Figures 53-56 GW Exceeding DEQ SVs (2004-2006).dwg – Basalt – Jun. 21, 2007 10:28am – patrick.mccarthy

APPENDIX A

Field Forms

APPENDIX A-1

Soil Sampling Field Forms

Sampling Area and Location	**Sampling Interval** (feet bgs)
MW-03	131.5-136.5; 136-141
RP-06	90-95; 100-105
RP-20	10-25; 23-25; 105-109
RP-21	13-28; 15-25; 115-123; 145-150
RP-22	14-29; 65-73; 146-151
RP-23	15-30; 80-85; 95-100; 120-125
RP-24	15-30; 30-32.5; 55-60 (twice); 70-73; 80-85

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: MW-03-G / 131.5-136.5
PERSONNEL: B. LARY
DATE: 10/04/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	131.5-136.5	
SOIL DESCRIPTION	SEE LOG- VARIES	
VOC HEADSPACE READING	—	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: ~~831-01~~ 1001-01
QA/QC NUMBER (S):
TIME: 1030

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0				✓	
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y ✓	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	✓	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N ✓	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL:

SAMPLING METHOD USED: COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: [signature]

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: MW-03-B
PERSONNEL: B. LARY

DATE: 10/2/06
WEATHER: COOL & PTLY CLOUDY
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	136 - 141	
SOIL DESCRIPTION	WEATHERED BASALT	
VOC HEADSPACE READING	N/A	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

MW-03/136-141 /000-01

SAMPLE COLLECTION

SAMPLE NUMBER: 880-01
QA/QC NUMBER (S):
TIME: 1630

DESCRIPTION: WEATHERED BASALT

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED: COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: B. Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-06-G
PERSONNEL: BARB LARY
DATE: 10/30/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	90-95	
SOIL DESCRIPTION	SANDY SILTY GRAVEL	
VOC HEADSPACE READING	2.6	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1017-01
QA/QC NUMBER (S):
TIME: 1130
DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, As, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	no shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? (YES) / NO
QA/QC SAMPLE COLLECTED? YES / (NO) DESCRIBE:
CHAIN OF CUSTODY COMPLETED? (YES)/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-06-B
PERSONNEL: BARB LARY

DATE: 11/27/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	100 - 105'	
SOIL DESCRIPTION	WEATHERED BASALT	
VOC HEADSPACE READING	0.1 ppm	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1016-01
QA/QC NUMBER (S):
TIME: 945

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y ✓	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y ✓	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	No Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-20-S
PERSONNEL: BARB LARY

DATE: 10/10/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	10 - 25' bgs	
SOIL DESCRIPTION	See log - SANDY SILT / SILTY SAND	
VOC HEADSPACE READING	5 TO 40 ppm	
OBSERVATION OF CONTAMINATION	Yes - Sheen + odor.	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: ~~004~~ 1004-01 - 01
QA/QC NUMBER (S):
TIME: 10:00

DESCRIPTION: RP-20-S 10 - 25'

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y ✓	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y ✓	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y ✓	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	No shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED: COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

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RP Soil Sampling Form
0-61M-107030/Phase 69
MGP Waste

SAMPLE LOCATION: RP-2c-A
PERSONNEL: B LARY

DATE: 11/01/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	23-25'	
SOIL DESCRIPTION	SILT w/ MGP waste	
VOC HEADSPACE READING	11.00	
OBSERVATION OF CONTAMINATION	Yes - Sheen & odor ✓	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: ~~9-3-01~~ 1003-01
QA/QC NUMBER (S):
TIME: 1530

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Dioxin/Furans by EPA Method 1613B	8 oz Glass jar w/ septum	1 - 8 oz.	SGS	✓	
TPH by NWTPH-Dx	4 0z Glass Jar w/ septum	1 4 oz.	TA	✓	
VOCs by EPA Method 8260B	4 oz Glass Jar w/ septum 8 oz Glass Jar w/ septum	1- 4 oz jar 2-8 oz jar	STL		
SVOCs by EPA Method				✓	
Chlorinated Herbicides by EPA Method 8151A				✓	
Organochlorine insecticides by EPA Method 8081A				✓	
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO **DESCRIBE:**
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMP. SITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE [signature]

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-20-B
PERSONNEL: B. LARY

DATE: 10/06/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	105 -109	
SOIL DESCRIPTION	SILTY GRAVEL	
VOC HEADSPACE READING	N/A	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 902-01 (1002-01)
QA/QC NUMBER (S):
TIME: 10:00

DESCRIPTION: RP-20-B 105 -109

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	✓	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	✓	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	✓	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED: COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-21-S
PERSONNEL: BARB LARY
DATE: 10/25/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	13-28'	
SOIL DESCRIPTION	SEE LOG	
VOC HEADSPACE READING	8.0 ppm or less	
OBSERVATION OF CONTAMINATION	no - just odor	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1015-01
QA/QC NUMBER (S):
TIME: 930

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	✓ Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	✓ Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	✓ N	no Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-21-A
PERSONNEL: BARB LARY

DATE: 10/24/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	115 - 123'	
SOIL DESCRIPTION	SILTY SAND	
VOC HEADSPACE READING	0.1	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1014-01
QA/QC NUMBER (S):
TIME: 1350

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	✓Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	✓Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	✓ N	BAG + SHELBY

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

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RP Soil Sampling Form
0-61M-107030/Phase 69
MGP Waste

SAMPLE LOCATION: RP-21-B
PERSONNEL:
DATE: 10/20/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	15-25 (50% RECOVERY)	
SOIL DESCRIPTION	SILTY SAND	
VOC HEADSPACE READING	4.2	
OBSERVATION OF CONTAMINATION	Sheen + odor	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1012-01
QA/QC NUMBER (S):
TIME: 1100

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Dioxin/Furans by EPA Method 1613B	8 oz Glass jar w/ septum	1 - 8 oz.	SGS ✓		
TPH by NWTPH-Dx	4 0z Glass Jar w/ septum	1 4 oz.	TA ✓		
VOCs by EPA Method 8260B	4 oz Glass Jar w/ septum 8 oz Glass Jar w/ septum	1- 4 oz jar 2-8 oz jar	STL ✓		
SVOCs by EPA Method					
Chlorinated Herbicides by EPA Method 8151A					
Organochlorine insecticides by EPA Method 8081A					
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: [signature]

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-21-B
PERSONNEL: BARB LARY

DATE: 10/23/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	145-150' bgs	
SOIL DESCRIPTION	WEATHERED BASALT - SILTY GRAVEL	
VOC HEADSPACE READING	N/A <(1.0)	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1013-01
QA/QC NUMBER (S):
TIME:

DESCRIPTION:

LABORATORY (1) COC #
LABORATORY (2) COC #
LABORATORY (3) COC #
LABORATORY (4) COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL ✓	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA ✓	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL ✓	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology ✓	N	No Shelby!

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-22-S
PERSONNEL: BARB LARY
DATE: 6/12/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	14 - 29'	
SOIL DESCRIPTION	SILTY SAND	
VOC HEADSPACE READING	5.8 to 8.6	
OBSERVATION OF CONTAMINATION	NONE - SHEEN ONLY	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1007-01 @1530
QA/QC NUMBER (S): 1007-02 (DUP) @1540
TIME:
DESCRIPTION: see log

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	No Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE: DUPLICATE
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.)
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-22-A
PERSONNEL: BARB LARY

DATE: 10/12/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	65 - 73'	
SOIL DESCRIPTION	fine SAND w/ some silt & organics (wood)	
VOC HEADSPACE READING	5.3	
OBSERVATION OF CONTAMINATION	none	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1006-01
QA/QC NUMBER (S):
TIME: 1145

DESCRIPTION: see above

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y ✓	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	BAG + Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-22-B
PERSONNEL: BARB LARY
DATE: 10/11/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	146-151	
SOIL DESCRIPTION	CLAYEY SILT W/ SOME GRAVEL	
VOC HEADSPACE READING	N/A	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1005-01
QA/QC NUMBER (S):
TIME: 1445

DESCRIPTION: See above

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-23-S
PERSONNEL: BARB LARY

DATE: 10/18/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	15 - 30'	
SOIL DESCRIPTION	SEE LOG	
VOC HEADSPACE READING	< 1.0	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1011-01
QA/QC NUMBER (S):
TIME: 1315

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-23-A
PERSONNEL: CARB LARY

DATE: 10/18/06
WEATHER: CLOUDY & DRIZZLE
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	80-85'	
SOIL DESCRIPTION	SILTY SAND	
VOC HEADSPACE READING	0.1	
OBSERVATION OF CONTAMINATION	None	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: IU10-01
QA/QC NUMBER (S):
TIME: 1015

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL ✓	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA ✓	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL ✓	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology ✓	N	No Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED: COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: Carb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-23-G
PERSONNEL: BARB LARY

DATE: 10/17/06
WEATHER:

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	95 -100'	
SOIL DESCRIPTION	SILTY, SANDY GRAVEL	
VOC HEADSPACE READING	N/A	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1009-01
QA/QC NUMBER (S): —
TIME: 1300

DESCRIPTION: RP-23-G/95-100 SILTY SANDY GRAVEL

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	No Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED: COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE: Barb Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-23-B
PERSONNEL: BARB LARY

DATE: 10/16/06
WEATHER: PTLY CLDY & SHOWERS

START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	120 - 125	
SOIL DESCRIPTION	WEATHERED BASALT.	
VOC HEADSPACE READING	N/A	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1008-01
QA/QC NUMBER (S): —
TIME: 1430

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020				✓	
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	✓ Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	✓ Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	no Shelby

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE Bart Lary

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-24-5
PERSONNEL: J. Fussie

DATE: 11/13/06
WEATHER: Cloudy, Showers, 50°F

START TIME: 1430

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	15-30'	
SOIL DESCRIPTION	Sandy SILT / silty fine SAND	
VOC HEADSPACE READING	2.5-3.8 ppm	
OBSERVATION OF CONTAMINATION	None	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1023-01
QA/QC NUMBER (S):
TIME: 1440

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: RP-WSF

SAMPLING METHOD USED: Mini Sonic Core
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 11/13/06
INSTRUMENT CALIBRATION STANDARD: 100 ppm isobutylene STD

ADDITIONAL COMMENTS:

SIGNATURE

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-24-A
PERSONNEL: J. Fussio

DATE: 11/10/06
WEATHER: Rain / ; 50°F

START TIME: 1030

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	55-60'	
SOIL DESCRIPTION	poorly graded fine sand w/some to TR silt	
VOC HEADSPACE READING	0.2	
OBSERVATION OF CONTAMINATION	NONE	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1022-01
QA/QC NUMBER (S):
TIME: 1045

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES / NO
WASTE DISPOSAL: at RP WSF

SAMPLING METHOD USED: MiniSonic
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 10/11/06, 8:30
INSTRUMENT CALIBRATION STANDARD: 100 ppm isobutylene

ADDITIONAL COMMENTS:

SIGNATURE

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-24-G
PERSONNEL: J. Fassio

DATE: 11/8/06
WEATHER:

START TIME: 1300

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	70-73'	
SOIL DESCRIPTION	Dense, gray, well graded coarse to medium SAND with Rounded Gravel	
VOC HEADSPACE READING	No reading	
OBSERVATION OF CONTAMINATION	None - no odor	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1021-01
QA/QC NUMBER (S):
TIME: 1330

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL: RP use

SAMPLING METHOD USED: Grab - MiniSonic
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.)
INSTRUMENT CALIBRATION: (Date/Time) NR
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

No PID available.

SIGNATURE

RP Soil Sampling Form
0-61M-107030/Phase 69
MGP Waste

SAMPLE LOCATION: RP-24-B
PERSONNEL: JOE FASSIO
DATE: 10/27/06
WEATHER:
START TIME:

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	30 - 32.5	
SOIL DESCRIPTION	SILTY SAND/SANDY SILT	
VOC HEADSPACE READING	3.5	
OBSERVATION OF CONTAMINATION	SHEEN	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1018-01
QA/QC NUMBER (S):
TIME: 1130

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Dioxin/Furans by EPA Method 1613B	8 oz Glass jar w/ septum	1 - 8 oz.	SGS		
TPH by NWTPH-Dx	4 0z Glass Jar w/ septum	1 4 oz.	TA		
VOCs by EPA Method 8260B	4 oz Glass Jar w/ septum 8 oz Glass Jar w/ septum	1- 4 oz jar 2-8 oz jar	STL		
SVOCs by EPA Method					
Chlorinated Herbicides by EPA Method 8151A					
Organochlorine insecticides by EPA Method 8081A					
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)					

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO
WASTE DISPOSAL:

SAMPLING METHOD USED COMPOSITE
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.) GRAB
INSTRUMENT CALIBRATION: (Date/Time)
INSTRUMENT CALIBRATION STANDARD:

ADDITIONAL COMMENTS:

SIGNATURE

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-24-B
PERSONNEL: J. Frassio

DATE: 10/30/06
WEATHER: Clear, 50°F

START TIME: 1200

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	55-60'	
SOIL DESCRIPTION	fine Sand with Tr silt	
VOC HEADSPACE READING	1.1	
OBSERVATION OF CONTAMINATION	None	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1019-01
QA/QC NUMBER (S): None
TIME: 1230

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? YES / NO
QA/QC SAMPLE COLLECTED? YES / NO DESCRIBE:
CHAIN OF CUSTODY COMPLETED? YES/NO By Barb Lary
WASTE DISPOSAL: RP WSF

SAMPLING METHOD USED: Sonic
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800 10/30/06
INSTRUMENT CALIBRATION STANDARD: Isobutylene

ADDITIONAL COMMENTS:

SIGNATURE

RP Soil Sampling Form
0-61M-107030/Phase 69

SAMPLE LOCATION: RP-24-B
PERSONNEL: J. Fussin

DATE: 10/30/06
WEATHER: Clear, 50°F

START TIME: 1530

OBSERVATIONS/FIELD MEASUREMENTS

MEASUREMENT TYPE	VALUE / UNITS	COMMENTS
SAMPLE DEPTH (FT)	80-85'	
SOIL DESCRIPTION	Stiff, gravelly Clay	
VOC HEADSPACE READING	0.3	
OBSERVATION OF CONTAMINATION	None	

(FT=DEPTH IN FEET)

ADDITIONAL COMMENTS/OBSERVATIONS

SAMPLE COLLECTION

SAMPLE NUMBER: 1020-01
QA/QC NUMBER (S):
TIME: 1600

DESCRIPTION:

LABORATORY (1)
LABORATORY (2)
LABORATORY (3)
LABORATORY (4)

COC #
COC #
COC #
COC #

PARAMETER(S)	PRESERVATION/ SIZE	NUMBER/ VOLUME	LABORATORY	ICED (Y/N)	COMMENTS
Total Metals by 6000/7000 Series (Al, Ar, Cd, Cr, Cu, Pb, Mn, Ni, Vn, Zn, Hg)	8 oz Glass Jar w/ septum	1-8 oz jar	STL	Y	
Cations (Calcium, Iron, Magnesium, Potassium, Sodium) by EPA Method 6010/6020					
Anions (Chloride, Sulfate) by EPA Method 300.0					
Sulfides by EPA Method 9030					
Total Organic Carbon (TOC)					
Alkalinity, pH, Hardness by EPA Methods 310.1, 150.1/9040A, SM2340B	1-4oz Glass jar w/ septum 1-8 oz Glass Jar w/septum	1- 4 oz and 1 - 8 oz.	TA	Y	
Anions (Nitrate, Nitrite) by EPA Method 300.0					
Orthophosphate by EPA Emthod 365.2					
Chemical Oxygen Demand (COD) by EPA Method 410.4					
Heterotrophic Plate Count and Diesel Degrading Bacteria	125 ml sterile plastic	1	FQL	Y	
Grain Size Analysis (incl: silt/clay fraction), bulk density, Porosity by ASTM 422	1 gallon bag + 1 shelby for porosity	1	Soil Technology	N	

SOP - 3: DECONTAMINATION PROCEDURES FOLLOWED? (YES) / NO
QA/QC SAMPLE COLLECTED? YES (NO) DESCRIBE:
CHAIN OF CUSTODY COMPLETED? (YES) / NO
WASTE DISPOSAL: RP WSP

SAMPLING METHOD USED: Sonic
SAMPLE TYPE (IE: GRAB, SPLIT, ETC.): Grab
INSTRUMENT CALIBRATION: (Date/Time) 800-10/30/06
INSTRUMENT CALIBRATION STANDARD: isobutylene

ADDITIONAL COMMENTS:

SIGNATURE

APPENDIX A-2

Well Development Field Forms

Monitoring Well Cluster	**Bottom Screen Depth** (feet bgs)
MW-03	137; 141
RP-06	95; 105
RP-20	25; 97; 110
RP-21	28; 125; 150
RP-22	29; 75; 151
RP-23	30; 85; 100; 125
RP-24	30; 60; 73; 85

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/1/06

Completed By: JCL

Well Name: MW3 ~~BG~~ 137

Well Development Method: SURGE/PURGE via AIR LIFT

Contractor Name: AMEC

Static Water Level Before Development (ft): ~~38~~.35

Depth of Well (toc): 136.

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1325

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1325	~1-2 gpm	N	0	02	Green Tentacles
1345			130 gal	39	

Volume of Water Removed from Well (gal):

Time Complete Development:

Static Water Level After Development (ft): 22.00 After 10 MIN

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/1/06

Completed By:

Well Name: MW3 - ~~143~~ 141

Well Development Method: surge/purge w/ air lift pump

Contractor Name: AMEC

Static Water Level Before Development (ft): 21.78

Depth of Well (toc):

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0900

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
0900	1-2	N	0	OR	Moderate recovery
0947	~<2gpm		~75gal		
10:41	< 2 gal			195	
11:10				113	
11:30				207	
1200			300gal	176	

Volume of Water Removed from Well (gal): 300 gal

Time Complete Development: 1200

Static Water Level After Development (ft): 23.98 after 20min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/2/00

Completed By: [illegible]

Well Name: RP-[illegible]-95

Well Development Method: surge/pump in circuit

Contractor Name: AMEC

Static Water Level Before Development (ft): 28.52

Depth of Well (toc): 97.0

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1130

Sediment in Well Bottom (in): Start: 97.0 Finish: 97.0

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1130	~2gpm	N	0	OR	on recharge
1200	~1gpm		40 gal	146	~ recharge
1250	~1.5gpm		100 gal	71.2	~ recharge
1330	~1.5gpm		190 gal	34.4	good recharge
1430	~1.5gpm		300 gal	17.2	" "

Volume of Water Removed from Well (gal): 300 gal

Time Complete Development: 1430

Static Water Level After Development (ft): 28.59 after 20 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/21/00

Completed By: JPG

Well Name: RP-6-B105

Well Development Method: Surge/Purge via Air Lift

Contractor Name: AMEC

Static Water Level Before Development (ft): 23.41

Depth of Well (toc): +100'

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development:

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
0800	>2gpm		0	OR	well recharge
1000			300gal.	12.2	

Volume of Water Removed from Well (gal): ~~28.45~~ 26 300gal

Time Complete Development: 1000

Static Water Level After Development (ft): 28.45

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/31/06

Completed By: JC

Well Name: RP-20-25

Well Development Method: Surge/Purge via Airlift

Contractor Name: Amec

Static Water Level Before Development (ft): 19.90

Depth of Well (toc): ~~29~~.2'

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1100

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
start	11[illegible]	~1 gal		0	OR	slow recharge
stop	1120			20 gal	OR	
	1330			~~30~~ gal		
	1420			50 gal	77.1	

Volume of Water Removed from Well (gal): ~~50~~ gal

Time Complete Development: 1420

Static Water Level After Development (ft): 20.39 after 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/31/06

Completed By: JG

Well Name: RP-20-~~95~~ 97

Well Development Method: SURGE / PURGE VIA AIR LIFT

Contractor Name: AMEC

Static Water Level Before Development (ft): 24.20

Depth of Well (toc): 89.9

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0900

Sediment in Well Bottom (in): Start: 7.1' Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
START	0900	~1gpm	N	0	OR	SLOW RECHARGE. PILOT OUT
STOP	1000	~1gpm		60 gal	OR	EXHAUST.
START	1120	~1gpm		60	OR	
STOP	1230	~1gpm		120 gal	168	

Volume of Water Removed from Well (gal):

Time Complete Development:

Static Water Level After Development (ft): 34.76 After 10M.

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: RP - Stage 2 SCE

Project Number: 061M107030 Phase 69

Date: 10/31/06

Completed By: [illegible]

Well Name: RP-20-110

Well Development Method: Purge and surge via air lift pump

Contractor Name: AMEC

Static Water Level Before Development (ft): 27.56

Depth of Well (toc):

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1000

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
Start	1000	1-2 gpm	N		372	OK: recharge
Top	1100			120 gal	14.6	
Start	1230	1-2 gpm		120 gal	17.2	
Top	1330	2-2 gpm		260 gal	9.4	

Volume of Water Removed from Well (gal): 260 gal

Time Complete Development: 1330

Static Water Level After Development (ft): 38.55 After 10 min
33.45 After 25 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/27/06

Completed By: JG

Well Name: RP-21-~~S~~ 28

Well Development Method: Surge and purge via air lift pump

Contractor Name: AMEC

Static Water Level Before Development (ft): 16.25

Depth of Well (toc): 31.1

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0800

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
	0800	2-5	N	Ø	OR	
Stop	0805	Ø-1		10 gal	OR	Dry slow recharge
Start	0905	Ø-1		10 gal	OR	
Stop	0915	Ø-1		20 gal	OR	Dry slow recharge
Start	1045	Ø-1		20 gal	~~316~~	
Stop	1100	Ø-1		45 gal	26.4	" " "
Start	1120	0-1		45	29.6	
Stop	1200	0-1		80	31.4	
Start	1400	Ø-1		80	30.6	
Stop				100 gal	27.2	

Volume of Water Removed from Well (gal): 100 gal

Time Complete Development: 1420

Static Water Level After Development (ft): 16.29 After 10 Min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/27/06

Completed By: JG

Well Name: RP-21-A125

Well Development Method: Surge and Purge via Airlift

Contractor Name: AMEC

Static Water Level Before Development (ft): 23.09

Depth of Well (toc):

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1100

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
	1100	2-5	N	0	.OR	very low recharge
Stop	1120	0-1		15 gallons	OR	Dry
Start	1300	0-1		15		"
Stop	1400	0-1		75 gallons	85.1	Dry
Start	1420	0-1		75	81.6	"
Stop	1520	0-1		125	34.2	Dry

Volume of Water Removed from Well (gal): 125 gal

Time Complete Development: 1520

Static Water Level After Development (ft): 23.20 after 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/27/06

Completed By: JG

Well Name: RP-21-150

Well Development Method: SURGE AND PURGE VIA AIR LIFT PUMP

Contractor Name: AMEC

Static Water Level Before Development (ft): 24.68

Depth of Well (toc): 150'

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0805

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
0805	2-5gpm	n	0	OR	Good recharge
0900	2-3gpm		150gal	36.9	" "
1000	2-3gpm		300gal	9.6	" "

Volume of Water Removed from Well (gal): 300gal

Time Complete Development: 1000

Static Water Level After Development (ft): 24.75 after 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/26/06

Completed By: JG

Well Name: RP-22-S29

Well Development Method: Surge and pump via airlift.

Contractor Name: AMEC

Static Water Level Before Development (ft): 15.82

Depth of Well (toc): 29.1

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1135

Sediment in Well Bottom (in): Start: .1 Finish: 0

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1135	2-5 gpm	N	0	OR	OK recharge
1145	~1 gpm		10 gal	695	" "
1155	~1 gpm		25 gal	173	" "
OFF 5min 1330	~1 gpm		75 gal	51.6	stopped @ 1330 for recharge
1340	~1 gpm		80 gal	36.4	
1400	~1 gpm		85 gal	35.0	RAN FOR 5 MIN

Volume of Water Removed from Well (gal): 85

Time Complete Development: 1400

Static Water Level After Development (ft): 15.70 @ 2 Min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/26/06

Completed By: JG

Well Name: RP 32-75

Well Development Method: SURGE AND PUMP VIA AIR LIFT

Contractor Name: AMEC

Static Water Level Before Development (ft): 24.41

Depth of Well (toc): 75.2

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1030

~~Sediment in~~ Depth to Well Bottom (in): Start: 75.2 Finish: 75.2

Time ~~Start~~ Fin Development: 1130

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1030	2-5 gpm	N	0	OR	
1100	~1 gpm		50 gal	496	Good recharge
1115	~1.75 gpm		75 gal	71.6	" "
TOP 1130	~1.75 gpm		100 gal	20.5	" " STOP
TAPT 1400	~1.75 gpm		100 gal	20.9	" " START
1500	~1.75 gpm		200 gal	15.4	" "

Volume of Water Removed from Well (gal): 200 gal

Time Complete Development: 1130

Static Water Level After Development (ft): 30.3 After 2 min 26.10 After 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE** Project Number: 061M107030 Phase 69

Date: 10/26/06 Completed By: JG

Well Name: RP 22-151

Well Development Method: Surge and purge via airlift

Contractor Name:

Static Water Level Before Development (ft): 22.66 Depth of Well (toc):

Inside Diameter (in): 2" Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1345

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1345	2-5gpm	N	Ø	316	slow recharge
top restart 1400	Ø-.5		20 gal	46.4	Dry
1500	Ø-.5		30 gal	31.0	restart
1540	Ø-.5		35	23.6	Dry
1600	Ø-.5		50	19.5	Dry

Volume of Water Removed from Well (gal): 50

Time Complete Development: 1600

Static Water Level After Development (ft): 23.51 After 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/30/06

Completed By: JG

Well Name: RP-23-30

Well Development Method: Surge/Purge with air lift

Contractor Name: AMEC

Static Water Level Before Development (ft): 16.11

Depth of Well (toc): 29.4

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1130

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
	1130	2-5gpm	N	0	OR	very slow recharge
stop	1140	~1gpm		10 dry	OR	dry
start	1200	2gpm		10		
stop	1215	2gpm		25 dry	462	dry
start	1300	2gpm		25	164	
stop	1315	2gpm		40 dry	197	dry
start	1400	2gpm		40		
stop	1450	2gpm		90 dry	74.9	dry

Volume of Water Removed from Well (gal): 90gal

Time Complete Development: 1450

Static Water Level After Development (ft): 28.2 After 2 Min
18.61 After 15 Min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/30/06

Completed By: [illegible]

Well Name: RP-23-85

Well Development Method: Surge AND purge via Air Lift

Contractor Name: AMEC

Static Water Level Before Development (ft): 26.50

Depth of Well (toc): 35.00

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0800

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
	0800	2-5 gpm	N	0	OR	Slow recharges
Stop	0900	~1gpm		50	49.8	Dry
Start	0940	~1gpm		50		
Stop	0950	~1gpm		60 dry	33.8	Dry
Start	1050	~1gpm		100		
	1130	~1gpm		100 dry	36.5	Dry

Volume of Water Removed from Well (gal): 100 gal

Time Complete Development: 1130

Static Water Level After Development (ft): 31.57 After 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/30/06

Completed By: JG

Well Name: RP-23-100'

Well Development Method: Surge/Purge via Airlift

Contractor Name: AMEC

Static Water Level Before Development (ft): 27.06

Depth of Well (toc): 100'

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1140

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
	~~1140~~	~2-3gpm	N	0	OR	OK recharge
TOP	1200	~2-3gpm		90gal	77.1	
CART	1215	~3-4		90gal		
STOP	1300	~3-4		150gal	24.1	
START	1315	~3-4		150gal		
TOP	1400	~3-4		300gal	17.9	Good recharge

Volume of Water Removed from Well (gal): 300 gal

Time Complete Development: 1400

Static Water Level After Development (ft): 27.11 After 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 10/30/06

Completed By: JG

Well Name: RP-~~23~~26-125

Well Development Method: surge and purge via air lift

Contractor Name: AMEC

Static Water Level Before Development (ft): 26.76

Depth of Well (toc): 125

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0730

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

	Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
START	0730	2-5	N	Ø	OR	OK recharge
STOP	0800	~2		60gal	78.3	almost dry
START	0900	~2		60gal	69.4	
STOP	0940	~2		140gal	28.4	almost dry
START	0950	~2		140gal	—	
STOP	1050	~2		260gal	11.4	almost dry

Volume of Water Removed from Well (gal): 260gal

Time Complete Development: 1050

Static Water Level After Development (ft): 57.20 after 10min
29.58 After 40min
27.35 After 120min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/15/06

Completed By: JG

Well Name: RP-24-S30

Well Development Method: surge and purge via Air Lift.

Contractor Name: AMEC

Static Water Level Before Development (ft): 25.15

Depth of Well (toc): 35.5

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development:

Sediment in Well Bottom (in): Start: 35.5 Finish: 36.0

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
	~0.5		<.5 gal		Dry immediately
	~0-5		<1 gal		" "
	~0-5		<2 gal		Hand bailed dry 1mm.

Volume of Water Removed from Well (gal): ~8 gal

Time Complete Development: 1730

Static Water Level After Development (ft): Dry – 30'

After 1st rev. water recharge was very slow. After 2 hrs water lvl was @ ~38'. Dev. again and surged and well went immediately dry. chkd water lvl @ 1700 - but was still dry @ ~30'. Hand bailed remainder

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/15/04

Completed By: [illegible]

Well Name: RP-24-A60

Well Development Method: Surge and purge via air lift

Contractor Name: AMEC

Static Water Level Before Development (ft): 26.59

Depth of Well (toc): 60.5

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1145

Sediment in Well Bottom (in): Start: Finish:

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1145	~2	N	Ø	OR	slow recharge
1230 Stop			50gal	75.4	Mostly dry.
1300	~1-2		50gal		
1500	~1-2gpm		150gal	29.4	slow recharge

Volume of Water Removed from Well (gal):

Time Complete Development:

Static Water Level After Development (ft):

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/15/04

Completed By: JG

Well Name: RP-24-73

Well Development Method: Surge and Purge via Air Lift

Contractor Name: AMEC

Static Water Level Before Development (ft): 26.71

Depth of Well (toc): 83.0

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 1030

Sediment in Well Bottom (in): Start: 83.0 Finish: 84.0

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
1030	2 gpm	N	0	316	Good recharge
1130	~3 gpm		180+ gal	39.5	"
1145	~3 gpm		225 gal	21.5	"

Volume of Water Removed from Well (gal): 225 gal

Time Complete Development: 1145

Static Water Level After Development (ft): 26.84 After 5 min
26.46 After 10 min

Notes:

amec

WELL DEVELOPMENT LOG

Project Name: **RP - Stage 2 SCE**

Project Number: 061M107030 Phase 69

Date: 11/15/02

Completed By: SG

Well Name: RP 24-85

Well Development Method: Air Lift w/ surge and purge

Contractor Name: AMEC

Static Water Level Before Development (ft): 26.55

Depth of Well (toc): 73.8 IN T
73.2 FIN

Inside Diameter (in): 2"

Volume of Water in Filter Pack and Well (gal):

Time Start Development: 0900

Sediment in Well Bottom (in): Start: 12 Finish: 0

Time Start Development:

Time	Pumping Rate	Surveyed (Y/N)	Total Volume	Turbidity (NTU)	Notes
0900	22 gpm	N	0	OR	Good recharge
0930	22 gpm		260 gal	32.7	
1000	22.5 gpm		140 gal	21.7	
1030	22.5 gpm		215 gal	14.6	

Volume of Water Removed from Well (gal): 215

Time Complete Development: 1030

Static Water Level After Development (ft): 28.50 After 5 MIN
26.39 After 30 min

Notes:

APPENDIX A-3

Groundwater Sampling Field Forms

Monitoring Well Cluster	**Screened Interval** (feet bgs)
MW-03	14.5-24.8; 55-60; 75-80; 131.5-136.5; 136-141
RP-06	24.5-29.5; 81-86; 90-95; 100-105
RP-20	10-25; 87-97; 105-110
RP-21	13-28; 115-125; 145-150
RP-22	14-29; 65-75; 146-151
RP-23	15-30; 80-85; 95-100; 120-125
RP-24	15-30; 55-60; 68-73; 80-85

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID MW-03-S

Field Personnel: B. McGillivray / E. Sells — Date: 11/15/06

Weather Conditions: Overcast — Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/15/06
Date/Time of Measurement: 11/15/06 1230	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 14.01'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE
Fe²⁺ TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: MW-03-S

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1234	12.31	1037	2.67	6.44	-58.3	14.04	0.5L
1239	11.79	1194	0.75	6.38	-90.7	14.06	2.5L
1247	11.81	1119	0.37	6.37	-96.8	14.07	6.5L
1252	11.88	1100	0.37	6.36	-98.8	14.07	9.0L
1257	11.81	1097	0.32	6.36	-100.7	14.07	11.5L

Fe 2+ (mg/L): 5.1 Tubidity (NTUs): 3.27 Total Purged: 11.5 L

Purge Pumping Rate (approx. L/m): 500 ml/MIN Approx. Pump/Intake Depth: ~27'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / OV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / OV Pump / Other =

Decontamination Method: ~~Sc~~ DEDICATED PUMP Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/15/06 9:00

SAMPLING INFORMATION / DATA

Date Sampled: 11/15/06 Time Sampled: 1258

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1037-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGILLIVRAY Sampler Signature: B. McGillivray Date Signed: 11/15/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID MW-03I

Field Personnel: B. McGillicuddy / E. Sells — Date: 11/16/06

Weather Conditions: MOSTLY CLDY — Approx. Air Temp (F): 45

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/16/06
Date/Time of Measurement: 11/16/06 / 1030	Depth to Water Measuring Technique: SOLINST
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product:
Depth to Water Level (TOC - ft.): 20.35	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:	
Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO MOXIN SAMPLE

PH TEST MEASURED PRIOR TO METALS SAMPLE

FINISH DTW: 22.81'

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: MW-03 I

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1038	11.89	1759	5.25	6.91	-73.3	20.68	0.91
1043	11.55	1732	0.83	6.68	-91.5	20.83	1
1048	11.47	1688	0.70	6.65	-97.0	21.38	2
1056	11.78	1658	0.34	6.64	-102.5	21.77	3.6
1101	11.72	1658	0.31	6.65	-104.7	22.04	4.6
1106	11.62	1653	0.28	6.65	-105.7	22.38	5.6

Fe 2+ (mg/L): 3.5 Tubidity (NTUs): 4.72 Total Purged: 5.6L

Purge Pumping Rate (approx. L/m): 200ml/min Approx. Pump/Intake Depth: ~58.5

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Dedicated Pump Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/16/06 8:00

SAMPLING INFORMATION / DATA

Date Sampled: 11/16/06 Time Sampled: 1107

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1042-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS / Fed Ex / USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillicuddy Sampler Signature: B. McG Date Signed: 11/16/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID MW-03-81

Field Personnel: B McGillicuddy / E. Seale — Date: 11/16/06

Weather Conditions: Partly cloudy — Approx. Air Temp (F): 45

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/16/06
Date/Time of Measurement: 11/16/06 / 9:16	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): ~~16.41~~ 16.41	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 14.41'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) Other:

Casing Condition:	(OK) / NA / Needs Repairs / Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs / Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs / Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE
Fe+ TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: MW 03-81

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
918	10.38	700	5.27	6.83	-53.7	20.41	0.0
923	10.65	778	3.59	6.80	-74.5	20.81	.5
928	10.84	760	2.78	6.75	-84.6	21.19	1
933	11.08	753	1.81	6.75	-106.1	21.56	1.5
938	11.21	757	0.87	6.74	-116.6	22.00	2
943	11.27	755	0.90	6.74	-119.3	22.37	2.5
946	11.34	753	0.88	6.74	-116.7	22.62	2.8

Fe 2+ (mg/L): 4.6 Tubidity (NTUs): 24.6 Total Purged: 2.8 L

Purge Pumping Rate (approx. L/m): 100 ml/min Approx. Pump/Intake Depth: ~ 78.5'

Well Yield: High / Moderate / (Low)

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Decontamination Method: Dedicated Pump Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/16/06 800

SAMPLING INFORMATION / DATA

Date Sampled: 11/16/06 Time Sampled: 947

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank (Trip Blank)

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1041-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1041-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/(Fed Ex)/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillivray Sampler Signature: B McG Date Signed: 11/16/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID MW-03-136.5

Field Personnel: B. McGillewdat / E. Solis Date: 11/17/06

Weather Conditions: Foggy Approx. Air Temp (F): 45

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/17/06
Date/Time of Measurement: 11/17/06 1905	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 1	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 12.85'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLES

Fe^{+} TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: MW-03-136.5

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
904	10.78	400	0.32	6.90	210.1	18.86	0.5L
909	11.72	901	0.82	6.89	-15.7	18.86	2.5L
914	11.82	904	0.42	6.96	-60.7	18.86	5L
919	11.85	915	0.34	6.98	-73.0	18.86	7.5L
929	11.90	914	0.37	7.00	-85.4	18.86	12.5L
934	11.91	914	0.33	7.00	-87.4	18.86	15L

Fe 2+ (mg/L): 2.5 Tubidity (NTUs): 0.39 Total Purged: 15 L

Purge Pumping Rate (approx. L/m): 500 ml/min Approx. Pump/Intake Depth: 134.5

Well Yield: (High) / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (QV Pump) / Other =

Decontamination Method: SOAP/METH./DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/17/06 800

SAMPLING INFORMATION / DATA

Date Sampled: 11/17/06 Time Sampled: 935

QA/QC Sample (circle one): (DUP) Lab MS/MSD Equip Blank (Trip Blank)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1043-01	2	1 L	G	None	STL-Burlington	1043-05	Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1043-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGuire Sampler Signature: B. McGuire Date Signed: 11/17/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID MW-03-141

Field Personnel: B. McGillivray / E. Sells Date: 11/17/06

Weather Conditions: Foggy Approx. Air Temp (F): 45

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0

PID Calibration Standard: isobutylene 100 ppm

PID Calibration Date: 11/17/06

Date/Time of Measurement: 11/17/06 1944

Depth to Water Measuring Technique: Solinst

Depth Well Bottom (TOC - ft.):

Detection Method of Free Product: visual

Depth to Water Level (TOC - ft.): 18.91'

Depth to Free Product (TOC - ft.):

Calculated Column Height (ft.):

Casing Diameter (in.):

Quantity of Free Product Collected (gal.):

Conversions Factors (casing dia. = gallons/linear ft.) Circle One

0.75" = 0.02	1" = 0.04	2" = 0.17	3" = 0.37
4" = 0.66	6" = 1.47	8" = 2.61	12" = 5.88

Three Well Purge Volumes (gallons) = 3 x _____ = _____

Method of Collecting Free Product:

Obsevation of sheen or LNAPL:

Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition:	OK / NA / Needs Repairs / Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs / Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs / Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLES

Fe^{+} TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: MW-03-141

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
948	10.37	545	2.14	7.36	-64.2	14.02	[illegible]
953	11.55	483	0.36	7.26	-81.4	14.04	2
958	11.78	448	0.25	7.25	-84.6	14.04	4
1003	11.79	445	0.23	7.24	-91.9	14.04	6
1010	11.83	491	0.25	7.20	-93.8	14.04	8.8
1015	11.78	520	0.24	7.18	-94.8	14.04	10.8
1020	11.85	544	0.21	7.16	-96.6	14.05	12.8
1025	11.85	560	0.20	7.15	-97.9	14.05	14.8
1030	11.85	567	0.19	7.15	-99.3	14.05	16.8
1035	11.80	575	0.17	7.15	-100.4	14.06	18.8

Fe 2+ (mg/L): 2.0 Tubidity (NTUs): 1.53 Total Purged: 18.8 L

Purge Pumping Rate (approx. L/m): 400 mL/min Approx. Pump/Intake Depth: 138.5

Well Yield: (High) / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (QV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (QV Pump) / Other =

Decontamination Method: Soap / meth. / DI Rinse Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/17/06 800

SAMPLING INFORMATION / DATA

Date Sampled: 11/17/06 Time Sampled: 1035

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1044-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/(Fed Ex)/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGILLIVRAY Sampler Signature: B. McGillivray Date Signed: 11/17/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-0630

Field Personnel: B. McGillicuddy / M. Linquist — Date: 11/27/06

Weather Conditions: Overcast — Approx. Air Temp (F): 40

INITIAL WELL DATA

PID (ppm) Background: 0 In-well Casing: 0.1	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/27/06
Date/Time of Measurement: 11/27/06 / 917	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 17.76'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE

Fe^+ TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-06-30

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
922	7.17	344	2.05	6.61	-25.7	17.77	0.66
927	6.95	343	0.63	6.58	-60.8	18.13	1
932	10.68	341	0.74	6.60	-80.6	18.41	2
938	10.88	340	1.65	6.64	-94.5	18.47	3
943	10.74	340	0.82	6.65	-99.6	18.54	4
948	10.94	341	0.47	6.66	-103.4	18.54	5
953	10.91	343	0.42	6.67	-105.6	18.54	6

Fe 2+ (mg/L): 5.4 Tubidity (NTUs): 342 Total Purged: 6L

Purge Pumping Rate (approx. L/m): 200 Approx. Pump/Intake Depth: ~27.5

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Soap/Metal/DI Rinse Water Disposal: To WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/27/06 830

SAMPLING INFORMATION / DATA

Date Sampled: 11/27/06 Time Sampled: 954

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1050-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1050-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Red Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillicuddy Sampler Signature: B. McGillicuddy Date Signed: 11/27/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-06-87

Field Personnel: B. McGillicuddy / M. Lindquist — Date: 11/27/06

Weather Conditions: Overcast — Approx. Air Temp (F): 40

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.2	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/27/06
Date/Time of Measurement: 11/27/06 / 954	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 24.81'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE

FE+ TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-06-87

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1001	10.60	2451	2.25	6.67	-73.4	24.81	0.25
1006	11.66	2767	0.78	6.55	-73.5	24.82	2.5
1011	11.76	2999	0.43	6.62	-78.7	24.82	5
1016	11.79	3124	0.46	6.62	-77.5	24.82	7.5
1021	11.81	3176	0.53	6.62	-76.4	24.82	10
1026	11.87	3186	0.51	6.61	-75.8	24.82	12.5
1032	11.80	3187	0.44	6.61	-74.9	24.82	15
1037	11.76	3185	0.37	6.60	-73.7	24.82	17.5

Fe 2+ (mg/L): 3.6 Tubidity (NTUs): 0.43 Total Purged: 17.5L

Purge Pumping Rate (approx. L/m): <200 Approx. Pump/Intake Depth: ~24.5'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: SOAP / METH. / DI RINSE Water Disposal: TO WTP.

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/27/06 830

SAMPLING INFORMATION / DATA

Date Sampled: 11/27/06 Time Sampled: 1037

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1051-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillicuddy Sampler Signature: B. McGillicuddy Date Signed: 11/27/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-06 95

Field Personnel: B. McCullough / M. Lindquist Date: 11/08/06

Weather Conditions: Overcast Approx. Air Temp (F): 45

INITIAL WELL DATA

PID (ppm) Background: 0 In-well Casing: 0.2	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/08/06
Date/Time of Measurement: 11/08/06 / 1112	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 24.79'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE

Fe^+ TEST MEASURED PRIOR TO DIOXIN SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-06-95

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1127	10.49	1865	4.07	7.02	-47.7	24.20	2.5
1132	11.84	3171	0.46	6.75	-51.2	24.70	2.5
1137	11.97	3211	0.36	6.75	-54.7	24.80	5
1142	11.93	3217	0.31	6.75	-55.5	24.80	7.5
1147	11.91	3226	0.29	6.74	-57.2	24.80	10
1152	12.07	3235	0.31	6.74	-58.8	24.80	12.5
1157	12.13	3241	0.30	6.74	-59.7	24.80	15
1202	12.11	3250	0.27	6.74	-61.4	24.80	17.5

Fe 2+ (mg/L): 1.1 Tubidity (NTUs): 2.48 Total Purged: 17.5L

Purge Pumping Rate (approx. L/m): 500ml/min Approx. Pump/Intake Depth: ~92.5

Well Yield: High / (Moderate) / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (OV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (OV Pump) / Other =

Decontamination Method: SOAP/METH./DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/28/06 830

SAMPLING INFORMATION / DATA

Date Sampled: 11/28/06 Time Sampled: 1203

QA/QC Sample (circle one): (DUP) Lab MS/MSD Equip Blank (Trip Blank)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1052-01	2	1 L	G	None	STL-Burlington	1052-05	Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1052-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/(Fed Ex)/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillivray Sampler Signature: B. McGillivray Date Signed: 11/28/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-06-005

Field Personnel: B McGillivray / M. Lindquist Date: 11/28/06

Weather Conditions: Overcast Approx. Air Temp (F): 45

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/28/06
Date/Time of Measurement: 11/28/06 1915	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 25.02'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:	
Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE

Fe* TEST MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: EP-06-105

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
926	9.42	1798	2.57	6.61	168.8	25.04	WELL
931	11.61	2610	0.68	6.53	162.5	25.04	2
936	11.89	2684	1.56	6.55	146.9	25.04	4
941	11.97	2734	0.62	6.56	149.4	25.04	6
946	12.01	2743	0.49	6.57	117.2	25.04	8
951	12.06	2774	0.47	6.58	107.9	25.04	10
956	12.09	2835	0.43	6.59	97.9	25.04	12
1001	12.02	2871	0.40	6.60	92.8	25.04	14
1006	12.02	2912	0.34	6.60	86.0	25.04	16
1011	12.09	2948	0.31	6.60	81.1	25.04	18

Fe 2+ (mg/L): 0.5 Tubidity (NTUs): 12 Total Purged: 18

Purge Pumping Rate (approx. L/m): 400 ml/min Approx. Pump/Intake Depth: ~100'

Well Yield: High / (Moderate) / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Decontamination Method: SOAP/METH./DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: [illegible] 6 ESP

SAMPLING INFORMATION / DATA

Date Sampled: 11/28/06 Time Sampled: 1012

QA/QC Sample (circle one): DUP Lab MS/MSD (Equip Blank) (Trip Blank)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1053 01	2	1 L	G	None	STL-Burlington	1053-04	Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1053-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/(Fed Ex)/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillicuddy Sampler Signature: B. McG Date Signed: 11/28/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-20-25

Field Personnel: JG Date: 11/10/06

Weather Conditions: RAIN EVENT Approx. Air Temp (F): ~55

INITIAL WELL DATA

PID (ppm) Background: 0.4 In-well Casing: 0.2	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/10/06
Date/Time of Measurement: 11/10/06 / 1305	Depth to Water Measuring Technique: Solinest
Depth Well Bottom (TOC - ft.): 25	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 16.44	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): ND	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.): 8.56	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ =
Quantity of Free Product Collected (gal.): NA	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: ND	Observation of DNAPL: ND

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-20-25

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1305	11.85	939	2.05	6.57	-100.9	16.44	0
1315	11.45	900	1.17	6.51	-100.5	16.44	3L
1320	12.40	893	0.51	6.56	-109.6	16.44	4.5
1325	12.96	870	0.30	6.56	-115.2	16.44	6.0
1330	13.00	878	0.26	6.62	-127.1	16.44	7.5
1335	13.33	879	0.19	6.65	-135.1	16.44	9.0
1340	13.03	876	0.18	6.67	-137.1	16.44	10.5
1345	13.05	875	0.15	6.69	-138.7	16.44	12.0
1350	13.07	875	0.15	6.69	-138.0	16.44	13.5

Fe 2+ (mg/L): 2.2 Tubidity (NTUs): 30.0 NTU ~~5.64~~ Total Purged: 13.5

Purge Pumping Rate (approx. L/m): 300mL/MIN Approx. Pump/Intake Depth: 22'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: ALCONOX WASH / METH DI RINSE Water Disposal:

Instrument Type & Number: #4 YSI Instrument Calibration Date & Time: 11/10/06 0750

SAMPLING INFORMATION / DATA

Date Sampled: 11/10/06 Time Sampled: 13.30

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1032-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): JASON GARDNER Sampler Signature: Date Signed: 11/10/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-2C-07

Field Personnel: JRW/JR Date: 11/10/06

Weather Conditions: RAIN CLOUDY Approx. Air Temp (F): ~50°F

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.3	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/10/06
Date/Time of Measurement: 11/10/06 /	Depth to Water Measuring Technique: Solinest
Depth Well Bottom (TOC - ft.): 95'	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 24.9'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): ND	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): NA	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: ND	Observation of DNAPL: ND

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition:	OK / NA / Needs Repairs / Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs / Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs / Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-20-97

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1210	10.56	1447	5.67	6.67	+49.7	24.91	0
1215	11.53	1465	0.60	6.60	+15.7	24.86	1.5L
1220	11.50	1454	1.11	6.56	-4.3	24.91	3.0L
1225	11.51	1420	0.79	6.60	-11.3	24.93	4.5L
1230	11.74	1428	0.52	6.50	-11.6	24.93	6.0
1235	11.74	1431	0.51	6.52	-11.1	24.92	7.5
1240	11.72	1430	0.46	6.52	-9.5	24.92	9.0
1245	11.73	1431	0.40	6.51	-8.1	24.91	10.5
1250	11.74	1436	0.39	6.51	-7.1	24.90	12.0
1300	11.73	1435	0.39	6.51	-7.8	24.91	15.0

Fe 2+ (mg/L): 1.0 mg/L Tubidity (NTUs): 8.64 Total Purged: 15.0

Purge Pumping Rate (approx. L/m): 300 ml/L Approx. Pump/Intake Depth:

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Alconox wash / rinse DI H2O Water Disposal: WTP

Instrument Type & Number: #4 YSI Instrument Calibration Date & Time: 11/10/06 0730

SAMPLING INFORMATION / DATA

Date Sampled: 11/10/06 Time Sampled: 13:00

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1031-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): JASON CARONER Sampler Signature: Date Signed: 10/11/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-20-110

Field Personnel: JG Date: 11/13/06

Weather Conditions: Rain Overcast Approx. Air Temp (F): ~50

INITIAL WELL DATA

PID (ppm) Background: Ø In-well Casing: 0.2	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date:
Date/Time of Measurement: 11/13/06 / 1100	Depth to Water Measuring Technique: Solinest
Depth Well Bottom (TOC - ft.): 110.0'	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 34.10	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): ND	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ =
Quantity of Free Product Collected (gal.): NA	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: ND	Observation of DNAPL: ND

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) Other:	
Casing Condition: (OK) / NA / Needs Repairs / Repaired	Lock Condition: (OK) / NA / Needs Repairs / Replaced
Cap Condition: (OK) / NA / Needs Repairs / Repaired	Inner Casing Condition: (OK) / NA / Needs Repairs / Repaired
Paint Condition: (OK) / NA / Needs Repairs / Repaired	Monument Condition: (OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-20-110

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1125	11.31	600	1.64	7.22	+9.7	24.10	0
1130	11.23	1096	0.71	7.24	-122.8	24.23	2L
1135	11.79	1304	0.58	7.36	-159.2	24.19	3L
1140	11.75	1315	0.57	7.37	-164.2	24.17	4L
1145	11.69	1297	0.46	7.35	-164.3	24.13	5L
1150	11.64	1303	0.40	7.33	-164.2	24.12	6L
1155	11.65	1308	0.39	7.33	-163.8	24.13	7L
1200	11.66	1305	0.38	7.32	-163.5	24.13	8L

Fe 2+ (mg/L): 1.0 Tubidity (NTUs): 3.2 Total Purged: 8L

Purge Pumping Rate (approx. L/m): 200ml/min Approx. Pump/Intake Depth: 107.5

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Alconox wash / DI-Meth rinse Water Disposal: to TP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/13/06

SAMPLING INFORMATION / DATA

Date Sampled: 11/13/06 Time Sampled: 1200

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1033-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1033-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): JASON WAGONER Sampler Signature: Date Signed: 11/13/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP 21 - 31 ~~RP 28~~

Field Personnel: B. McGillicuddy / E. Sells — Date: 11/14/06

Weather Conditions: Sunny — Approx. Air Temp (F): 50's

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/14/06
Date/Time of Measurement: 11/14/06 / 1035	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 31.1'	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 16.17'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASUREMENT PERFORMED PRIOR TO DIOXIN SAMPLE
Fe+ TEST PERFORMED PRIOR TO METAL SAMPLE

Sampling Information continued on Side 2

amec

AMEC Earth & Environmental, Inc.
GROUNDWATER
SAMPLING FIELD FORM

Project Name: Stage 2 SCE GW Sampling
Project #: 0-61M-10703-0 P 69
Monitoring Well ID: RP-21-3 / RPH 28

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1101	11.50	360	3.67	6.77	-70.1	16.18	0.2L
1112	11.94	340	0.38	6.67	-105.3	16.21	4L
1123	12.02	338	0.24	6.61	-108.5	16.21	9.5L
1133	12.06	333	0.19	6.60	-107.8	16.21	14.5L
1143	12.09	331	0.18	6.59	-108.2	16.21	19.5L

Fe 2+ (mg/L): 3.4 Tubidity (NTUs): 3.07 Total Purged: 19.5L
Purge Pumping Rate (approx. L/m): 500 ml/min Approx. Pump/Intake Depth: ~28.5
Well Yield: High / Moderate / Low
Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =
Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =
Decontamination Method: soap/meth. / DI Rinse Water Disposal: To WTP
Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/14/06 900

SAMPLING INFORMATION / DATA

Date Sampled: 11/14/06 Time Sampled: 1144
QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1035-01	2	1 L	G	None	STL-Burlington	1035-01	Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO
Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.
Sampler (Print): B. McGillivray Sampler Signature: B. McGillivray Date Signed: 11/14/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-21-13B

Field Personnel: B. McGillicuddy / S. Sells Date: 11/14/06

Weather Conditions: Sunny Approx. Air Temp (F): 50°F

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/14/06
Date/Time of Measurement: 11/14/06 / 930	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 120.1'	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 22.23'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) Other:

Casing Condition:	(OK) / NA / Needs Repairs / Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs / Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs / Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY COLLECTED PRIOR TO DIOXIN SAMPLES
FE TEST PERFORMED PRIOR TO METALS SAMPLE
FINISHED DTW 25.82' TOC

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP 71-17B

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
945	9.33	706	1.55	6.65	-10.8	23.35'	0.0L
955	9.80	811	0.94	6.65	-90.4	~~24.40~~ 23.16'	1.2L
959	9.94	829	0.69	6.65	-95.9	~~24.59~~ 23.89	1.8L
1009	10.10	833	0.40	6.65	-101.4	~~25.15~~ 24.15	3.0L
1014	10.15	831	0.35	6.65	-103.2	24.36	3.6L
1019	10.26	828	0.32	6.65	-102.5	24.52	4.2L

Fe 2+ (mg/L): 4.4 mg/L Tubidity (NTUs): 42.0 Total Purged: 4.2L

Purge Pumping Rate (approx. L/m): 120ml/min Approx. Pump/Intake Depth: ~~~126.5~~ ~133.5

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Soap/mnth./DI Rinse Water Disposal: TO WTP

Instrument Type & Number: YSI Instrument Calibration Date & Time: 900 11/14/06

SAMPLING INFORMATION / DATA

Date Sampled: 11/14/06 Time Sampled: 1020

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1034-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1034-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	~~250 mL~~ 1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): Courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGILLROAT Sampler Signature: B McG Date Signed: 11/14/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-71-KO

Field Personnel: B. McGillicuddy / E. Sullo Date: 11/15/06

Weather Conditions: OVERCAST Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/15/06
Date/Time of Measurement: 11/15/06 / 930	Depth to Water Measuring Technique: SOLINST
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: VISUAL
Depth to Water Level (TOC - ft.): 21.31'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:	
Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE

Fe^{+} MEASURED PRIOR TO METALS SAMPLE

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-71-150

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1016	13.27	350	6.63	6.99	209.0	21.36	1.2L
1024	12.00	657	4.19	6.91	92.8	21.36	3.6L
1030	11.98	686	0.77	6.94	22.6	21.37	5.3L
1035	12.01	693	0.38	6.95	2.8	21.37	7.5L
1040	12.02	693	0.41	6.96	-7.0	21.37	9.7
10.45	12.04	692	0.42	6.96	-11.0	21.37	11.9
1050	12.03	691	0.36	6.96	-13.8	21.37	14.1

Fe 2+ (mg/L): 0.5 Tubidity (NTUs): 5.17 Total Purged: 14.1L

Purge Pumping Rate (approx. L/m): 450 ml/min Approx. Pump/Intake Depth: ~147.5

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: SOAP/METH/DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/15/06 900

SAMPLING INFORMATION / DATA

Date Sampled: 11/15/06 Time Sampled: 1057

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1036-01	2	1 L	G	None	STL-Burlington	1036-02	Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1036-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillivray Sampler Signature: B. McGillivray Date Signed: 11/15/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP 22-S 29 ~~OH~~

Field Personnel: JG Date: 11/07/06

Weather Conditions: RAIN Approx. Air Temp (F): ~65

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.5	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/7/06
Date/Time of Measurement: 11/7/06 / 1000	Depth to Water Measuring Technique: solinest
Depth Well Bottom (TOC - ft.): 29.10	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 15.55	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): ND	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.): 13.55	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): NA	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: ND	Observation of DNAPL: ND

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) Other:

Casing Condition:	(OK) / NA / Needs Repairs / Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs / Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs / Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Pump set @ 22.0

Turb - 51.0

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-22-8 (DH 29)

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1045	15.64	1473	0.49	6.21	-94.1	15.55	0
1050	15.43	1471	0.44	6.21	-95.6	15.55	2L
1055	15.35	1465	0.33	6.18	-93.4	15.55	4L
1100	15.31	1458	0.28	6.18	-91.9	15.55	6L
1105	15.26	1457	0.28	6.18	-93.4	15.55	8L
1110	15.25	1457	0.24	6.18	-91.6	15.55	10L
1115	15.25	1457	0.24	6.18	-89.4	15.55	12L

Fe 2+ (mg/L): 3.6 Tubidity (NTUs): ~~3~~ 57.0 Total Purged: 12

Purge Pumping Rate (approx. L/m): 400 mL Approx. Pump/Intake Depth: 22'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: ALCONOX WASH MeOH rinse Water Disposal: WTS

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/7/06 0830

SAMPLING INFORMATION / DATA

Date Sampled: 11/7/06 Time Sampled: 1115

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1024-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1024-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	4	40 mL	G	H_2SO_4	STL-Burlington		TOC/DOC
	1	500 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	500 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): JASON GARDNER Sampler Signature: Date Signed: 11/7/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-22-75

Field Personnel: J. Fenstio, J. Rook Date : 11/7/06

Weather Conditions: Cloudy, Rain! Approx. Air Temp (F): 55°F

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.2	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date:
Date/Time of Measurement: 11/7/06 1300	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: NA
Depth to Water Level (TOC - ft.): 23.10	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): None	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.): —	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): None	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: NA	Observation of DNAPL: NA

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:	
Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-22-75

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1205	15.54	631	2.00	6.56	-81.4	23.22	0
1210	14.45	726	0.60	6.58	-189.9	23.46	2L
1215	14.41	721	0.40	6.48	-113.0	23.46	4L
1220	14.36	711	0.29	6.49	-116.0	23.46	8L
1225	14.24	714	0.28	6.49	-119.0	23.46	10L
1230	14.23	718	0.23	6.49	-119.0	23.46	12L
1235	14.18	723	0.24	6.50	-122.7	23.46	14L

Fe 2+ (mg/L): 5.0 ppm Tubidity (NTUs): 6.29 Total Purged: 14L

Purge Pumping Rate (approx. L/m): 200 ml/min Approx. Pump/Intake Depth:

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / ~~DV~~ Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: SOAP/METH./DI RINSE Water Disposal:

Instrument Type & Number: YSI Instrument Calibration Date & Time: 11/7/06 880

SAMPLING INFORMATION / DATA

Date Sampled: 11/7/06 Time Sampled: 1240

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1025-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	4	40 mL	G	H_2SO_4	STL-Burlington		TOC/DOC
	1	500 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	500 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quaiity		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): Sampler Signature: Date Signed:

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-22-151

Field Personnel: JG NF — Date: 11/8/06

Weather Conditions: Partly clear some rain — Approx. Air Temp (F): ~50

INITIAL WELL DATA

PID (ppm) Background: 5.0 In-well Casing: 6.3	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: 11/8/06
Date/Time of Measurement: 11/8/06 / 0845	Depth to Water Measuring Technique: solinist
Depth Well Bottom (TOC - ft.): 151	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 26.74	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): NS	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): NA	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: ND	Observation of DNAPL: ND

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel (PVC) Other:

Casing Condition:	(OK) / NA / Needs Repairs / Repaired	Lock Condition:	(OK) / NA / Needs Repairs / Replaced
Cap Condition:	(OK) / NA / Needs Repairs / Repaired	Inner Casing Condition:	(OK) / NA / Needs Repairs / Repaired
Paint Condition:	(OK) / NA / Needs Repairs / Repaired	Monument Condition:	(OK) / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

5.35 NTU taken w/ turbidity w/ Dioxin sample

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-32-155

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
0845	11.38	5.23	8.25	7.35	+16.2	28.31	0
0850	13.08	6.82	0.82	6.93	-39.7	23.26	0.8L
0855	13.11	705	0.48	6.91	-48.3	26.74	1.6L
0901	13.09	706	0.51	6.91	-51.3	26.84	2.4L
0905	13.28	708	0.56	6.90	-52.6	26.95	3.2L
0910	13.39	711	0.50	6.90	-52.9	26.71	3.9L
0915	13.29	715	0.47	6.96	-53.2	26.55	4.6L
0920	13.26	716	0.55	6.89	-53.2	26.36	5.3
0925	13.30	717	0.58	6.89	-49.0	25.89	6.0
0930	13.31	717	0.60	6.90	-48.7	25.36	6.7
0935	13.32	718	0.58	6.90	-48.2	25.22	7.4
0940	13.30	718	0.56	6.90	-48.1	25.27	8.1
0945	13.29	719	0.57	6.90	-47.8	25.23	8.8L

Fe 2+ (mg/L): 1.8 Tubidity (NTUs): 5.35 Total Purged: 8.8L

Purge Pumping Rate (approx. L/m): 140mL - 160 mL/MIN Approx. Pump/Intake Depth: 146'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: 12% ALCONOX WASH W/DI RINSE Water Disposal: WTP

Instrument Type & Number: #4 YSI Instrument Calibration Date & Time: 11/8/06 0730

SAMPLING INFORMATION / DATA

Date Sampled: 11/8/06 Time Sampled: 0945

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1026-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1026-3	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): JASON GARDNER Sampler Signature: Date Signed: 11/8/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-33-30

Field Personnel: JG / JR Date: 11/8/06

Weather Conditions: RAIN OVERCAST Approx. Air Temp (F): ~50

INITIAL WELL DATA

PID (ppm) Background: 0.6 In-well Casing: 0.4	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/8/06
Date/Time of Measurement: 11/8/06 / 1300	Depth to Water Measuring Technique: SOLINIST
Depth Well Bottom (TOC - ft.): 38	Detection Method of Free Product: VISUAL
Depth to Water Level (TOC - ft.): 15.87	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): ND	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.): 14.13	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): ND	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: ND	Observation of DNAPL: ND

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:	
Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-23-30

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP -61.9 mV	DTW (feet bgs)	Volume Purged (liters)
1355	13.25	1287	2.71	6.17	[illegible]	15.87	0
1400	13.42	1310	0.94	6.14	-66.3	15.96	1.5 L
1405	13.03	1289	0.59	6.12	-66.5	15.92	3.0 L
1410	13.27	1296	0.52	6.13	-67.7	15.93	4.5 L
1415	13.76	1293	0.40	6.14	-70.1	15.93	6.0 L
1420	13.89	1285	0.34	6.17	-74.0	15.92	7.5 L
1425	14.07	1258	0.32	6.22	-80.4	15.92	9.0 L
1430	14.15	1248	0.29	6.22	-80.2	15.93	10.5 L
1435	14.15	1250	0.28	6.22	-80.5	15.93	12.0 L

Fe 2+ (mg/L): 3.8 Tubidity (NTUs): 35.1 Total Purged: 12.0 L

Purge Pumping Rate (approx. L/m): 300mL/min Approx. Pump/Intake Depth:

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Alconox Wash w/ DI Meth one Water Disposal: WTP

Instrument Type & Number: H4 YSI Instrument Calibration Date & Time: 11/8/06 0730

SAMPLING INFORMATION / DATA

Date Sampled: 11/8/06 Time Sampled: 1435

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
102701	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): JASON GARDNER Sampler Signature: [signature] Date Signed: 11/8/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-23-85

Field Personnel: Joe Kuck Date: 11/9/06

Weather Conditions: Sunny, Partly Cloudy light NW wind Approx. Air Temp (F): 50°

INITIAL WELL DATA

PID (ppm) Background: Ø In-well Casing: Ø	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/9/06
Date/Time of Measurement: 11/9/06 / 830	Depth to Water Measuring Technique: solinist
Depth Well Bottom (TOC - ft.): 85	Detection Method of Free Product: NA
Depth to Water Level (TOC - ft.): 33.25	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): NA	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): Ø	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: None	Observation of DNAPL: None

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Turbidity measured w/ dioxin collection

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-23-85

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
8:41	10.69	778	2.63	6.80	-102.8	22.55	1 l
8:48	10.75	803	1.64	6.84	-117.4	22.95	1.7 l
8:53	10.51	808	1.01	6.83	-122.7	22.98	2.2 l
8:58	10.71	812	0.75	6.83	-126.5	23.00	2.7 l
9:03	11.02	815	0.60	6.84	-131.4	23.02	3.2 l
9:08	11.16	815	0.57	6.84	-134.7	23.05	3.7 l
9:13	11.19	815	0.55	6.84	-135.5	23.07	4.2 l

Fe 2+ (mg/L): 4.2 Tubidity (NTUs): 3.25 Total Purged: 4.2 l

Purge Pumping Rate (approx. L/m): 0.100 l/min Approx. Pump/Intake Depth:

Well Yield: High / Moderate / Low very low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Methanol, Alconox, DI rinses Water Disposal: RP Treatment System

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/9/06 8:00

SAMPLING INFORMATION / DATA

Date Sampled: 11/9/06 Time Sampled: 9:15

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1638-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1638-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		~~Chloride/Sulfate~~/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	~~250 mL~~ 1 l	P	None	Test America	Chloride/Sulfate	Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): Joe Peck Sampler Signature: Date Signed: 11/9/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-23-100

Field Personnel: J. Le Rock — Date: 11/9/06

Weather Conditions: Sunny, PC, Light NW wind — Approx. Air Temp (F): 55°

INITIAL WELL DATA

PID (ppm) Background: Ø In-well Casing: Ø	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/9/06
Date/Time of Measurement: 11/9/06 / 12:00	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 100	Detection Method of Free Product: NA
Depth to Water Level (TOC - ft.): 22.10	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): NA	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x =
Quantity of Free Product Collected (gal.): Ø	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: None	Observation of DNAPL: None

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition:	OK / NA / Needs Repairs / Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs / Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs / Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Turbidity measured w/ diurn collection

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RR23-100

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
12:10	13.32	1541	0.41	6.92	-134.5	22.10	1l
12:15	13.30	1552	0.40	6.92	-136.2	22.10	3l
12:20	13.17	1640	0.31	6.94	-146.8	22.10	5l
12:25	13.21	1677	0.41	6.95	-150.6	22.10	7l
12:30	13.31	1680	0.32	6.96	-154.0	22.10	9l
12:35	13.36	1685	0.24	6.96	-155.6	22.10	11l

Fe 2+ (mg/L): 5.8 Tubidity (NTUs): 11.2 Total Purged: 11l

Purge Pumping Rate (approx. L/m): .4 l/min Approx. Pump/Intake Depth:

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Methanol, Alconox, DI rinses Water Disposal: RP Treatment System

Instrument Type & Number: YSI H4 Instrument Calibration Date & Time: 11/9/06 8:00

SAMPLING INFORMATION / DATA

Date Sampled: 11/9/06 Time Sampled: 1235

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	(size)	(type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1029-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): [illegible] Sampler Signature: [signature] Date Signed: 11/9/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-23-125

Field Personnel: ~~Joe Foote~~ Jason Gardner Date: ~~11/9/06~~ 11/10/06 ~40°F

Weather Conditions: ~~Sunny, Light wind~~ Rain overcast Approx. Air Temp (F): ~~60°~~

INITIAL WELL DATA

PID (ppm) Background: Ø In-well Casing: Ø	PID Calibration Standard: isobutylene 100 ppm
	PID Calibration Date: ~~11/9/06~~ 11/10/06
Date/Time of Measurement: ~~11/9/06 1515~~ 11/10/06 6:30	Depth to Water Measuring Technique: Solinist
Depth Well Bottom (TOC - ft.): 125	Detection Method of Free Product: NA
Depth to Water Level (TOC - ft.): 21.45	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.): NA	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.): 2"	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.): Ø	Method of Collecting Free Product: NA
Obsevation of sheen or LNAPL: None	Observation of DNAPL: None

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:	
Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-23-125

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
0830	8.94	2628	Bottle	6.70	+117.7	22.00	0
0835	11.60	2740	3.00	6.67	+122.0	22.25	0.7L
0840	11.79	2744	2.02	6.61	+116.4	22.27	1.4L
0845	11.95	2743	1.44	6.59	+105.0	22.24	2.1L
0850	11.94	2736	1.05	6.58	+102.7	22.23	2.8L
0900	12.01	2734	0.76	6.58	+95.3	22.20	3.5L
0910	11.97	2726	0.55	6.57	+95.2	22.29	4.2L
0915	12.04	2714	0.44	6.57	+73.6	22.30	4.9L
0920	12.04	2709	0.33	6.57	+61.3	22.30	5.6L
0925	12.04	2709	0.33	6.57	+60.5	22.29	6.3L
0930	12.04	2709	0.33	6.57	+59.5	22.29	7.0L

Fe 2+ (mg/L): Ø Tubidity (NTUs): 4.78 Total Purged: 7.0 L

Purge Pumping Rate (approx. L/m): 150 ml/min Approx. Pump/Intake Depth:

Well Yield: High / Moderate / (Low)

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Decontamination Method: Alconox wash / DI rinse Water Disposal: WTP

Instrument Type & Number: #4 YSI Instrument Calibration Date & Time: 11/10/06 0730

SAMPLING INFORMATION / DATA

Date Sampled: ~~11/9/06~~ 11/10/06 Time Sampled: 9:30

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank (Trip Blank)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1030-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1030-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	250 mL	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/(Fed Ex)/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): Sampler Signature: Date Signed:

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-24-30.5

Field Personnel: B. McGillicuddy | Date: 11/20/06

Weather Conditions: Sunny | Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/20/06
Date/Time of Measurement: 11/20/06 / 948	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 30.55'	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 25.67'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR DIOXIN SAMPLING

Fe^{+} TEST MEASURED PRIOR TO METALS SAMPLE

FINAL DTW: 28.18'

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-24-30.5

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1010	14.01	1143	1.64	6.49	-70.1	26.21	0.2L
1016	13.85	1131	0.54	6.48	-52.0	26.73	.9
1020	13.83	1103	0.46	6.46	-58.7	27.04	1.5
1025	13.86	1096	0.37	6.44	-62.8	27.36	2.3
1030	13.91	1113	0.32	6.44	-66.9	27.64	3.0
1035	13.95	1121	0.27	6.43	-70.7	27.92	3.8

Fe 2+ (mg/L): 3.6 Tubidity (NTUs): 20.7 Total Purged: 3.8L

Purge Pumping Rate (approx. L/m): 150 ml/min Approx. Pump/Intake Depth: ~30'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: — Water Disposal: To WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/20/06 830

SAMPLING INFORMATION / DATA

Date Sampled: 11/20/06 Time Sampled: 1036

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1046-01A	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1046-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS Fed Ex USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillicuddy Sampler Signature: B. McGillicuddy Date Signed: 11/20/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-24-30.5

Field Personnel: R. McGillicuddy / E. Sells Date: 11/21/06

Weather Conditions: Overcast / Rain Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0 In-well Casing: 0.1	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/21/06
Date/Time of Measurement: 11/21/06 / 855	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 25.57	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

Sampling Continued from 11/20/06

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: 2P-24-30.5

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
850	12.88	1226	1.10	6.40	-37.9	26.26'	1.2L
853	12.94	1215	0.94	6.41	-41.9	26.42'	.3
856	12.96	1211	0.78	6.41	-48.9	26.61'	.6L
859	12.85	1200	0.81	6.41	-53.1	26.87'	1.2L

Fe 2+ (mg/L): 3.0 Tubidity (NTUs): 52.3 Total Purged: 1.2L

Purge Pumping Rate (approx. L/m): 100 ml/min Approx. Pump/Intake Depth: ~30.0

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: Water Disposal:

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/21/06 800

SAMPLING INFORMATION / DATA

Date Sampled: 11/21/06 Time Sampled: 9:00

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1046-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Red Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B McGillivray Sampler Signature: B. McGillivray Date Signed: 11/21/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP-24-6D

Field Personnel: B. McGillivray Date: 11/20/06

Weather Conditions: Sunny Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/20/06
Date/Time of Measurement: 11/20/06 / 1058	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 60.70'	Detection Method of Free Product: visual
Depth to Water Level (TOC - ft.): 27.65'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE
Fe^{+} TEST MEASURED PRIOR TO METALS SAMPLE

FINAL DTW: 29.38'

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-24-6D

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1106	13.51	656	5.02	6.68	-7.1	28.06	0.5L
1111	13.57	646	2.37	6.56	-8.1	28.10	1
1116	13.63	641	1.24	6.46	-11.1	28.55	2
1121	13.58	637	0.44	6.44	-15.9	28.85	3
1126	13.57	634	0.30	6.44	-21.9	29.04	4
1131	13.52	629	0.26	6.43	-25.6	29.06	5

Fe 2+ (mg/L): 1.0 Tubidity (NTUs): 3.22 Total Purged: 5L

Purge Pumping Rate (approx. L/m): 200 ml/min Approx. Pump/Intake Depth: ~58.2

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: soap/meth. / DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/20/06 830

SAMPLING INFORMATION / DATA

Date Sampled: 11/20/06 Time Sampled: 1132

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1047-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): Courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillivray Sampler Signature: B. McGillivray Date Signed: 11/20/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RP. 24-73.5

Field Personnel: B. McGillicuddy / E. Sells Date: 11/21/06

Weather Conditions: Overcast / Rain Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/21/06
Date/Time of Measurement: 11/21/06 / 1028	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.):	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 27.35'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition:	OK / NA / Needs Repairs / Repaired	Lock Condition:	OK / NA / Needs Repairs / Replaced
Cap Condition:	OK / NA / Needs Repairs / Repaired	Inner Casing Condition:	OK / NA / Needs Repairs / Repaired
Paint Condition:	OK / NA / Needs Repairs / Repaired	Monument Condition:	OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLE.
Fe^{+} MEASURED PRIOR TO METALS SAMPLE.

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-24-73.5

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
1035	12.75	917	4.06	6.61	-4.0	27.38	0.2L
1040	13.16	1277	0.65	6.44	-13.2	27.38	2
1045	13.19	1179	0.35	6.43	-16.1	27.39	4
1050	13.19	1090	0.29	6.42	-18.2	27.41	6
1055	13.25	1031	0.33	6.41	-20.0	27.42	8
1100	13.24	996	0.32	6.40	-21.9	27.42	10
1105	13.26	973	0.26	6.39	-24.8	27.41	12
1110	13.25	958	0.23	6.39	-26.0	27.42	14
1115	13.24	946	0.23	6.39	-27.0	27.42	16
1120	13.24	937	0.22	6.38	-27.8	27.42	18

Fe 2+ (mg/L): 0.5 Tubidity (NTUs): 1.15 Total Purged: 18L

Purge Pumping Rate (approx. L/m): 400ml/min Approx. Pump/Intake Depth: ~68'

Well Yield: High / Moderate / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / DV Pump / Other =

Decontamination Method: SOAP/MEOH/DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI Instrument Calibration Date & Time: 11/21/06 800

SAMPLING INFORMATION / DATA

Date Sampled: 11/21/06 Time Sampled: 1121

QA/QC Sample (circle one): DUP Lab MS/MSD Equip Blank Trip Blank

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1049-01	2	1 L	G	None	STL-Burlington		Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington		VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: YES / NO

Sample Transport (circle one): courier AMEC Delivery UPS/Fed Ex/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGillicuddy Sampler Signature: B. McGillicuddy Date Signed: 11/21/06

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID RF-24-85

Field Personnel: B. McGillicuddy, E. Sauls — Date: 11/21/06

Weather Conditions: Overcast, Rain — Approx. Air Temp (F): 50

INITIAL WELL DATA

PID (ppm) Background: 0.0 In-well Casing: 0.0	PID Calibration Standard: isobutylene 100 ppm PID Calibration Date: 11/21/06
Date/Time of Measurement: 11/21/06 / 840	Depth to Water Measuring Technique: Solinst
Depth Well Bottom (TOC - ft.): 84.93'	Detection Method of Free Product: Visual
Depth to Water Level (TOC - ft.): 27.19'	Conversions Factors (casing dia. = gallons/linear ft.) Circle One
Depth to Free Product (TOC - ft.):	0.75" = 0.02 1" = 0.04 2" = 0.17 3" = 0.37
Calculated Column Height (ft.):	4" = 0.66 6" = 1.47 8" = 2.61 12" = 5.88
Casing Diameter (in.):	Three Well Purge Volumes (gallons) = 3 x _____ = _____
Quantity of Free Product Collected (gal.):	Method of Collecting Free Product:
Obsevation of sheen or LNAPL:	Observation of DNAPL:

WELL CONDITION

Casing (circle one): Stainless Steel Carbon Steel PVC Other:

Casing Condition: OK / NA / Needs Repairs / Repaired	Lock Condition: OK / NA / Needs Repairs / Replaced
Cap Condition: OK / NA / Needs Repairs / Repaired	Inner Casing Condition: OK / NA / Needs Repairs / Repaired
Paint Condition: OK / NA / Needs Repairs / Repaired	Monument Condition: OK / NA / Needs Repairs / Repaired

Recommended Well Repairs:

SAMPLING INFORMATION / DATA

Field Observations/Notes of Sampling Event:

TURBIDITY MEASURED PRIOR TO DIOXIN SAMPLES.
Fe^{+} TEST MEASURED PRIOR TO METALS SAMPLES.

Sampling Information continued on Side 2

amec	AMEC Earth & Environmental, Inc. GROUNDWATER SAMPLING FIELD FORM	Project Name: Stage 2 SCE GW Sampling Project #: 0-61M-10703-0 P 69 Monitoring Well ID: RP-24-85

INITIAL WELL DATA & WELL PURGING INFORMATION

Time (0:00 - 23:59)	Water Temperature (degree C)	Specific Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	Water pH (S.U.)	ORP mV	DTW (feet bgs)	Volume Purged (liters)
916	12.74	2738	2.69	6.46	-18.6	27.35	CELL
923	13.09	2765	0.44	6.35	-18.6	27.35	3
928	13.10	2760	0.34	6.34	-16.4	27.35	5.7
933	13.09	2760	0.31	6.33	-14.9	27.36	7.4
938	13.13	2757	0.31	6.37	-15.8	27.36	9.6

Fe 2+ (mg/L): 0.4 Tubidity (NTUs): 0.82 Total Purged: 9.6L

Purge Pumping Rate (approx. L/m): 450 ml/min Approx. Pump/Intake Depth: ~83.4'

Well Yield: High / (Moderate) / Low

Purge Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Sampling Method (circle one): Disposable Bailer / Peristalic Pump / (DV Pump) / Other =

Decontamination Method: SOAP / METH. / DI RINSE Water Disposal: TO WTP

Instrument Type & Number: YSI #4 Instrument Calibration Date & Time: 11/21/06 800

SAMPLING INFORMATION / DATA

Date Sampled: 11/21/06 Time Sampled: 939

QA/QC Sample (circle one): (DUP) Lab MS/MSD Equip Blank (Trip Blank)

Sample ID	Bottles (total)	Bottles (size)	Bottles (type)	Preservative	Destination Laboratory	QA/QC Sample	Analytical Parameters
1048-01	2	1 L	G	None	STL-Burlington	1048-02	Insecticides 8081A
	2	1 L	G	None	STL-Burlington		Herbicides 8151A
	2	1 L	G	None	STL-Burlington		SVOCs 8270C
	3	40 mL	G	HCl	STL-Burlington	1048-03	VOCs 8260B
	1	500 mL	P	HNO_3	STL-Burlington		Total Metals 6000/7000/Hardness SM 2340B
	1	500 mL	P	HNO_3	STL-Burlington		Dissolved Metals 6000/7000
	1	1 L	P	None	STL-Burlington		TSS
	1	1 L	P	None	STL-Burlington		Chloride/Sulfate/TDS
	1	1 L	P	H_2SO_4	STL-Burlington		Ammonia
	1	250 mL	P	H_2SO_4	STL-Burlington		COD
	2	40 mL	G	H_2SO_4	STL-Burlington		TOC
	2	40 mL	G	H_2SO_4	STL-Burlington		DOC
	1	250 ml	P	NaOH & ZnAc	STL-Burlington		Sulfide
	2	1 L	G	None	SGS		Dioxins/Furans 1613
	2	1 L	G	HCl	Test America		NWTPH-Dx
	1	1L	P	None	Test America		Nitrate/Nitrite/Orthophosphate/Alkalinity/pH
	1	400 mL	P	sterile	Food Quality		Total Heterotrophs/Diesel Degraders
	3	40 mL	G	TSP	Univ. of OK		Stable Isotopes

All samples were immediately placed into a cooler and packed with ice or "Blue Ice", unless otherwise noted: (YES) / NO

Sample Transport (circle one): (courier) AMEC Delivery UPS/(Fed Ex)/USPS

CERTIFICATION STATEMENT

By signing below, the listed AMEC sampler states that the information provided on this page is accurate.

Sampler (Print): B. McGILLICUDDY Sampler Signature: B. McGillicuddy Date Signed: 11/21/06

APPENDIX B

Boring Logs

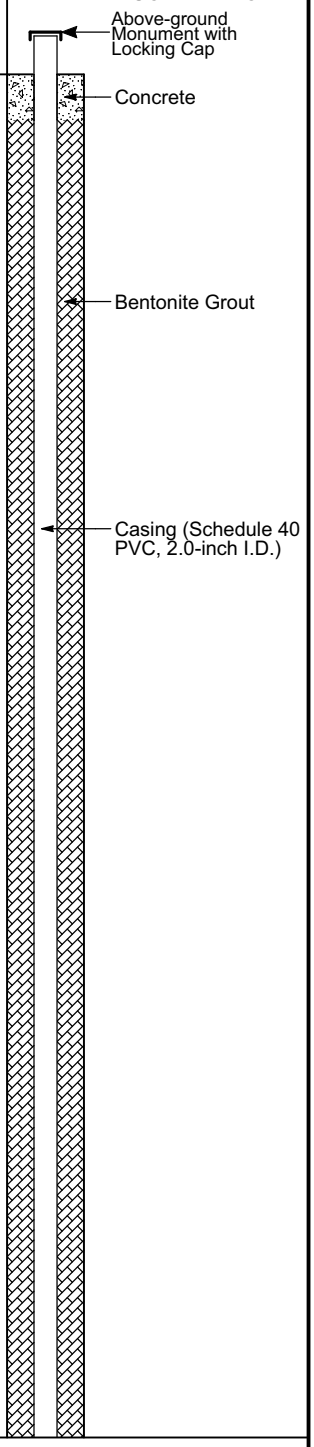
B-1

Siltronic Property Boring Logs and Well Construction Diagrams

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)
0	ML	Soft, brown SILT with organics (roots); dry.	
		Some fine sand.	
	SP	Loose, brown, fine SAND with some organics (roots) and trace silt; dry.	2.2
5		Rust-colored SAND.	2.3
	ML	Soft, dark gray SILT with some fine sand and organics (roots); moist.	2.5
10	SM	Loose, brown, fine, silty SAND with trace organics (roots); dry to moist.	
15			2.8
20	SP	Loose, gray-brown, fine to medium SAND with some silt, trace fine gravel; wet.	2.3
		Silt layer.	
25	ML-SM	Soft/loose, gray-green, fine, sandy SILT to fine, silty SAND; wet.	1.8
	ML	Medium stiff, gray-green to brown SILT with some sand lenses, some organics (wood and roots); moist.	1.6
30			

GRAPHIC LOG | SAMPLE | UV LIGHT/ SUDAN IV | GROUNDWATER | FIELD AND LABORATORY TESTING

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.90 feet
CASING ELEVATION: 35.37 feet
START CARD/TAG ID: 186828/L83975
DRILLING DATES: 10/03/2006 - 10/04/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

AMEC
7376 SW Durham Road
Portland, Oregon
USA 97224
Tel (503) 639-3400
Fax (503) 620-7892

LOG OF BORING MW-03-137

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML							Bentonite Grout
						1.3			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35									
						2.5			
40									
						1.2			
45									
						2.4			
50									
						1.8			
		SP	Loose, gray, fine SAND with some silt; moist.						
						2.1			
55		ML	Medium stiff, gray-green SILT with some organics (wood), trace sand; moist to wet.						
						0.7			
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 32.90 feet

CASING ELEVATION: 35.37 feet

START CARD/TAG ID: 186828/L83975

DRILLING DATES: 10/03/2006 - 10/04/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML							Bentonite Grout
						0.9			
			Slight decrease in organics (wood).						Casing (Schedule 40 PVC, 2.0-inch I.D.)
65									
						3.0			
70									
						2.5			
75									
						4.1			
			SILT intermixed with light gray ash from 79-82 ft bgs.						
80									
						4.4			
85									
						5.0			
90									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.90 feet
CASING ELEVATION: 35.37 feet
START CARD/TAG ID: 186828/L83975
DRILLING DATES: 10/03/2006 - 10/04/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		ML	Organics (wood, approximately 4-inch layer).						Bentonite Grout
			Some sand.						
						5.8			Casing (Schedule 40 PVC, 2.0-inch I.D.)
95									
						6.7			
100									
						4.5			
105			Decrease to trace sand.						
						2.9			
110									
						2.3			
115		SM-ML	Loose/soft, gray-green, silty SAND to sandy SILT with some organics (wood); wet.						
			Organics (wood, approximately 6-inch layer).						
						3.1			
120									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.90 feet
CASING ELEVATION: 35.37 feet
START CARD/TAG ID: 186828/L83975
DRILLING DATES: 10/03/2006 - 10/04/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120			Organics (wood, approximately 6-inch layer).						Bentonite Grout
		SW	Medium dense, gray-green, silty, gravelly SAND with organics (wood), subrounded to rounded gravel; wet.						Casing (Schedule 40 PVC, 2.0-inch I.D.)
125		ML	Medium stiff, gray-green SILT; wet. Grades to mottled brown and rust, micaceous.						20/40 Colorado Silica Sand
130									10/20 Colorado Silica Sand
		GM	Medium dense, brown, subrounded to rounded, silty GRAVEL and trace cobbles; wet.						Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
		SP	Loose, dark gray, fine to medium SAND, trace cobbles; wet.						
		GM	Very dense, gray, rounded to subrounded, silty GRAVEL; wet.					1001-01	
135		GM	Dense, gray with rust, subrounded to angular, silty GRAVEL and trace cobbles; wet.						Threaded End Cap
			Total depth drilled = 137 ft bgs.						
140									
145									
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 32.90 feet

CASING ELEVATION: 35.37 feet

START CARD/TAG ID: 186828/L83975

DRILLING DATES: 10/03/2006 - 10/04/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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7376 SW Durham Road
Portland, Oregon
USA 97224
Tel (503) 639-3400
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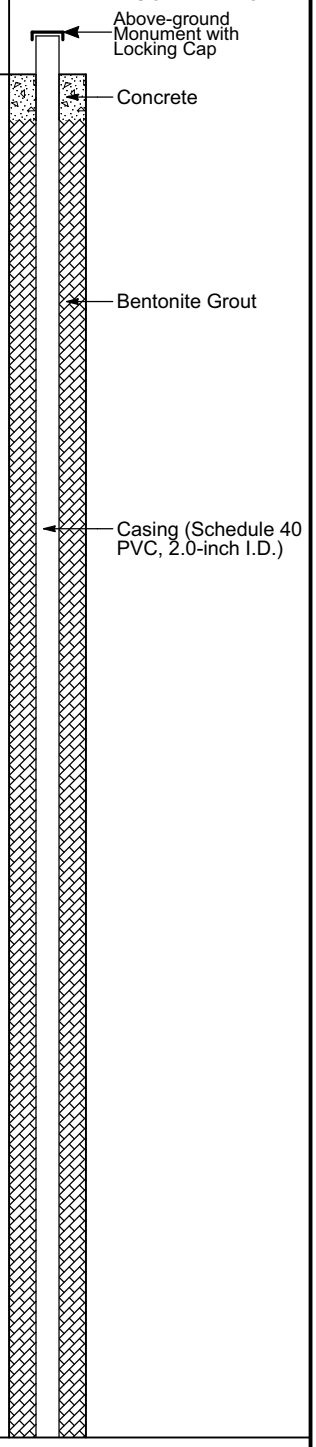
LOG OF BORING MW-03-137

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0			Topsoil and vegetation.					
		ML	Soft, brown SILT with some fine sand; dry.					
		SP	Loose, brown, fine SAND with trace silt and rounded, fine gravel; dry.			0.4		
5								
			Increased to some fine to coarse gravel.					
10								
			With some gray, clayey silt, little to no gravel; moist.			0.4		
15								
							▼	
20								
		SP	Loose, gray, fine SAND with some silt; wet.			1.4		
25								
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.86 feet
CASING ELEVATION: 35.29 feet
START CARD/TAG ID: 186827/L83974
DRILLING DATES: 09/25/2006 - 10/03/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING MW-03-141

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SP							Bentonite Grout Casing (Schedule 40 PVC, 2.0-inch I.D.)
35		SM	Loose, gray-brown, silty SAND with trace organics (wood), micaceous; moist.			0.7			
40		ML	Medium stiff, gray-brown, sandy SILT; moist. Grades to stiff, gray-green.			0.3 0.2			
45		SM	Medium dense, gray-brown, silty SAND with some organics (wood); wet. Interbedded with thin sandy silt layers.			0.2			
50			Coarse gravel.			0.2			
55		SP	Loose, gray, fine SAND; wet.						
		SM-ML	Medium dense/medium stiff, gray-brown, silty SAND to sandy SILT, micaceous, trace organics (wood); moist.			0.2			
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.86 feet
CASING ELEVATION: 35.29 feet
START CARD/TAG ID: 186827/L83974
DRILLING DATES: 09/25/2006 - 10/03/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING MW-03-141

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		SM-ML							Bentonite Grout
						0.1			Casing (Schedule 40 PVC, 2.0-inch I.D.)
65									
						0.3			
70									
						0.2			
75		SP	Medium dense, gray, medium SAND with some silt, organics (wood); wet.						
		ML	Medium stiff, gray-brown, sandy SILT with some organics (wood); moist.			0.1			
80									
						0.2			
			Light gray SILT (ash), (2-inch layer). Ash (two 1/2-inch layers).						
85		ML	Medium stiff, gray-green SILT with some sand, micaceous, trace organics (wood); moist.						
						1.0			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 32.86 feet

CASING ELEVATION: 35.29 feet

START CARD/TAG ID: 186827/L83974

DRILLING DATES: 09/25/2006 - 10/03/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		ML							Bentonite Grout
						1.9			Casing (Schedule 40 PVC, 2.0-inch I.D.)
95									
						2.3			
100									
						1.2			
105									
						0.9			
110									
						0.8			
115			Organics (wood, up to approximately 1 inch thick).						
						1.7			
120		GM	Medium dense, dark gray, subrounded to subangular, silty, sandy GRAVEL with some organics (wood); wet.						

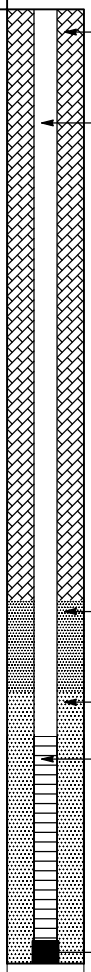
BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.86 feet
CASING ELEVATION: 35.29 feet
START CARD/TAG ID: 186827/L83974
DRILLING DATES: 09/25/2006 - 10/03/2006

REMARKS:

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
120	SM	Grades to medium dense, gray-green, silty SAND with some fine, rounded gravel, organics (wood); wet.	2.8	
	ML	Medium stiff, light brown SILT with trace sand, micaceous; wet.	1.3	
125	SW	Medium dense, dark brown SAND with some silt, trace gravel; wet. Grades to medium dense, brown, subangular to subrounded to rounded, gravelly SAND; wet.	1.8	
130	GW	Dense, dark brown, subangular to subrounded, sandy GRAVEL; wet.		
	GM	Dense, dark gray with tan, angular to subangular, silty GRAVEL with some sand; moist.	2.0	
135		Grades to coarse gravel and cobbles, trace sand.		
				1000-01
140		Total depth drilled = 141 ft bgs.		
145				
150				

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 32.86 feet
CASING ELEVATION: 35.29 feet
START CARD/TAG ID: 186827/L83974
DRILLING DATES: 09/25/2006 - 10/03/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING MW-03-141

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	ML	Soft, brown SILT with some organics (wood and roots); moist.		
		Geotextile.		
			1.7	
		Grades to gray-green.		
		Trace gravel.		
5				
		Wood mat.	1.5	
10				
	SP	Medium stiff, olive-gray, fine, sandy SILT with some organics; moist. Thin organic layer with sheen and hydrocarbon-like odor.	3.3	
15				
			43	
		Black, wood mat (7 inches thick).		
	SM	Loose, dark gray, silty SAND with some organics (wood and roots); moist. Sheen and hydrocarbon-like odor.		1004-01
			13	
20				
	ML	Olive-green, fine sandy SILT with some organics (wood and roots); moist.		
			5.9	
		Sand content increases; wet.		
25		Total depth drilled = 25 ft bgs.		
30				

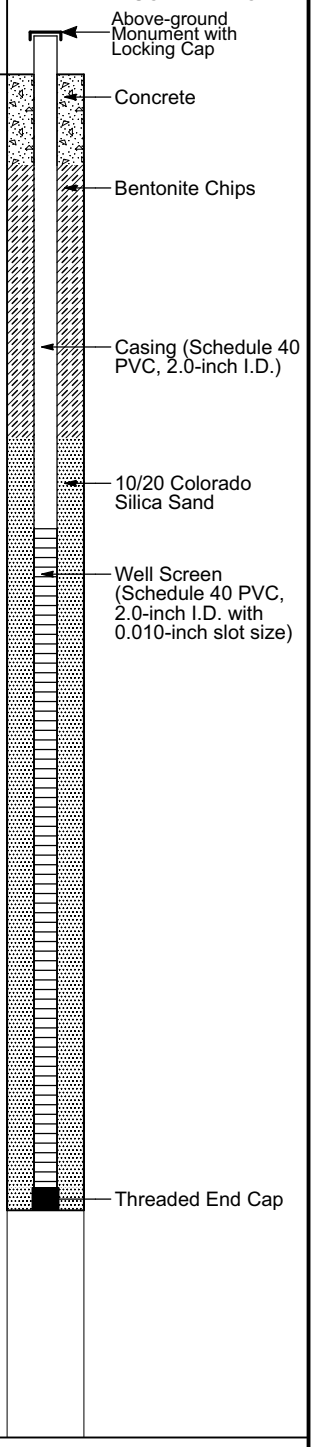
GRAPHIC LOG

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.11 feet

CASING ELEVATION: 39.70 feet

START CARD/TAG ID: 186831/L83978

DRILLING DATES: 10/10/2006 - 10/10/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-20-25

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	ML	Soft, brown SILT with some organics (roots and wood); dry.		
		Trace fine, angular gravel.		
5	ML	Medium stiff, gray-brown SILT with some organics (roots); moist. Sand lense.		
			3.1	
		Large piece of wood.		
10				
		Wood mat.	4.5	
	ML	Soft, gray-brown, sandy SILT with some organics; moist.		
15	SP	Loose, gray, fine SAND; wet.	5.2	
	ML	Medium stiff, gray-brown SILT with some organics and trace sand; wet.		
20			5.5	
		Abundant organics. Hydrocarbon-like odor and sheen.		1003-01
		Sand layer from 24.25-24.5 ft bgs.		
25				
30				

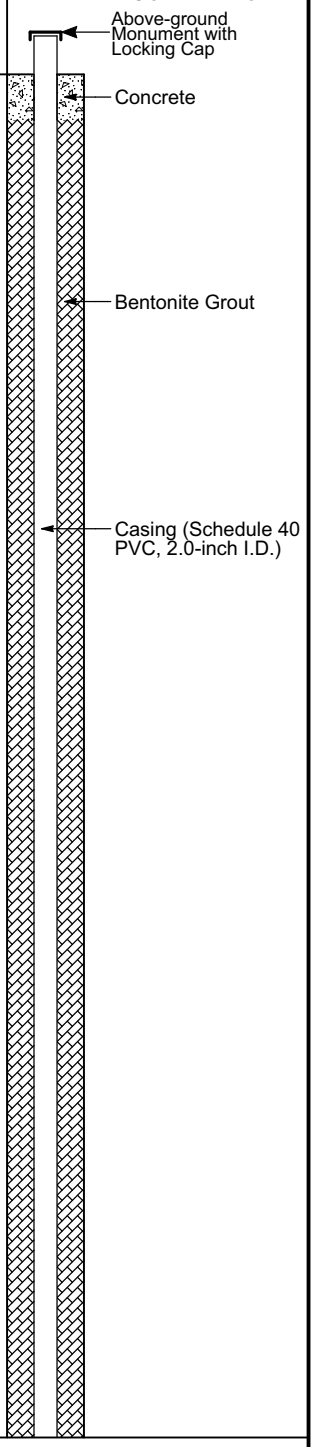
GRAPHIC LOG

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.25 feet

CASING ELEVATION: 39.30 feet

START CARD/TAG ID: 186830/L83977

DRILLING DATES: 10/06/2006 - 10/09/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 97 ft bgs.

RP - Portland
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LOG OF BORING RP-20-97

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML	Brown, no sand.			1.0			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
35			Grades to gray-green.						
			Trace fine sand; wet.			2.6			
40			Moist.			3.1			
45			Pieces of wood.						
		MH	Soft, gray-green, highly plastic SILT with trace clay, organics; wet.			3.8			
50		ML	Stiff, green-gray SILT with trace clay, organics; moist to dry.			3.7			
55									
			Slightly moist.			4.2			
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.25 feet

CASING ELEVATION: 39.30 feet

START CARD/TAG ID: 186830/L83977

DRILLING DATES: 10/06/2006 - 10/09/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 97 ft bgs.

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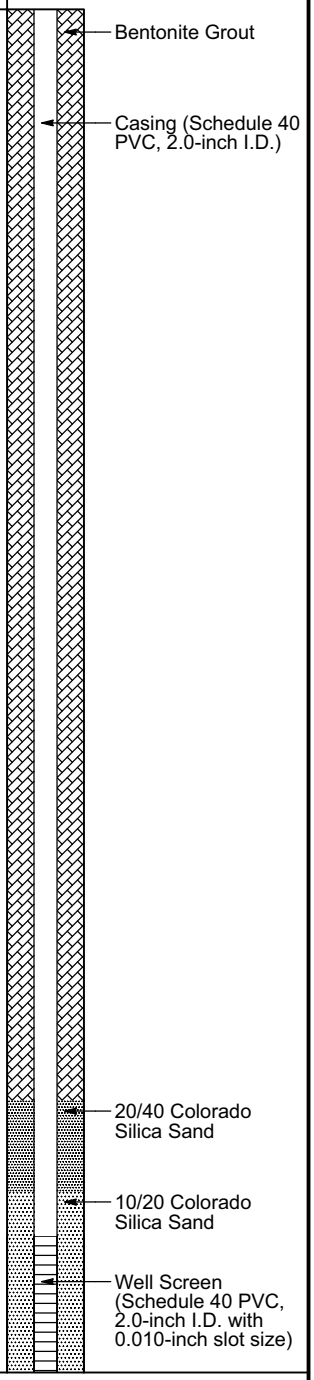
DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
60		SM	Medium dense, gray-green, fine, silty SAND, micaceous; wet.					
			Grades to brown.			4.2		
65								
			Silt layer.			3.5		
70								
						4.5		
75			Interbedded silt layers.					
						4.0		
80								
						4.8		
85								
						4.5		
90								1038-01

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 8.0 & 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 37.25 feet
CASING ELEVATION: 39.30 feet
START CARD/TAG ID: 186830/L83977
DRILLING DATES: 10/06/2006 - 10/09/2006

REMARKS:
Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 97 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		SM				6.0		1038-01	10/20 Colorado Silica Sand; Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size); Threaded Cone-Shaped End Cap
95									
			Total depth drilled = 97 ft bgs.						
100									
105									
110									
115									
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.25 feet

CASING ELEVATION: 39.30 feet

START CARD/TAG ID: 186830/L83977

DRILLING DATES: 10/06/2006 - 10/09/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 30 ft bgs. 6-inch - 30 to 97 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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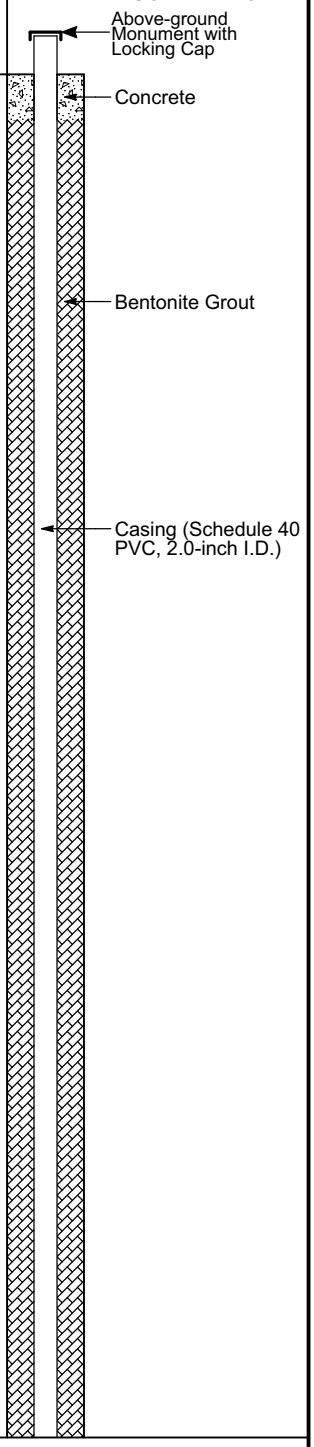
LOG OF BORING RP-20-97

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		ML	Soft, brown, sandy SILT with organics (roots); dry.			6.9		
		ML	Soft, gray-green, sandy SILT with some organics (roots); moist.					
5			Rounded gravel with some silt (2-inch layer).			5.1		
10						4.2		
		SP	Loose, gray, fine to medium SAND with silt lenses; moist.					
15								
		ML	Medium stiff, gray SILT with some sand, organics (wood); moist.			11		
20			Hydrocarbon-like odor and sheen.			48		
			Abundant wood.					
		SP	Loose to medium dense, gray, fine SAND with some organics (wood).			7.1	▼	
25			Wood mat from 24.5-24.75 ft bgs.					
		ML	Medium stiff, brown to olive-gray SILT with trace sand, some organics (wood and roots); moist.					
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 8.0 & 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 37.42 feet
CASING ELEVATION: 39.88 feet
START CARD/TAG ID: 186829/L83976
DRILLING DATES: 10/04/2006 - 10/06/2006

REMARKS:
Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 110 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-20-110

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML							Bentonite Grout
						2.3			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35			Moist to wet.						
						3.2			
40			Hard SILT; moist (2-inch layer, almost rock-like).						
						2.7			
45									
						5.4			
			Rounded gravel (approximately 1.5-inch diameter).						
50			Grades to brown-gray, fine layers of wood mats.						
						4.1			
			Soft; wet.						
55									
						2.1			
		ML-SM	Medium stiff, brown, fine, sandy SILT, micaceous; wet.						
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.42 feet

CASING ELEVATION: 39.88 feet

START CARD/TAG ID: 186829/L83976

DRILLING DATES: 10/04/2006 - 10/06/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 110 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML-SM							Bentonite Grout
						2.4			Casing (Schedule 40 PVC, 2.0-inch I.D.)
65									
						3.1			
70									
						3.7			
75									
		ML	Medium stiff, brown, sandy SILT with interbedded silt lenses, micaceous; wet.			1.8			
80									
						1.6			
85									
						5.4			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.42 feet

CASING ELEVATION: 39.88 feet

START CARD/TAG ID: 186829/L83976

DRILLING DATES: 10/04/2006 - 10/06/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 110 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		ML							Bentonite Grout
						5.9			Casing (Schedule 40 PVC, 2.0-inch I.D.)
95									
		SM	Medium dense, brown, fine, silty SAND; wet.			2.6			
		GP / GM	Dense, brown and gray, rounded to subrounded, sandy GRAVEL (approximately 2-inch layer); wet.						
100			Very dense, gray, angular to subangular, silty GRAVEL with trace sand; moist. Grades to dense, coarse gravel and cobbles (basalt).						20/40 Colorado Silica Sand
			Basalt gravel.						10/20 Colorado Silica Sand
105			Coarse gravel and cobbles.					1002-01	Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
110			Total depth drilled = 110 ft bgs.						Threaded End Cap
115									
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 37.42 feet

CASING ELEVATION: 39.88 feet

START CARD/TAG ID: 186829/L83976

DRILLING DATES: 10/04/2006 - 10/06/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 110 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-20-110

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	ML	Medium stiff, brown SILT with some sand, organics (roots); dry to moist.	0.1	
5	ML	Soft to medium stiff, gray-brown SILT with trace organics; moist.	0.5	
10				
13	SP	Loose, dark gray, fine to medium SAND; moist.	0.5	
15	SM	Medium dense, dark gray, fine, silty SAND with some organics (roots and wood); wet. Strong hydrocarbon-like odor.	8.0	
20		Interbedded thin silt layers.	1.5	1015-01
25		Less organics.	1.1	
27	ML	Medium stiff, gray-brown SILT with some organics (roots); moist.		
	SP	Loose, dark gray, fine SAND; moist to wet.	0.8	
30		Total depth drilled = 28 ft bgs.		

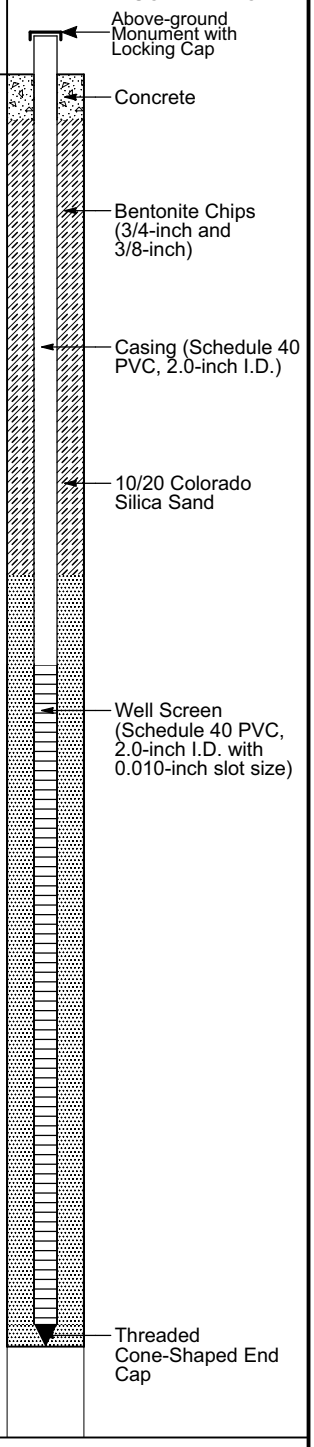
GRAPHIC LOG

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.47 feet

CASING ELEVATION: 37.14 feet

START CARD/TAG ID: 186841/L83988

DRILLING DATES: 10/25/2006 - 10/25/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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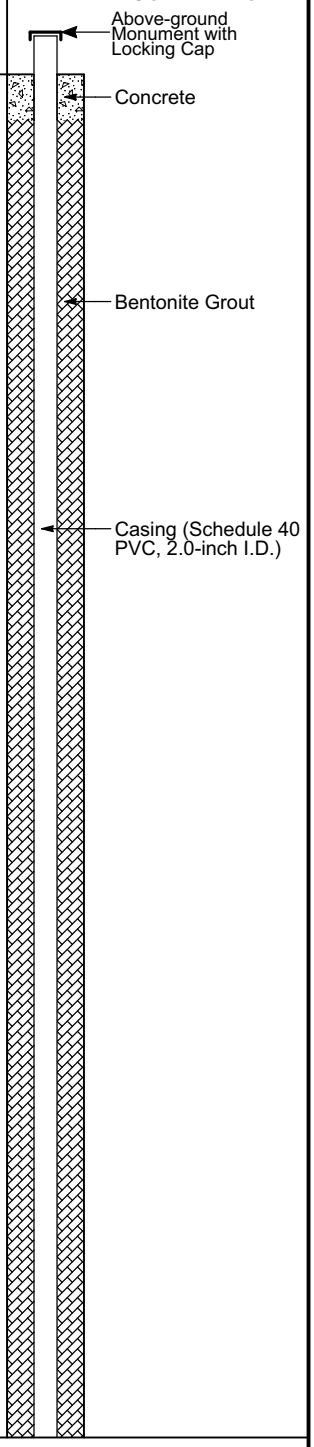
LOG OF BORING RP-21-28

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		ML	Soft, brown SILT with some organics (roots); dry to moist.			0.0		
5						0.3		
		SP	Loose, dark gray, fine SAND; moist.					
10						0.0		
15		ML	Soft, dark gray, fine, sandy SILT; wet. Hydrocarbon-like odor and sheen. Cloth mat.					
		SM	Loose, dark gray, silty SAND with some organics (roots); wet.			18		
20			Grades to brown.					
			Grades to gray-green, with interbedded silt layers.			0.5	▼	
25		SP	Loose, gray, fine SAND; wet.			0.2		
		ML	Medium stiff, dark gray SILT with some sand, organics; moist.					
30								

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.31 feet

CASING ELEVATION: 36.98 feet

START CARD/TAG ID: 186840/L83987

DRILLING DATES: 10/24/2006 - 10/24/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 125 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-21-125

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML	Grades to brown.						Bentonite Grout
						0.4			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35									
						0.1			
40			Trace organics.						
						0.1			
45		ML	Medium stiff to stiff, gray-brown SILT with some sand, organics (wood); moist to wet.						
						0.1			
			Interbedded silty sand layers.						
50									
						0.1			
55									
						0.2			
		SM	Medium dense, dark gray, fine, silty SAND; wet.						
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.31 feet

CASING ELEVATION: 36.98 feet

START CARD/TAG ID: 186840/L83987

DRILLING DATES: 10/24/2006 - 10/24/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 125 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML	Medium stiff to stiff, gray-brown SILT with some interbedded sandy silt layers; moist.						Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
						0.5			
65			Trace organics (wood).						
						0.5			
70									
						0.1			
75									
			Organics (wood mat, 4 inches thick).						
						0.2			
		SP	Loose, dark gray, fine to medium SAND with some silt and organics (wood); moist to wet.						
80									
		SM-ML	Medium stiff/dense, gray-brown, interbedded sandy SILT and silty SAND; moist to wet.						
			Light gray, sandy ash (6-inch layer) with piece of wood.			0.1			
85									
						0.2			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.31 feet

CASING ELEVATION: 36.98 feet

START CARD/TAG ID: 186840/L83987

DRILLING DATES: 10/24/2006 - 10/24/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 125 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		SM-ML							Bentonite Grout
						0.2			Casing (Schedule 40 PVC, 2.0-inch I.D.)
95			Wood (3-inch layer).						
						0.1			
100									
						0.2			
			Increase in sand content.						
105									
						0.3			
		ML	Medium stiff, gray-green SILT with some fine sand and organics (wood and roots); wet.						
						0.2			
110									
						0.1			20/40 Colorado Silica Sand
									10/20 Colorado Silica Sand
115									Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
						0.2			
								1014-01	
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.31 feet

CASING ELEVATION: 36.98 feet

START CARD/TAG ID: 186840/L83987

DRILLING DATES: 10/24/2006 - 10/24/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 125 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120		ML				0.1		1040-01	10/20 Colorado Silica Sand; Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size); Threaded End Cap
125			Total depth drilled = 125 ft bgs.						
130									
135									
140									
145									
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.31 feet

CASING ELEVATION: 36.98 feet

START CARD/TAG ID: 186840/L83987

DRILLING DATES: 10/24/2006 - 10/24/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 125 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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amec

LOG OF BORING RP-21-125

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	ML	Medium stiff, brown SILT with trace organics; moist.	0.4	
5			0.3	
	ML	Soft, gray SILT with some organics (wood); moist to wet.	1.0	
10				
	SM	Gray, fine, silty SAND; moist.		
	SP	Loose, gray, fine to medium SAND with trace wood, silt lenses; moist.	0.4	
15				
	SM	Loose, gray, fine, silty SAND with some organics (wood); wet. Slight sheen and hydrocarbon-like odor.		
20				1012-01
			2.3	
		Silt (approximately 4-inch layer).		
25	SM	Loose, gray, fine, silty SAND with interbedded silt layers; wet.		
	ML	Medium stiff, brown, fine, sandy SILT with some organics (wood and roots); moist.	0.3	
30				

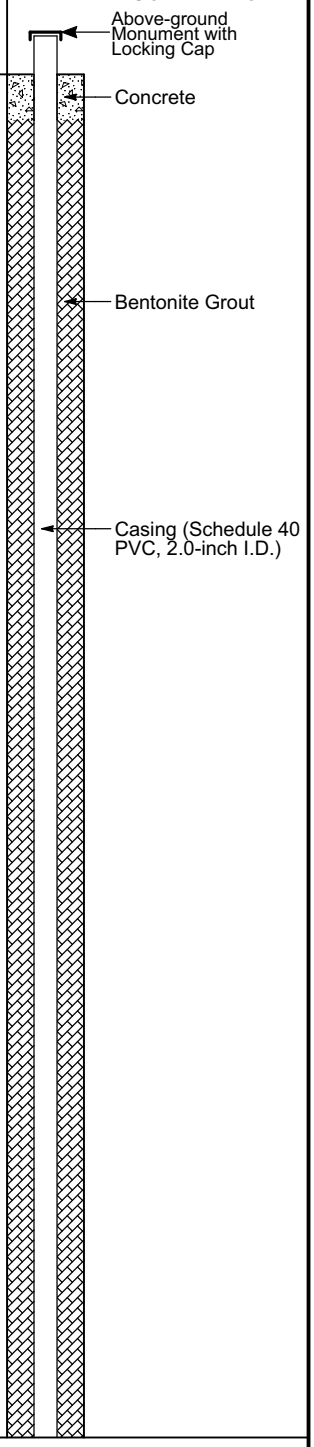
GRAPHIC LOG

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.30 feet

CASING ELEVATION: 36.78 feet

START CARD/TAG ID: 186839/L83986

DRILLING DATES: 10/20/2006 - 10/23/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 150 ft bgs.

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0-61M-107030 P69

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LOG OF BORING RP-21-150

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML				0.4			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
35		ML-SM	Medium stiff, gray-brown, sandy SILT to fine, silty SAND with some organics (wood and roots); moist.			0.3			
			Interbedded layers of green-gray SILT from 35-42 ft bgs.						
40						0.1			
45						0.1			
50		ML	Medium stiff, gray-brown, sandy SILT with trace organics (wood); moist.			0.2			
55		SM	Medium dense, gray-brown, silty SAND with trace organics; wet.			0.0			
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.30 feet

CASING ELEVATION: 36.78 feet

START CARD/TAG ID: 186839/L83986

DRILLING DATES: 10/20/2006 - 10/23/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 150 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		SP	Medium dense, gray-brown, fine SAND with some silt, trace organics (wood); wet.			0.0			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
		ML	Medium stiff, gray-brown SILT with some fine sand; moist.						
65						0.1			
			Interbedded fine, silty SAND layers; wet.						
70						0.2			
75						0.1			
			Wood (6-inch layer).						
80		SM	Medium dense, gray-brown, fine, silty SAND with some light gray ash; wet.						
		ML	Medium stiff, gray-brown SILT with some fine sand, trace organics (wood); moist.			0.0			
85						0.1			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.30 feet

CASING ELEVATION: 36.78 feet

START CARD/TAG ID: 186839/L83986

DRILLING DATES: 10/20/2006 - 10/23/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 150 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		ML	Organics (1-inch thick wood mat).			0.0			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
95			Soft; wet.			0.3			
100						0.3			
105						0.3			
110		SM	Medium dense, gray-brown, fine, silty SAND, interbedded silt layers; wet.			0.0			
115						0.0			
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.30 feet

CASING ELEVATION: 36.78 feet

START CARD/TAG ID: 186839/L83986

DRILLING DATES: 10/20/2006 - 10/23/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 150 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120		SM				0.0			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
125									
						0.1			
130			Grades to brown.						
			Sandy, wood mat (10 inches thick).						
		GM	Medium dense, gray, subrounded to subangular, silty, sandy GRAVEL; wet.						
135			Grades to brown, more angular gravel.			0.1			
		GM	Very dense, olive, tan and rust, angular, silty GRAVEL, some sand; moist to dry.						
						0.2			
140									20/40 Colorado Silica Sand
			Moist to wet.						10/20 Colorado Silica Sand
145			Wet.						Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
								1013-01	
150			Total depth drilled = 150 ft bgs.						Threaded End Cap

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.30 feet

CASING ELEVATION: 36.78 feet

START CARD/TAG ID: 186839/L83986

DRILLING DATES: 10/20/2006 - 10/23/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 150 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-21-150

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

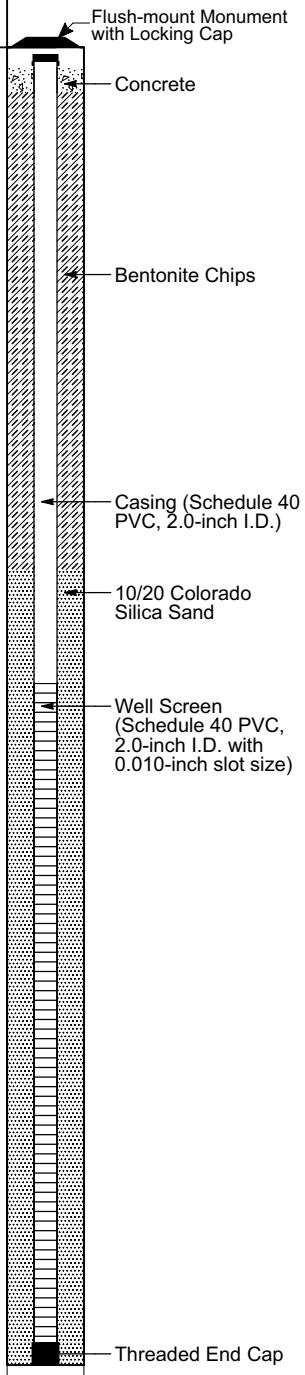
DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	GW	Sandy GRAVEL, base course.		
	SM	Medium dense, green-gray, silty SAND with some gravel; moist.	3.8	
5			5.2	
	ML	Medium stiff, green-gray SILT with trace sand and organics; moist.		
10			14	
	SM	Loose, dark gray, fine, silty SAND with some organics; moist.		
15	ML	Medium stiff, gray-green, gravelly SILT with some sand; wet.	8.6	
	SM	Medium dense, gray-green, fine, silty SAND with some organics; moist to wet.		
20		Grades to brown, fine to medium SAND; wet.	7.6	1007-01 1007-02
25		Grades to dark gray, some silt; wet.	5.8	
30		Total depth drilled = 29 ft bgs.		

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.37 feet

CASING ELEVATION: 35.09 feet

START CARD/TAG ID: 186834/L83981

DRILLING DATES: 10/12/2006 - 10/12/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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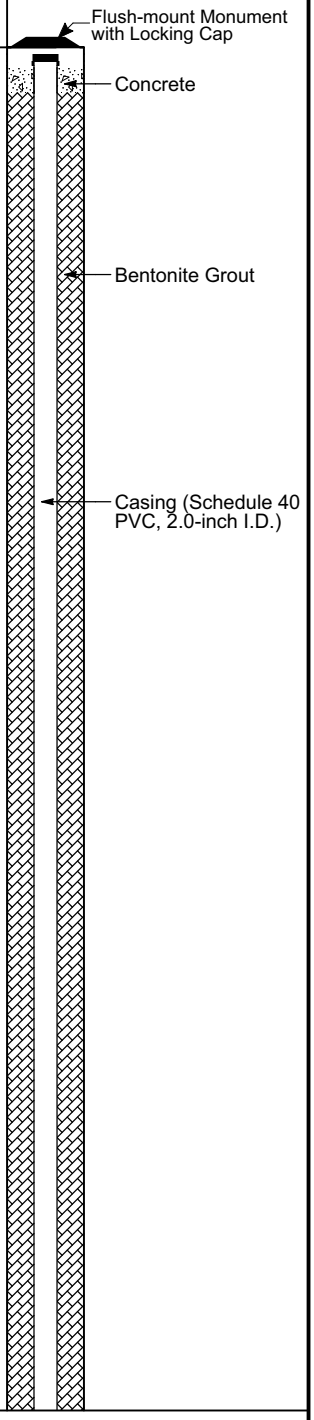
LOG OF BORING RP-22-29

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		ML	Medium stiff, gray-green SILT with some sand, trace gravel; moist.					
						1.4		
			Sandy SILT from 4-5 ft bgs.					
5								
						4.2		
10								
			Organics (wood, approximately 1-inch layer). Hydrocarbon-like odor.			11		
		SM	Loose, gray-green, silty SAND with some organics (wood); moist.			4.5		
15		ML	Soft, gray-green SILT with some gravel; moist.					
		SP	Loose, gray-green, fine to medium SAND with trace silt and organics (wood and roots); moist. Slight hydrocarbon-like odor.			6.3		
						6.6		
20			With some rounded to subrounded gravel from 20-21 ft bgs.					
		SP	Loose, brown, fine to medium SAND with some organics; moist. Slight hydrocarbon-like odor.				▼	
						6.7		
25								
		ML	Medium stiff, brown SILT with trace sand and organics (wood and roots); moist.			5.3		
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.29 feet
CASING ELEVATION: 35.17 feet
START CARD/TAG ID: 186833/L83980
DRILLING DATES: 10/12/2006 - 10/12/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-22-75

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML							Bentonite Grout
						4.9			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35			Grades to green-gray or olive-gray.						
						6.9			
40									
						5.1			
45		SM	Medium dense, green-gray, fine, silty SAND with some organics (wood); moist.						
						3.2			
50		ML	Medium stiff, green-gray SILT with trace fine sand and organics (wood); moist.						
						3.9			
55									
						3.1			
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.29 feet

CASING ELEVATION: 35.17 feet

START CARD/TAG ID: 186833/L83980

DRILLING DATES: 10/12/2006 - 10/12/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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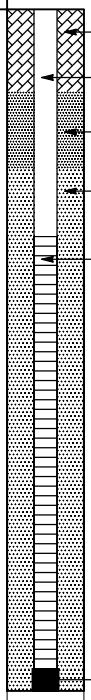
LOG OF BORING RP-22-75

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
60		SM	Loose, dark gray, fine, silty SAND with some organics (wood); wet.			4.3		
		SP	Loose, dark gray, fine, silty SAND; wet.					
65			Grades to medium to fine SAND with some silt, organics (wood).			5.3		1006-01
70			Organics (wood, approximately 1-inch layer).					1039-01
75			Total depth drilled = 75 ft bgs.					
80								
85								
90								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.29 feet
CASING ELEVATION: 35.17 feet
START CARD/TAG ID: 186833/L83980
DRILLING DATES: 10/12/2006 - 10/12/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-22-75

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)
0	GM	Medium dense, brown, silty, sandy GRAVEL; dry.	
		Geotextile fabric.	
	SM	Medium dense, gray-green, silty SAND with some organics (wood); moist.	4.2
5	ML	Medium stiff, gray-green SILT with trace sand and some organics (wood and roots).	6.4
10		Hydrocarbon-like odor but no sheen.	9.4
15	SP	Loose, gray-green, fine to medium SAND with trace silt; moist to wet. No odor or sheen.	5.5
20		Grades to brown.	8.3
25		Wet.	2.8
			3.6
30		Medium stiff, olive-gray to brown SILT with some organics	

GRAPHIC LOG

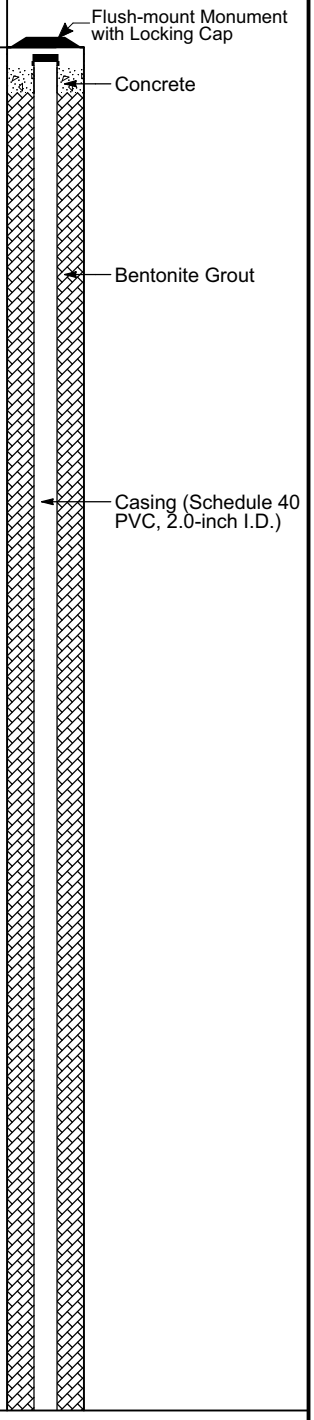
SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

FIELD AND LABORATORY TESTING

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.45 feet

CASING ELEVATION: 35.28 feet

START CARD/TAG ID: 186832/L83979

DRILLING DATES: 10/10/2006 - 10/11/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 151 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-22-151

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML	(roots); moist.						Bentonite Grout
						3.5			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35									
						5.7			
40									
						6.0			
45									
			Slightly softer.			6.0			
50		ML	Soft, green-gray, sandy SILT with some organics (wood); moist.						
						4.8			
		SM	Loose to medium dense, green-gray, fine, silty SAND; moist.						
55		ML	Medium stiff, brown SILT with some organics (wood); moist.						
						6.2			
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.45 feet

CASING ELEVATION: 35.28 feet

START CARD/TAG ID: 186832/L83979

DRILLING DATES: 10/10/2006 - 10/11/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 151 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML							Bentonite Grout
		SM	Loose, brown, silty SAND, some organics; moist.			6.7			Casing (Schedule 40 PVC, 2.0-inch I.D.)
65		SP	Loose, brown, fine SAND with trace silt; moist.						
						4.8			
			Interbedded silt (approximately 4-inch layer).						
			Grades to fine to medium SAND.						
70			Organics (approximately 1-inch wood and root layer).						
						5.8			
			Organics (2-inch wood mat).						
75		SM	Medium dense, green-gray to brown, fine, silty SAND with some organics (wood and roots); moist.						
						3.9			
80		ML	Medium stiff, brown, sandy SILT with trace organics; moist.						
						3.9			
			Light gray ash (approximately 10-inch layer).						
85		ML	Medium stiff, olive-gray SILT with trace sand, micaceous; moist.						
						3.5			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.45 feet

CASING ELEVATION: 35.28 feet

START CARD/TAG ID: 186832/L83979

DRILLING DATES: 10/10/2006 - 10/11/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 151 ft bgs.

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		ML	Grades to brown.						Bentonite Grout
						6.0			Casing (Schedule 40 PVC, 2.0-inch I.D.)
95			Grades to olive-brown, trace organics (roots).						
						5.3			
100			Scattered organics (wood pieces).						
						4.6			
			Organics (1-inch wood layer).						
105									
						1.8			
110									
						3.9			
115									
						5.2			
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.45 feet

CASING ELEVATION: 35.28 feet

START CARD/TAG ID: 186832/L83979

DRILLING DATES: 10/10/2006 - 10/11/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 151 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120		SM-ML	Medium stiff/dense, gray-green, fine, silty SAND to fine, sandy SILT, micaceous, trace organics (wood); wet.			2.1			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
125						3.8			
130						3.9			
			Rounded gravel (approximately 2-inch diameter).						
		SP	Medium dense, gray-green, fine SAND with some rounded to subrounded, fine to coarse gravel; wet.						
135		ML	Dense, brown, rust and dark gray, clayey SILT with some angular gravel; moist.			3.9			
140						2.9			20/40 Colorado Silica Sand
145		GM	Dense, greenish gray and brown, angular, silty GRAVEL; moist.						10/20 Colorado Silica Sand; Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
			Grades to brown.					1005-01	
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.45 feet

CASING ELEVATION: 35.28 feet

START CARD/TAG ID: 186832/L83979

DRILLING DATES: 10/10/2006 - 10/11/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 151 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
150		GM							Threaded End Cap
			Total depth drilled = 151 ft bgs.						
155									
160									
165									
170									
175									
180									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.45 feet

CASING ELEVATION: 35.28 feet

START CARD/TAG ID: 186832/L83979

DRILLING DATES: 10/10/2006 - 10/11/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 25 ft bgs. 6-inch - 25 to 151 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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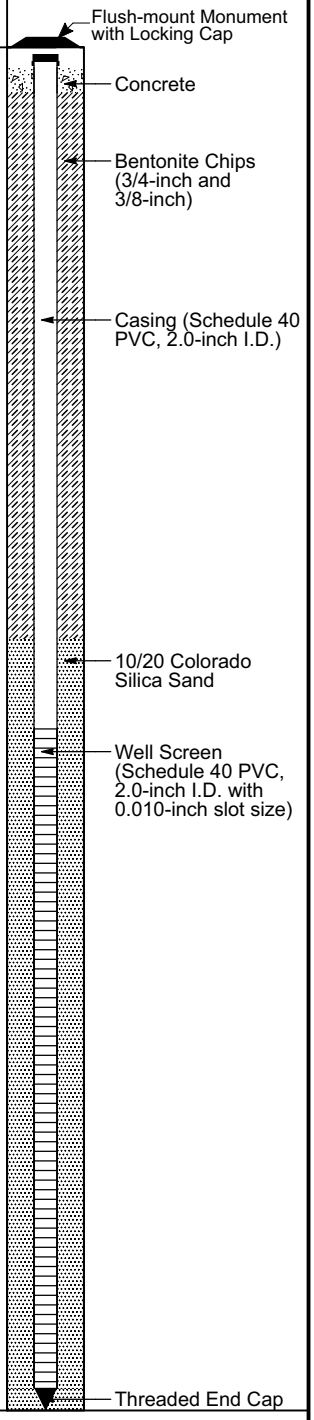
LOG OF BORING RP-22-151

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		GW	Loose, gray, sandy GRAVEL; dry. Geotextile.					
		SM	Loose, gray, fine, silty SAND with some silt and organics (wood) lenses; moist.			0.4		
5						0.5		
10		ML	Soft, gray SILT with trace sand; moist.			0.7		
		SP	Medium dense, gray, fine SAND with some silt and organics (wood) layers; moist.			2.1		
15		GM	Medium dense, angular, silty GRAVEL with some sand, organics (wood); wet. Slight hydrocarbon-like odor. Silt layer from 17-17.5 ft bgs.			0.7	▼	
20		SM	Loose, gray, fine, silty SAND with some organics (wood and roots); wet. Organics (wood and roots, 6-inches to 8-inches thick).			0.7		1011-01
25		ML	Gray, sandy SILT with some organics (wood and roots); wet.			0.4		
30			Total depth drilled = 30 ft bgs.					

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.05 feet
CASING ELEVATION: 34.68 feet
START CARD/TAG ID: 186838/L83985
DRILLING DATES: 10/18/2006 - 10/18/2006

REMARKS:

RP - Portland
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0-61M-107030 P69

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LOG OF BORING RP-23-30

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)
0	GW	Medium dense, brown, sandy GRAVEL. Geotextile.	
	ML	Medium stiff, gray SILT with some fine sand; moist.	0.9
5	ML-SM	Medium stiff/dense, gray-brown, sandy SILT to silty SAND with some organics (wood); moist to wet.	0.9
10			1.4
15	SP	Loose, gray-brown, fine SAND with trace silt; wet.	
	GM	Medium dense, gray-brown and tan, angular, coarse, silty GRAVEL; moist.	
	SP	Loose, gray, fine to medium SAND with some silt lenses, organics (wood); wet.	2.5
20			0.1
25			
	ML	Medium stiff, gray-brown SILT with trace fine sand, organics (wood); wet.	0.3
30			

GRAPHIC LOG

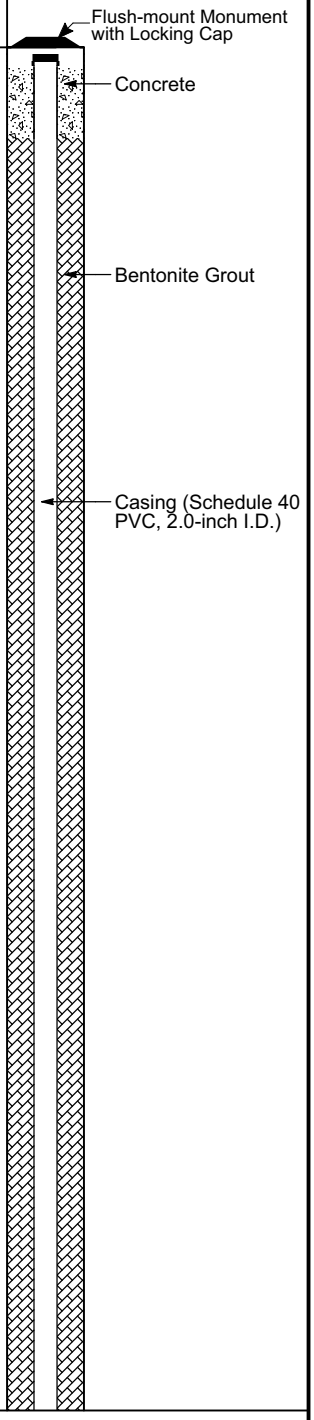
SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

FIELD AND LABORATORY TESTING

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.10 feet

CASING ELEVATION: 34.46 feet

START CARD/TAG ID: 186837/L83984

DRILLING DATES: 10/18/2006 - 10/18/2006

REMARKS:

RP - Portland
Stage 2 SCE

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LOG OF BORING RP-23-85

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML							Bentonite Grout
						0.3			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35			Grades to gray-green.						
						0.3			
40		SM-ML	Medium dense/medium stiff, gray-brown, silty SAND to sandy SILT with trace organics (wood); moist.						
						0.4			
45									
						0.4			
		SP	Loose, gray-brown, fine SAND with trace silt and some organics (wood); wet.						
50									
			Fine to medium.						
						0.4			
			Thin silt lenses.						
55		SM-ML	Medium dense/medium stiff, gray-brown, silty SAND to sandy SILT with trace organics (wood); moist.						
						0.5			
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.10 feet

CASING ELEVATION: 34.46 feet

START CARD/TAG ID: 186837/L83984

DRILLING DATES: 10/18/2006 - 10/18/2006

REMARKS:

RP - Portland
Stage 2 SCE

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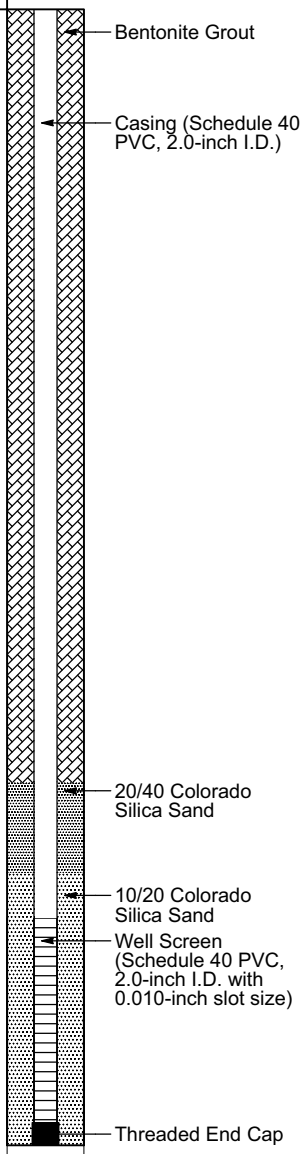
LOG OF BORING RP-23-85

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
60		SM-ML				0.4		
65						0.4		
70		SP	Loose, gray-brown, fine to medium SAND with silt layers; moist.					
			Some organics (wood).					
		SM	Loose, gray-brown, silty SAND; moist.			0.1		
			Green-brown.					
		ML	Stiff, gray-green SILT; moist.					
75			Trace sand.			0.1		
		ML	Medium stiff, gray-green, sandy SILT, micaceous; wet.					
80						0.1		1010-01
85			Total depth drilled = 85 ft bgs.					
90								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.10 feet
CASING ELEVATION: 34.46 feet
START CARD/TAG ID: 186837/L83984
DRILLING DATES: 10/18/2006 - 10/18/2006

REMARKS:

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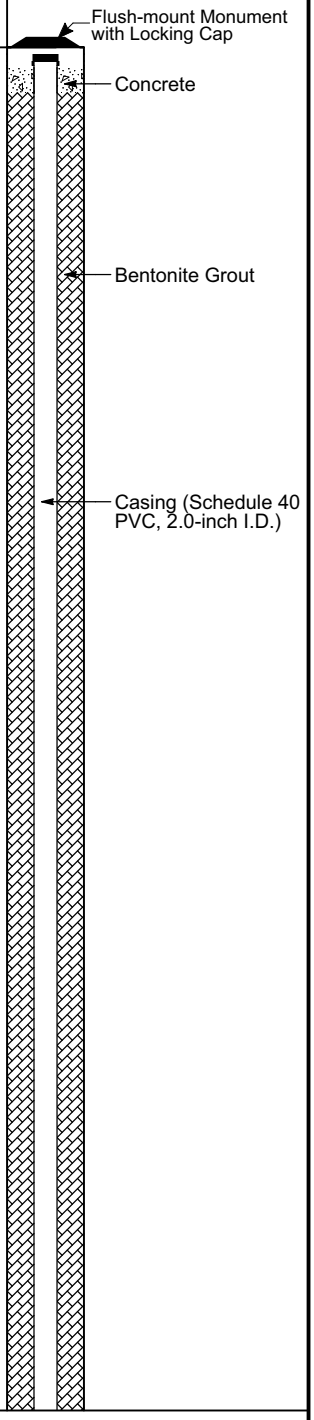
LOG OF BORING RP-23-85

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		GW	Sandy GRAVEL, base course.					
			Geotextile.					
		ML	Medium stiff, brown, fine, sandy SILT; moist.			1.9		
			Grades to gray.					
5		SM-ML	Medium stiff/medium dense, gray-brown, sandy SILT to silty SAND with some organics (roots); moist. Slight hydrocarbon-like odor.			2.7		
10			Interbedded fine sand layers and organics (wood and roots).			2.7		
15		GM	Medium dense, gray-brown, angular, silty GRAVEL with some sand; moist.			4.3		
		SP	Loose, gray, fine SAND with trace silt and thin interbedded silt layers, some organics (wood and roots); moist to wet.			4.9		
20			Mottled brown and gray.			4.2	▼	
			Gray.					
25		SM	Medium dense, mottled brown and gray, fine, silty SAND with trace organics; wet.			3.4		
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.14 feet
CASING ELEVATION: 34.84 feet
START CARD/TAG ID: 186836/L83983
DRILLING DATES: 10/17/2006 - 10/17/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-23-100

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SM							Bentonite Grout
		ML	Stiff, gray SILT; moist.			5.6			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35			Grades to green-gray.						
			Trace organics (wood).			4.1			
40									
		SM	Medium dense, green-gray, fine, silty SAND with thin silt lenses; wet.			3.8			
45									
						3.4			
		ML	Medium stiff, gray SILT with trace sand.						
50		SP	Loose, gray, fine to medium SAND with some organics (wood mats at various lengths); wet.			2.9			
		SM	Medium dense, gray, silty SAND; moist.						
55						2.9			
		ML	Medium stiff, gray, sandy SILT to SILT; moist.						
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.14 feet
CASING ELEVATION: 34.84 feet
START CARD/TAG ID: 186836/L83983
DRILLING DATES: 10/17/2006 - 10/17/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML				3.4			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
		SM	Medium dense, gray, silty SAND, trace organics; moist.			3.4			
65		SP	Medium dense, gray, fine to medium SAND with some organics (wood); moist.			7.1			
70			Interbedded silt layers from 73-74 ft bgs.						
		ML	Medium stiff, gray-brown, sandy SILT; moist.			5.1			
75		ML	Stiff, gray-green SILT; moist.			5.8			
80		SM	Loose, green-brown, silty SAND; wet.			4.0			
			Silt lenses.						
85		GM	Medium dense, gray, rounded, silty, sandy GRAVEL with trace cobbles; wet.			3.3			
90									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.14 feet
CASING ELEVATION: 34.84 feet
START CARD/TAG ID: 186836/L83983
DRILLING DATES: 10/17/2006 - 10/17/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-23-100

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		GM							Bentonite Grout
									Casing (Schedule 40 PVC, 2.0-inch I.D.)
									20/40 Colorado Silica Sand
						2.8			
95									10/20 Colorado Silica Sand
									Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
								1009-01	
100									Threaded End Cap
			Total depth drilled = 100 ft bgs.						
105									
110									
115									
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.14 feet

CASING ELEVATION: 34.84 feet

START CARD/TAG ID: 186836/L83983

DRILLING DATES: 10/17/2006 - 10/17/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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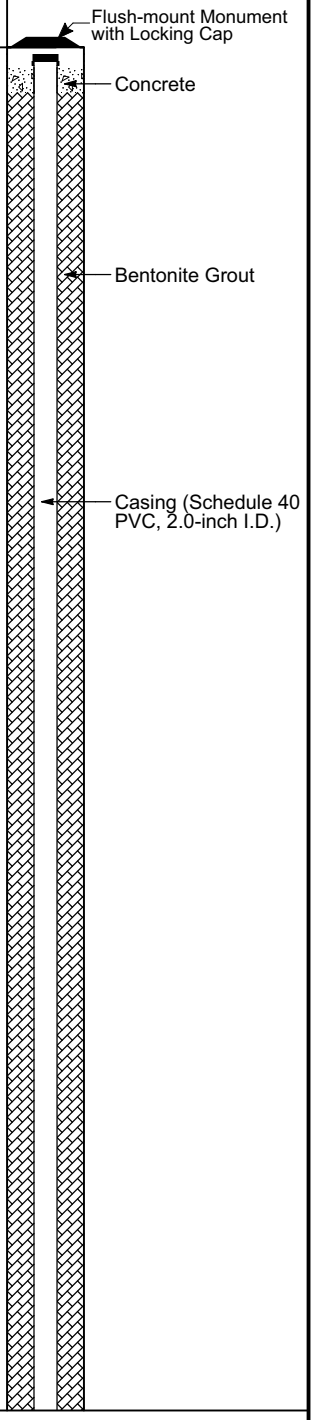
LOG OF BORING RP-23-100

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)
0	GW	GRAVEL, base course.	
		Geotextile.	
	ML	Soft, brown SILT with some fine sand; moist.	1.0
	ML	Medium stiff, green-gray, fine, sandy SILT with trace organics; moist.	
5	SM	Medium dense, gray-green, fine, silty SAND with trace organics (roots); wet.	5.5
	ML	Medium stiff, gray-green SILT with some sand, organics (wood and roots); moist, Slight hydrocarbon-like odor.	
10			4.1
		Sand lens.	2.1
15	GM	Medium dense, gray-green, subangular, silty GRAVEL; wet.	2.3
	SM	Medium dense, gray-green, fine to medium, silty SAND with some organics (roots) and interbedded thin silt layers; moist to wet. Slight hydrocarbon-like odor.	
20			2.9
	SM	Medium dense, mottled brown with gray-green, silty SAND with interbedded silt layers with some organics; moist to wet.	3.5
	SP	Loose, gray-green, fine to medium SAND; moist.	
25	SM	Medium dense, mottled gray-green and brown, silty SAND; moist to wet.	1.2
	SP	Medium dense, mottled gray-green and brown, fine SAND with some silt, trace organics; wet.	
30			

GRAPHIC LOG | SAMPLE | UV LIGHT/ SUDAN IV | GROUNDWATER | FIELD AND LABORATORY TESTING

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.10 feet
CASING ELEVATION: 34.62 feet
START CARD/TAG ID: 186835/L83982
DRILLING DATES: 10/13/2006 - 10/16/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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Portland, Oregon
USA 97224
Tel (503) 639-3400
Fax (503) 620-7892

LOG OF BORING RP-23-125

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SP	Grades to gray-green.			1.7			Bentonite Grout
		ML	Medium stiff, gray-green SILT with some sand, trace organics; moist.			3.3			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35		ML	Medium stiff, gray-green to gray-brown, sandy SILT with trace organics; moist to wet.						
40			Wood (20-inch layer).			3.2			
45		ML	Medium stiff, gray-brown SILT with some fine sand, trace organics (roots); moist.			3.4			
50		SM	Medium dense, gray-brown, fine, silty SAND with some organics (wood); moist.			4.9			
55			Medium to fine SAND.			3.8			
60		ML	Medium stiff, gray-brown SILT with some fine sand; moist.						

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.10 feet
CASING ELEVATION: 34.62 feet
START CARD/TAG ID: 186835/L83982
DRILLING DATES: 10/13/2006 - 10/16/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-23-125

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		SM	Medium dense, gray-brown, fine, silty SAND with trace organics (wood and roots); moist.						Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
						2.1			
65						1.9			
70		ML	Medium stiff, green-gray SILT with some sand; moist.						
						4.3			
75		SM	Medium dense, green-gray, fine, silty SAND, micaceous; wet.						
						4.9			
80									
85		SP	Loose, gray, fine SAND with trace silt; wet.						
						2.9			
		GM	Dense, gray, rounded, silty, sandy GRAVEL; wet.						
90									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 35.10 feet
CASING ELEVATION: 34.62 feet
START CARD/TAG ID: 186835/L83982
DRILLING DATES: 10/13/2006 - 10/16/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		GM							Bentonite Grout
						3.9			Casing (Schedule 40 PVC, 2.0-inch I.D.)
95			Some cobbles.			4.0			
100		CL	Very stiff, gray-green to tan to rust, gravelly, silty CLAY; moist.						
						2.4			
105									
		GM	Dense, dark gray, rounded to subangular, silty, sandy GRAVEL; moist.			2.3			
		ML	Very stiff, bright orange, gravelly, clayey SILT; moist. Grades to brown, light yellow, tan and rust.						
110									
			Yellow-tan to brown.						
115									20/40 Colorado Silica Sand
			Moist.						10/20 Colorado Silica Sand
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.10 feet

CASING ELEVATION: 34.62 feet

START CARD/TAG ID: 186835/L83982

DRILLING DATES: 10/13/2006 - 10/16/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-23-125

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
120		GM	Dense, gray, silty GRAVEL with some sand and cobbles; moist. Grades to tan, rust and brown, angular to subangular, clayey, silty GRAVEL; moist.					1008-01	Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size) 10/20 Colorado Silica Sand Threaded End Cap
125			Total depth drilled = 125 ft bgs.						
130									
135									
140									
145									
150									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.10 feet

CASING ELEVATION: 34.62 feet

START CARD/TAG ID: 186835/L83982

DRILLING DATES: 10/13/2006 - 10/16/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-23-125

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
0	SP	Medium dense, brown, fine SAND with some to trace silt; moist. Some dark gray silt layers.		
			0.2	
5				
	ML	Plywood layer at 7 ft bgs. Gravelly from 7-8 ft bgs. Medium stiff, gray, fine, sandy SILT; moist.	1.2	
	SP	Medium dense, gray, fine SAND with trace silt.		
10				
	ML	Medium stiff, gray SILT with some clay, trace fine sand.	3.0	
	SM	Medium dense, gray, fine, silty SAND with trace gravel and cobbles.		
	ML	Medium stiff, gray SILT with some fine sand, trace clay; moist.		
		Some cobbles from 14-15 ft bgs.	15	
15				
		Sandy SILT, trace gravel. (Sand content increases.)	3.8	
	SM	Medium dense, gray, fine, silty SAND with trace clay.		
20	ML	Cobble at 20 ft bgs. Medium stiff, gray, fine, sandy SILT with trace rounded gravel.		
	SM	Medium dense, gray, fine, silty SAND with trace clay and gravel.	2.5	1023-01
		Medium stiff, gray SILT layer with glass debris at 23-24 ft bgs.		
25		Silt layer from 25-26 ft bgs.		
			3.8	
	ML	Medium stiff, gray, sandy SILT; moist.		
30		Total depth drilled = 30 ft bgs.		

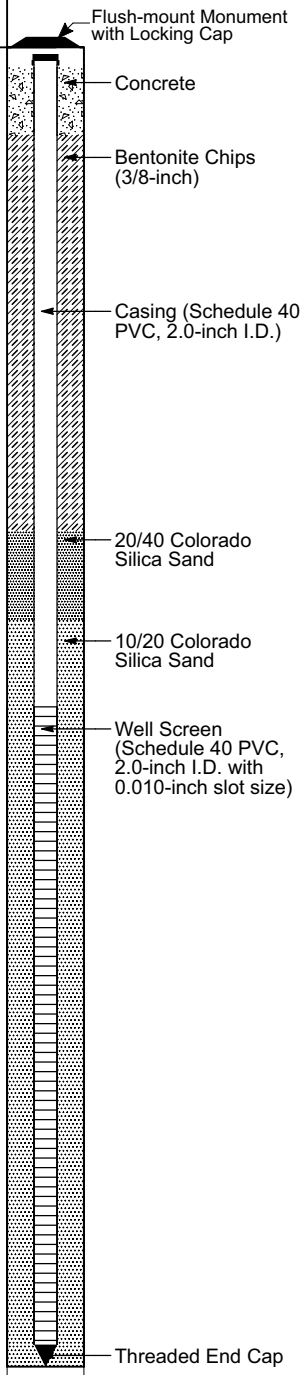
GRAPHIC LOG

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.85 feet

CASING ELEVATION: 35.60 feet

START CARD/TAG ID: 186826/L83973

DRILLING DATES: 11/15/2006 - 11/15/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 20 ft bgs. 6-inch - 20 to 30.5 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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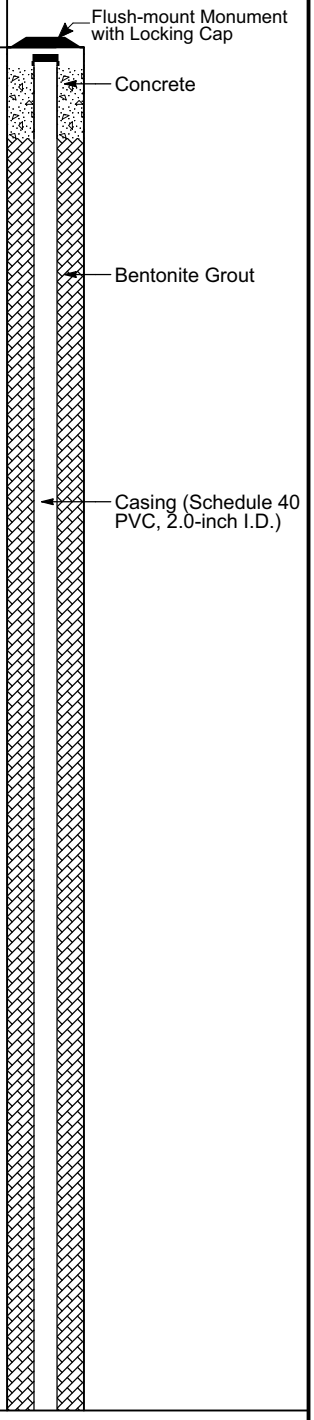
LOG OF BORING RP-24-30

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		ML	Stiff, brown SILT with some fine sand, trace organics (rootlets); moist.					
		SP	Medium dense, brown, fine SAND with some silt, trace organics (wood); moist.					
		ML	Medium stiff, gray, sandy SILT; moist.					
5						0.7		
10		ML	Medium stiff, gray SILT with some clay, trace fine sand and gravel.			1.2		
			Some fine sand, trace brick debris.					
15		SM	Medium dense, gray, fine, silty SAND with trace rounded gravel and clay; moist. Cobbles from 16-16.5 ft bgs.			3.0		
		ML-SM	Medium stiff, gray, fine, sandy SILT interlayered with medium dense, fine, silty SAND.			3.3		
			Cobbles at 19 ft bgs.					
20								
		SM	Medium dense, gray, fine, silty SAND with trace clay, rounded gravel (1-2%); moist.			2.5		
25							▼	
						1.9		
		ML	Medium stiff, gray SILT with some fine sand; moist.					
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 8.0 & 6.0 (in)
DRILL RIG: Mini Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 36.04 feet
CASING ELEVATION: 35.85 feet
START CARD/TAG ID: 186825/L83972
DRILLING DATES: 11/09/2006 - 11/13/2006

REMARKS:
Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 60 ft bgs.

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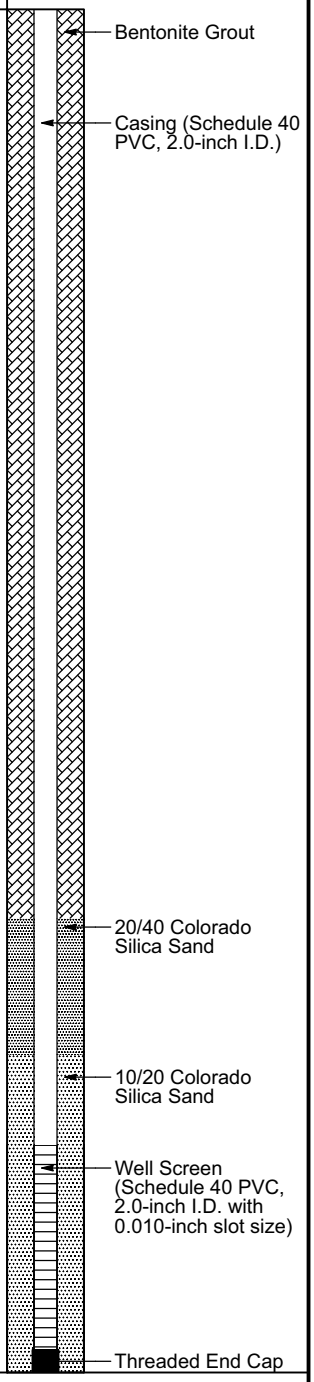
LOG OF BORING RP-24-60

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
30		ML						
		SM	Medium dense, gray, fine, silty SAND with trace gravel (1-2%); moist.			2.3		
35			Becomes wet at 35 ft bgs.					
			Thin, clayey silt layers from 35-40 ft bgs.			1.8		
40		ML	Soft, gray SILT with trace fine sand (10-15%); wet.					
						0.3		
			Fine sand content increases to 20-25% from 44-45 ft bgs.					
45			Color changes to brown.					
						0.3		
50		ML	Medium stiff, brown, sandy SILT; wet.					
55		SP	Medium dense, brown, fine SAND with some to trace silt.					
						0.2		1022-01
60			Total depth drilled = 60 ft bgs.					

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 8.0 & 6.0 (in)
DRILL RIG: Mini Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 36.04 feet
CASING ELEVATION: 35.85 feet
START CARD/TAG ID: 186825/L83972
DRILLING DATES: 11/09/2006 - 11/13/2006

REMARKS:
Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 60 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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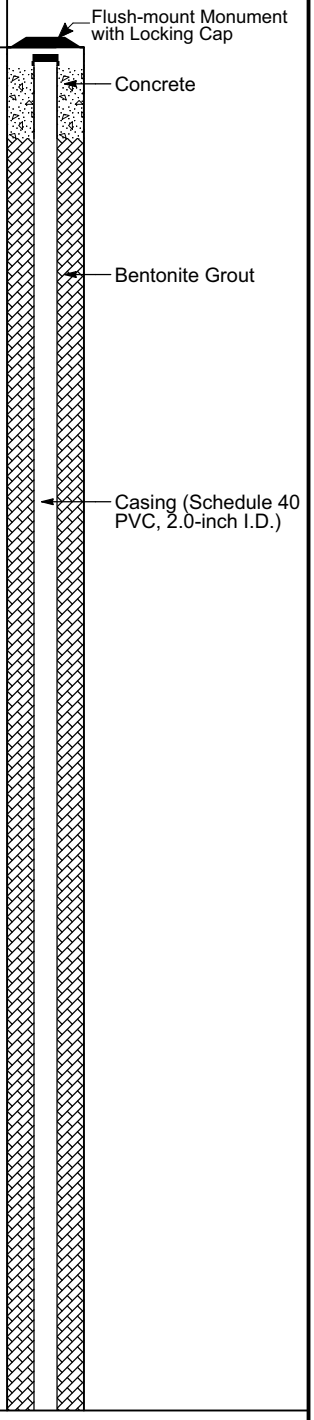
LOG OF BORING RP-24-60

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		ML	Stiff, brown, fine, sandy SILT with trace clay and organics (rootlets); moist.					
		ML	Medium stiff, brown SILT with trace fine sand, clay and gravel; moist.					
5						2.9		
		ML	Medium stiff, gray SILT with some rounded to subrounded gravel, trace clay and fine sand. Gravel content decreases from 7-8 ft bgs.					
		ML	Stiff, gray, fine, sandy SILT with trace gravel; moist.			5.8		
10								
						4.3		
15								
20		ML	Medium stiff, gray, sandy SILT with trace clay and fibrous organics.					
						3.2		
25		SM	Medium dense, gray, fine, silty SAND with trace clay and rounded gravel; moist.					
						3.9		
30		ML	Medium stiff, mottled gray and blue-gray SILT with some fine sand, trace clay; wet.					

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.99 feet

CASING ELEVATION: 35.74 feet

START CARD/TAG ID: 186824/L83971

DRILLING DATES: 11/01/2006 - 11/08/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 74 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML							Bentonite Grout
		ML	Medium stiff, brown SILT with some clay; moist.						
						3.5			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35		ML	Soft, brown SILT with trace fine sand and clay.						
						2.6			
40									
						2.1			
45			No recovery from 45 to 60 ft bgs.						
50									
55									
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.99 feet

CASING ELEVATION: 35.74 feet

START CARD/TAG ID: 186824/L83971

DRILLING DATES: 11/01/2006 - 11/08/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 74 ft bgs.

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DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML							Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.); 20/40 Colorado Silica Sand
65		SP	Loose, brown, fine SAND with trace silt; wet.						10/20 Colorado Silica Sand
		GM	Dense, silty GRAVEL with some sand.						Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
70		SW	Dense, gray, coarse to medium SAND with some rounded to subrounded gravel (40%), trace silt and fine sand; wet.					1021-01	
		CH	Hard, gray and orange-brown CLAY with friable, angular gravel; moist.						Threaded End Cap
			Total depth drilled = 74 ft bgs.						
75									
80									
85									
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 35.99 feet

CASING ELEVATION: 35.74 feet

START CARD/TAG ID: 186824/L83971

DRILLING DATES: 11/01/2006 - 11/08/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 74 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-24-73

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 4/4/07

DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)
0	ML	Stiff. light brown, sandy SILT with trace organics (rootlets); moist.	
	SP	Medium dense, brown, fine SAND, trace silt and organics (wood); moist.	1.7
5	SM-ML	Medium dense, brown, fine to medium, silty SAND with trace clay alternating with clayey silt layers; moist.	
		Color changes to gray and wood layer at 8 ft bgs.	2.7
10		Trace rounded gravel from 10-12 ft bgs.	
		Color changes to brown at 12 ft bgs.	2.5
		Trace organics (wood). Color changes to dark gray at 13.5 ft bgs.	
15			7.9
20	ML	Medium stiff, gray SILT with some clay, trace rounded gravel; moist.	
	SM	Medium dense, gray, fine, silty SAND with trace organics (wood); moist. Clayey silt layer from 22.5-23 ft bgs.	4.4
25	ML	Medium stiff, gray, rounded, coarse, gravelly SILT with some fine sand, trace clay; wet.	
	SM	Medium dense, gray, fine SAND with some silt, trace clay, coarse, rounded gravel, debris (wood and brick); wet.	3.5
	ML	Medium stiff, gray, sandy SILT.	
30			

GRAPHIC LOG

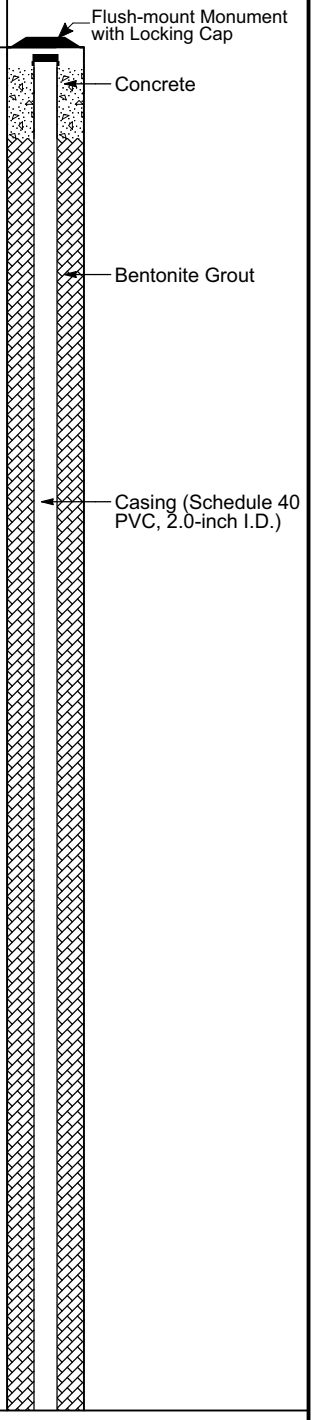
SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

FIELD AND LABORATORY TESTING

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 36.00 feet

CASING ELEVATION: 35.80 feet

START CARD/TAG ID: 186823/L83970

DRILLING DATES: 10/27/2006 - 10/31/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 86 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-24-85

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML	Sheen and hydrocarbon-like odor noted from 30-32.5 ft bgs.			3.5		1018-01	Bentonite Grout
		ML	Stiff, blue-gray SILT with some clay; moist.						Casing (Schedule 40 PVC, 2.0-inch I.D.)
			Becomes wet at 34 ft bgs.						
35		SM-ML	Soft, gray, sandy SILT to fine, silty SAND; wet.						
			Color changes to brown.						
40									
45		SM	Soft, brown, fine, silty SAND; wet.			1.2			
50		ML	Medium stiff, mottled red-brown and brown SILT with trace clay; wet.						
		SP	Loose, brown, fine to medium SAND; wet.						
55			Fine SAND with trace silt.			1.1		1019-01	
60									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 36.00 feet

CASING ELEVATION: 35.80 feet

START CARD/TAG ID: 186823/L83970

DRILLING DATES: 10/27/2006 - 10/31/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 86 ft bgs.

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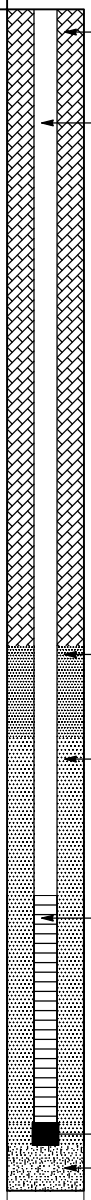
DEPTH (ft bgs)	USCS SYMBOL	SOIL DESCRIPTION	VOLATILE READING (ppm)	FIELD AND LABORATORY TESTING
60	ML	Stiff, brown SILT with some clay.		
	SP	Loose, brown, fine SAND with trace silt.	1.9	
	ML	Very soft, brown, sandy SILT; wet.		
65	GM	Dense, gray, rounded to subrounded, fine to coarse, silty GRAVEL with some sand; wet.		
70	GW	Dense, gray, subrounded to rounded, sandy GRAVEL with trace silt; wet.	1.8	
	GC	Very dense, yellow-brown and orange-brown, angular, clayey GRAVEL with trace sand and silt. Color changes to light gray.		
75				
80		Color changes to medium gray with yellow mottling, gravel content decreases.	0.3	1020-01
85				
90		Total depth drilled = 86 ft bgs.		

SAMPLE

UV LIGHT/ SUDAN IV

GROUNDWATER

WELL SCHEMATIC



BORING METHOD: Sonic

BOREHOLE DIAMETER: 8.0 & 6.0 (in)

DRILL RIG: Mini Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: J. Fassio

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 36.00 feet

CASING ELEVATION: 35.80 feet

START CARD/TAG ID: 186823/L83970

DRILLING DATES: 10/27/2006 - 10/31/2006

REMARKS:

Borehole diameter: 8-inch - 0 to 40 ft bgs. 6-inch - 40 to 86 ft bgs.

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-24-85

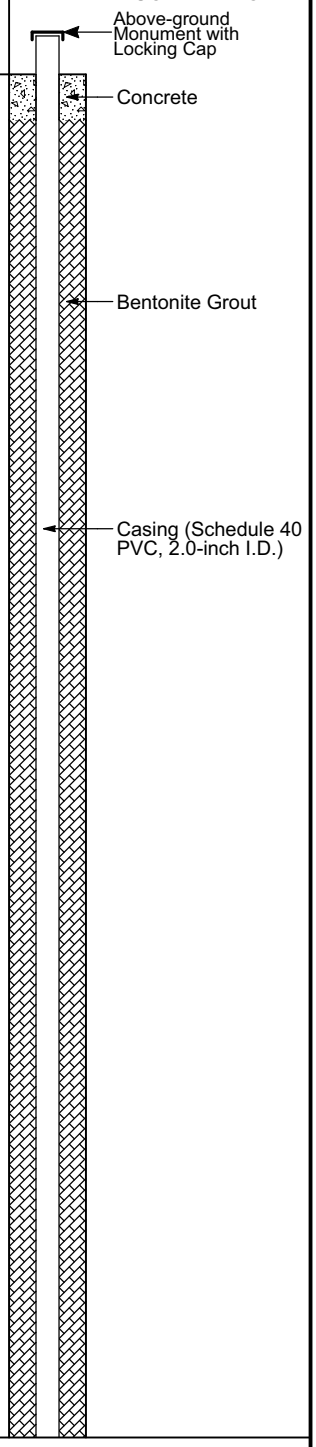
RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

B-2

BNSF Property Boring Logs and Well Construction Diagrams

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		GM	Medium stiff, brown, angular, silty GRAVEL; moist.					
		ML	Medium stiff, brown SILT; moist.			0.3		
			Grades to gray-green, trace sand.					
5								
		SP	Loose, gray, fine SAND; moist.					
		SM-ML	Medium stiff/dense, gray, fine, silty SAND to sandy SILT; moist to wet.			0.9		
10								
						3.5		
			Trace organics (roots).					
15								
		SP	Loose, gray to brown, fine SAND; moist.					
		ML	Soft, gray SILT with some organics; moist to wet.			2.5		
20								
		ML	Medium stiff, mottled gray and brown, sandy SILT with some organics (roots); wet.			0.7		
25							▼	
		SM	Medium dense, gray, fine, silty SAND; wet.			0.6		
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 34.84 feet
CASING ELEVATION: 37.26 feet
START CARD/TAG ID: 186843/L83990
DRILLING DATES: 10/27/2006 - 10/30/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-06-95

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		SM							Bentonite Grout
		ML	Medium stiff to stiff, gray-green SILT with trace fine sand; moist.						Casing (Schedule 40 PVC, 2.0-inch I.D.)
						0.5			
35									
						0.6			
40			Grades to interbedded, sand layers; moist to dry.						
						0.5			
45									
						0.4			
50		SM	Medium dense, gray, fine, silty SAND; wet.						
						0.0			
55		ML	Soft, gray-green, fine, sandy SILT with interbedded, silty sand layers, micaceous; wet.						
						0.0			
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 34.84 feet
CASING ELEVATION: 37.26 feet
START CARD/TAG ID: 186843/L83990
DRILLING DATES: 10/27/2006 - 10/30/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		ML							Bentonite Grout
						0.0			Casing (Schedule 40 PVC, 2.0-inch I.D.)
65									
						0.1			
			Tan, silt layer (2 inches thick).						
70		SP	Loose, gray-green, fine SAND with some silt; wet.						
						1.5			
75			Grades to brown.						
						1.8			
			Trace to no silt.						
80			Micaceous.						
						1.6			
85		GW	Medium dense, brown, rounded, sandy GRAVEL with some silt; wet.						
						1.7			20/40 Colorado Silica Sand
90									10/20 Colorado Silica Sand

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 34.84 feet
CASING ELEVATION: 37.26 feet
START CARD/TAG ID: 186843/L83990
DRILLING DATES: 10/27/2006 - 10/30/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		GW				2.6		1017-01	10/20 Colorado Silica Sand; Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size); Threaded End Cap
95			Total depth drilled = 95 ft bgs.						
100									
105									
110									
115									
120									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.84 feet

CASING ELEVATION: 37.26 feet

START CARD/TAG ID: 186843/L83990

DRILLING DATES: 10/27/2006 - 10/30/2006

REMARKS:

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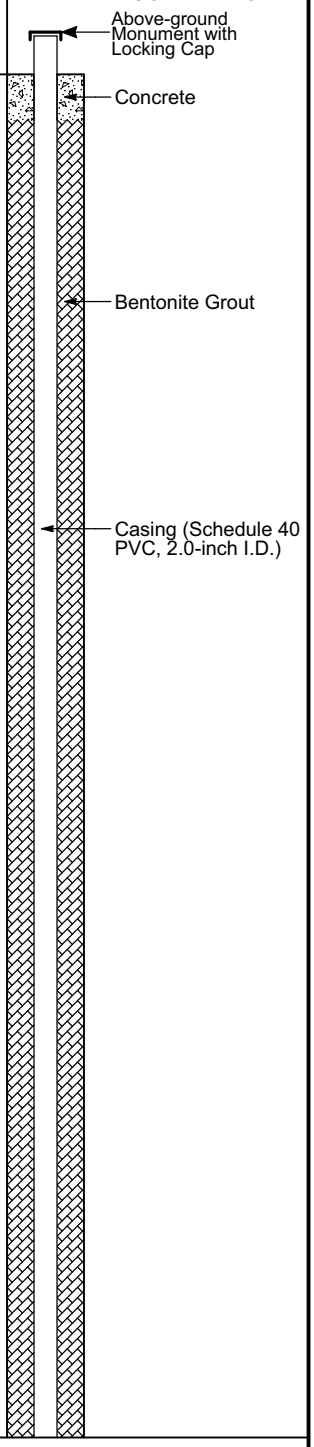
LOG OF BORING RP-06-95

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING
0		GM	Medium dense, brown, angular, silty, sandy GRAVEL; moist.					
		ML	Medium stiff, gray, sandy SILT; moist.			0.4		
5								
		SP	Loose, gray, fine SAND with some silt; moist to dry.			0.8		
		ML	Medium stiff, gray, fine, sandy SILT with organics (roots) and some silty sand layers; moist.					
10								
						1.4		
15			Grades to gray-brown.					
						1.1		
20		SP	Loose, brown, medium SAND with trace rounded gravel; moist.					
		ML	Stiff, mottled green, brown and black SILT with trace fine sand and organics; moist.			0.3		
25		ML	Medium stiff, gray-brown SILT with some fine sand, trace organics (wood and roots); moist.				▼	
			Sand (4-inch layer).			0.2		
30								

WELL SCHEMATIC



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 34.79 feet
CASING ELEVATION: 37.13 feet
START CARD/TAG ID: 186842/L83989
DRILLING DATES: 10/26/2006 - 10/27/2006

REMARKS:

RP - Portland
Stage 2 SCE

0-61M-107030 P69

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LOG OF BORING RP-06-105

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
30		ML							Bentonite Grout
						0.3			Casing (Schedule 40 PVC, 2.0-inch I.D.)
35									
						0.3			
40		SM	Medium dense, gray-green, fine, silty SAND with interbedded silt layers; moist.						
						0.1			
45									
						0.2			
			Sand content increases and becomes wet at 47.5 ft bgs.						
50									
						0.2			
55									
			Grades to brown.						
						0.2			
60									

BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 34.79 feet
CASING ELEVATION: 37.13 feet
START CARD/TAG ID: 186842/L83989
DRILLING DATES: 10/26/2006 - 10/27/2006

REMARKS:

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
60		SM	Grades to gray.						Bentonite Grout
						0.3			Casing (Schedule 40 PVC, 2.0-inch I.D.)
65			Grades to brown.						
						0.3			
70		SP	Loose to medium dense, mottled gray and brown, fine SAND with some silt, micaceous; wet.						
			Becomes brown.						
						0.2			
75			Trace to no silt.						
						0.6			
80									
						0.8			
85		GW-GM	Dense, brown, rounded to subrounded, sandy GRAVEL with some silt, trace cobbles; wet.						
						0.5			
90									

BORING METHOD: Sonic

BOREHOLE DIAMETER: 6.0 (in)

DRILL RIG: Sonic

CONTRACTOR: Boart Longyear

LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A

GROUND SURFACE ELEVATION: 34.79 feet

CASING ELEVATION: 37.13 feet

START CARD/TAG ID: 186842/L83989

DRILLING DATES: 10/26/2006 - 10/27/2006

REMARKS:

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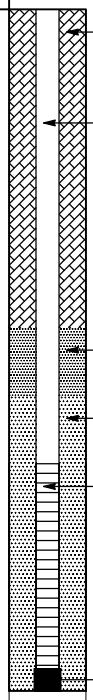
LOG OF BORING RP-06-105

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

DEPTH (ft bgs)	GRAPHIC LOG	USCS SYMBOL	SOIL DESCRIPTION	SAMPLE	UV LIGHT/ SUDAN IV	VOLATILE READING (ppm)	GROUNDWATER	FIELD AND LABORATORY TESTING	WELL SCHEMATIC
90		GW-GM	Grades to gray-green.			0.5			Bentonite Grout; Casing (Schedule 40 PVC, 2.0-inch I.D.)
95		GM	Dense, rust and yellow, angular to subangular, silty GRAVEL with trace clay; wet.			0.1			20/40 Colorado Silica Sand; 10/20 Colorado Silica Sand
100			Grades to olive-gray.					1016-01	Well Screen (Schedule 40 PVC, 2.0-inch I.D. with 0.010-inch slot size)
105			Total depth drilled = 105 ft bgs.						Threaded End Cap
110									
115									
120									



BORING METHOD: Sonic
BOREHOLE DIAMETER: 6.0 (in)
DRILL RIG: Sonic
CONTRACTOR: Boart Longyear
LOGGED BY: B. Lary

ELEVATION REFERENCE: N/A
GROUND SURFACE ELEVATION: 34.79 feet
CASING ELEVATION: 37.13 feet
START CARD/TAG ID: 186842/L83989
DRILLING DATES: 10/26/2006 - 10/27/2006

REMARKS:

RP - Portland
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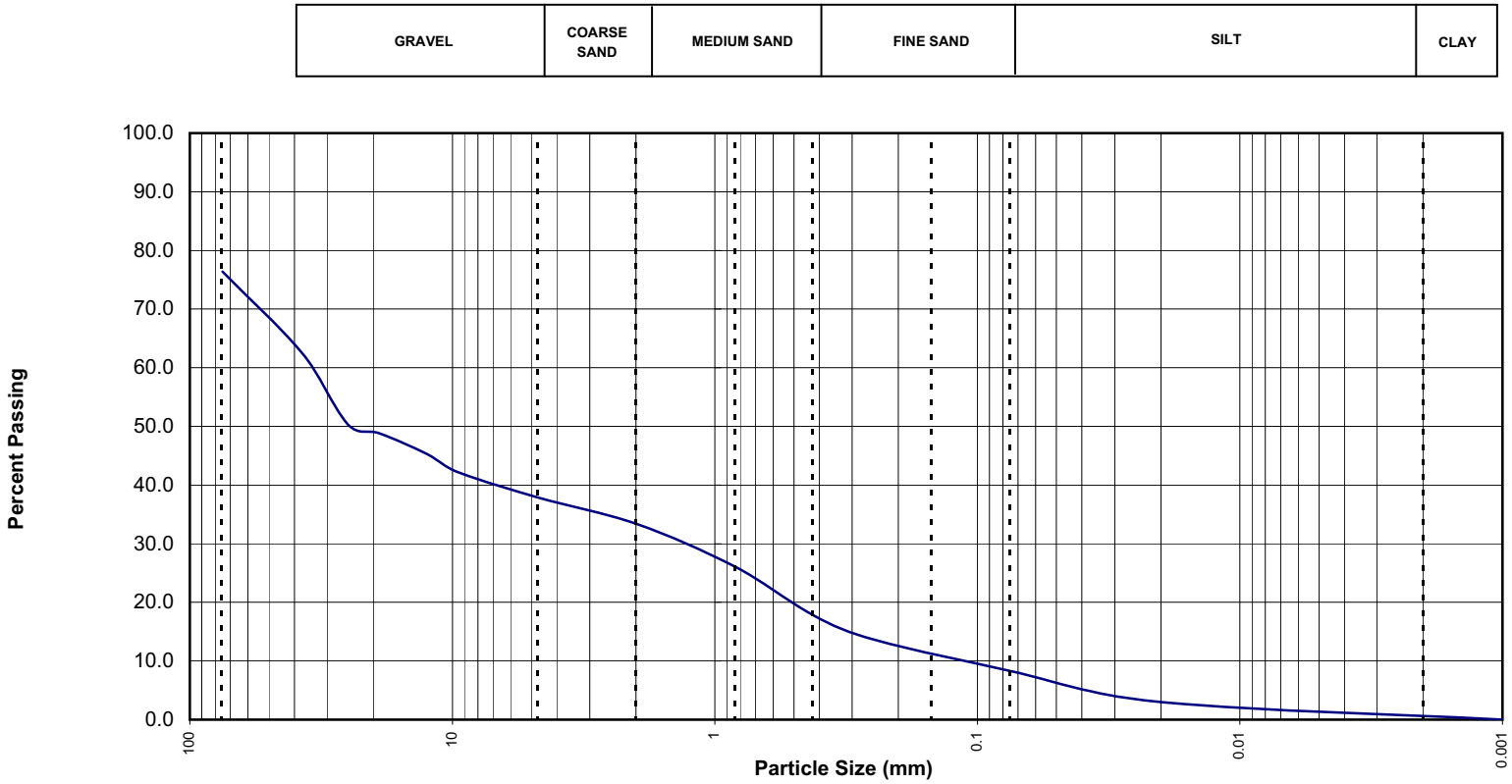
LOG OF BORING RP-06-105

RP_WELL 0-61M-107030-P69.GPJ AMEC PORTLAND.GDT 2/21/07

B-3

Grain Size Analysis

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
MW-03-137	131.5-136.5	3	Poorly graded GRAVEL with silt and sand

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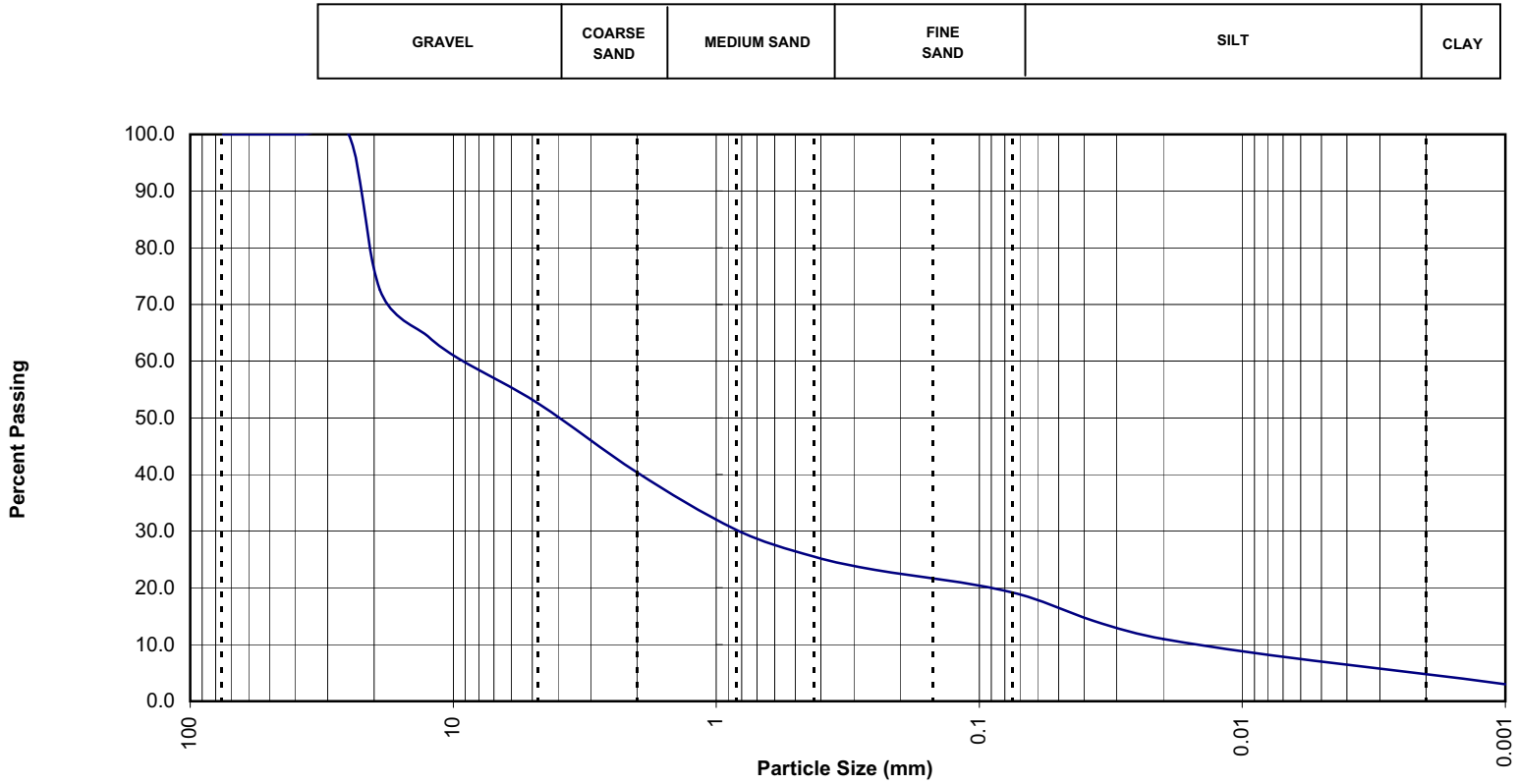
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
MW-03-141	136-141	0.75	Silty GRAVEL with sand

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PARTICLE SIZE ANALYSIS

APPENDIX

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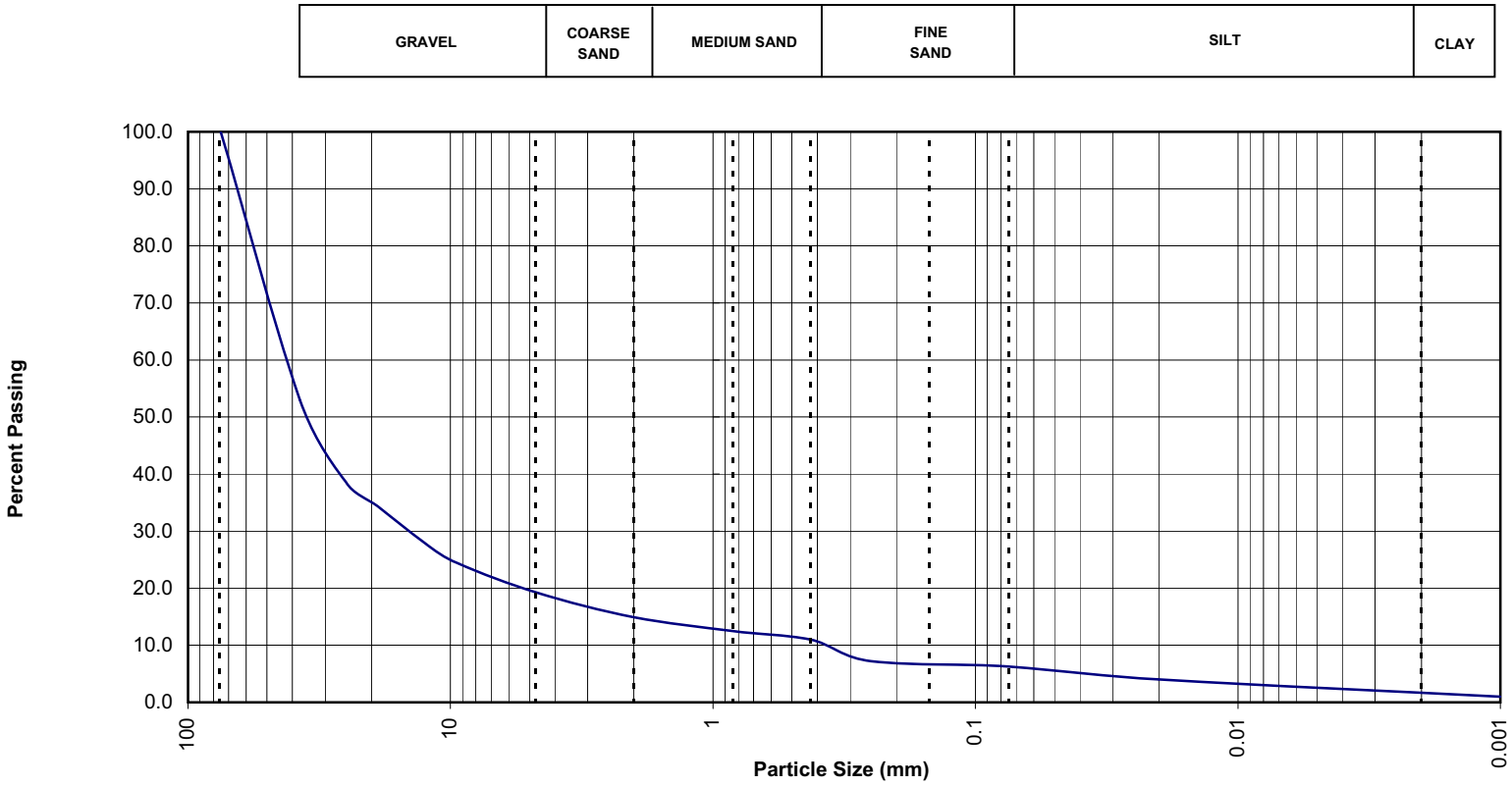
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-06-95	90-95	2	Poorly graded GRAVEL with silt

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PARTICLE SIZE ANALYSIS

APPENDIX

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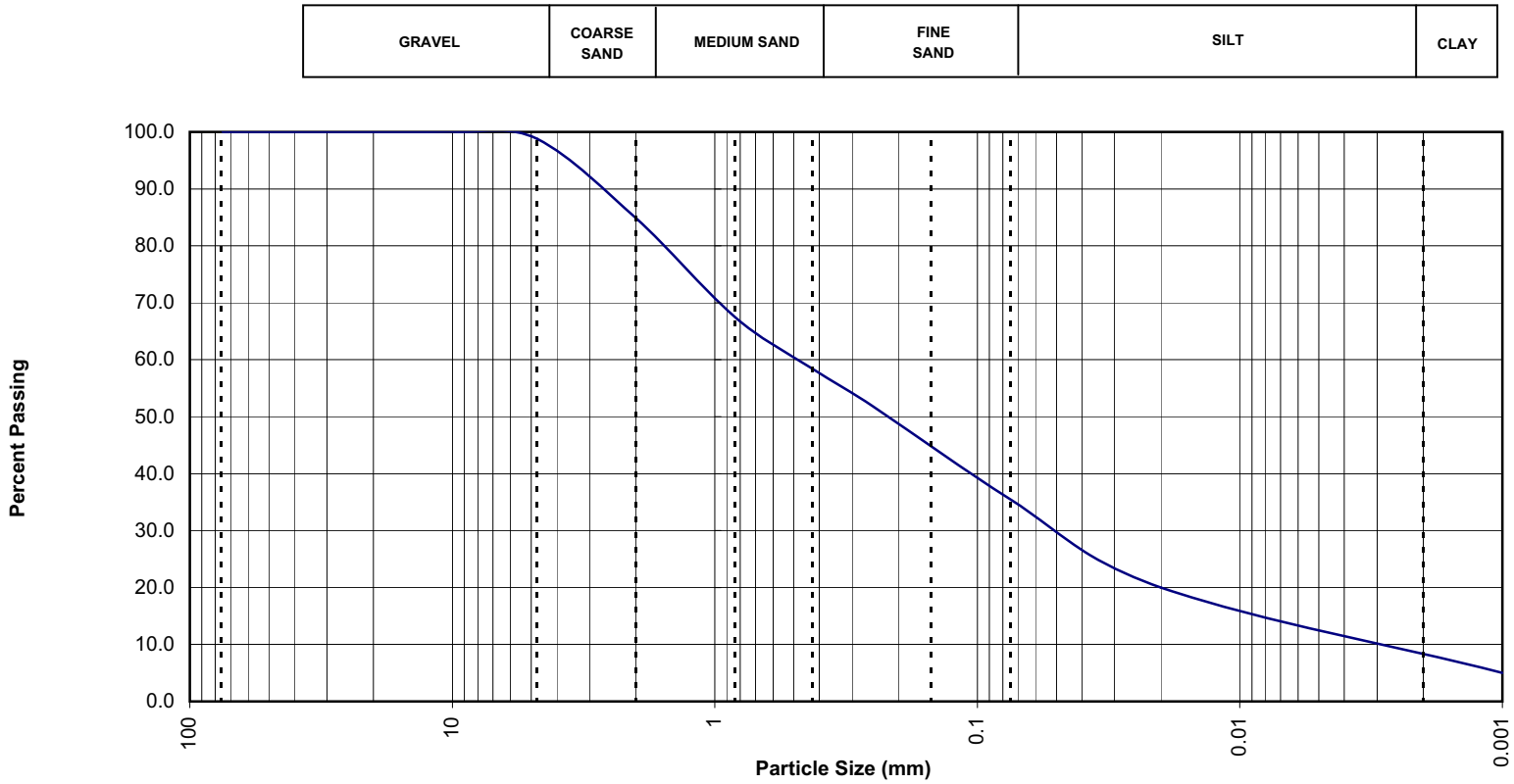
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-06-105	100-105	0.187	Silty SAND

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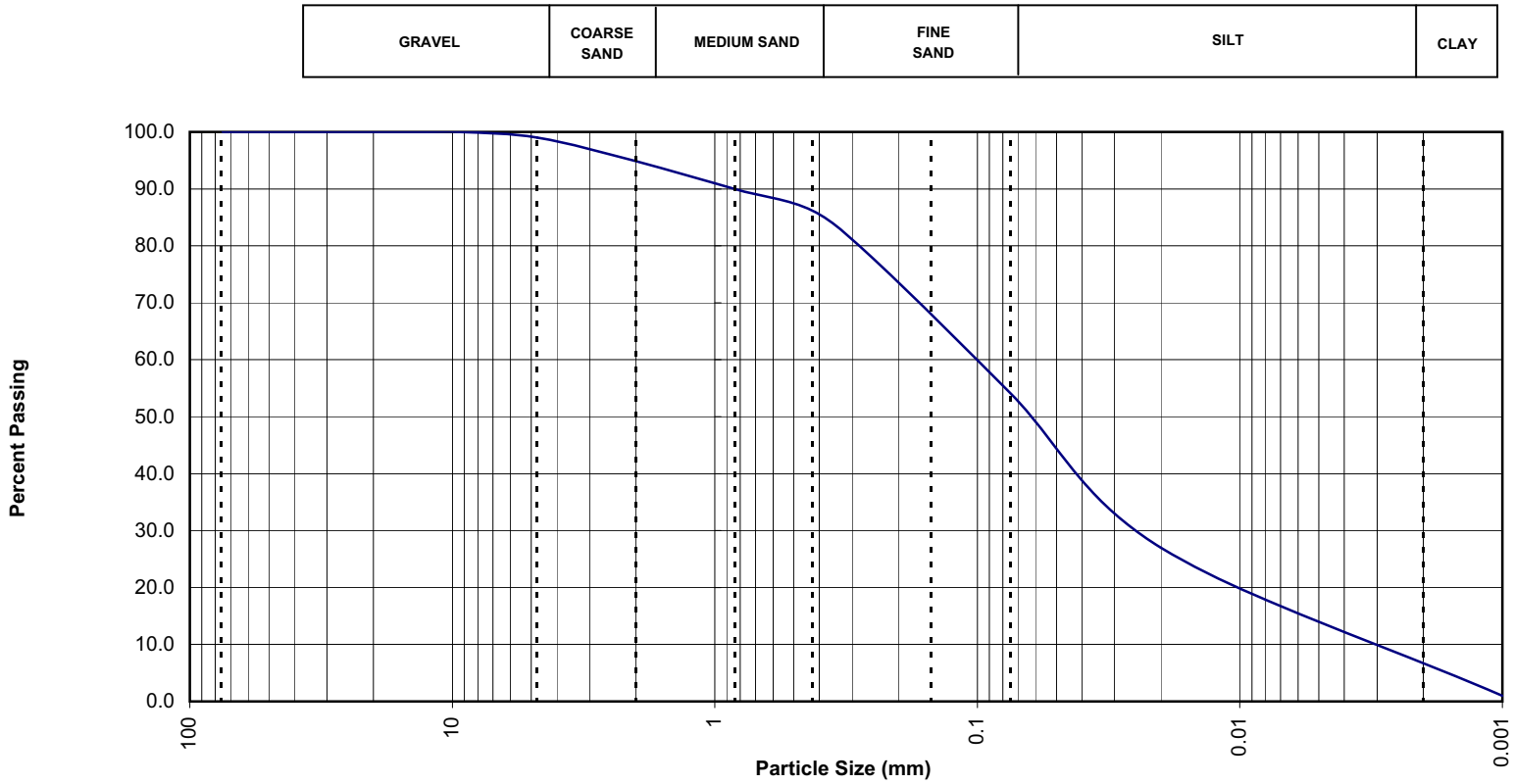
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-20-25	10-25	0.187	Sandy SILT

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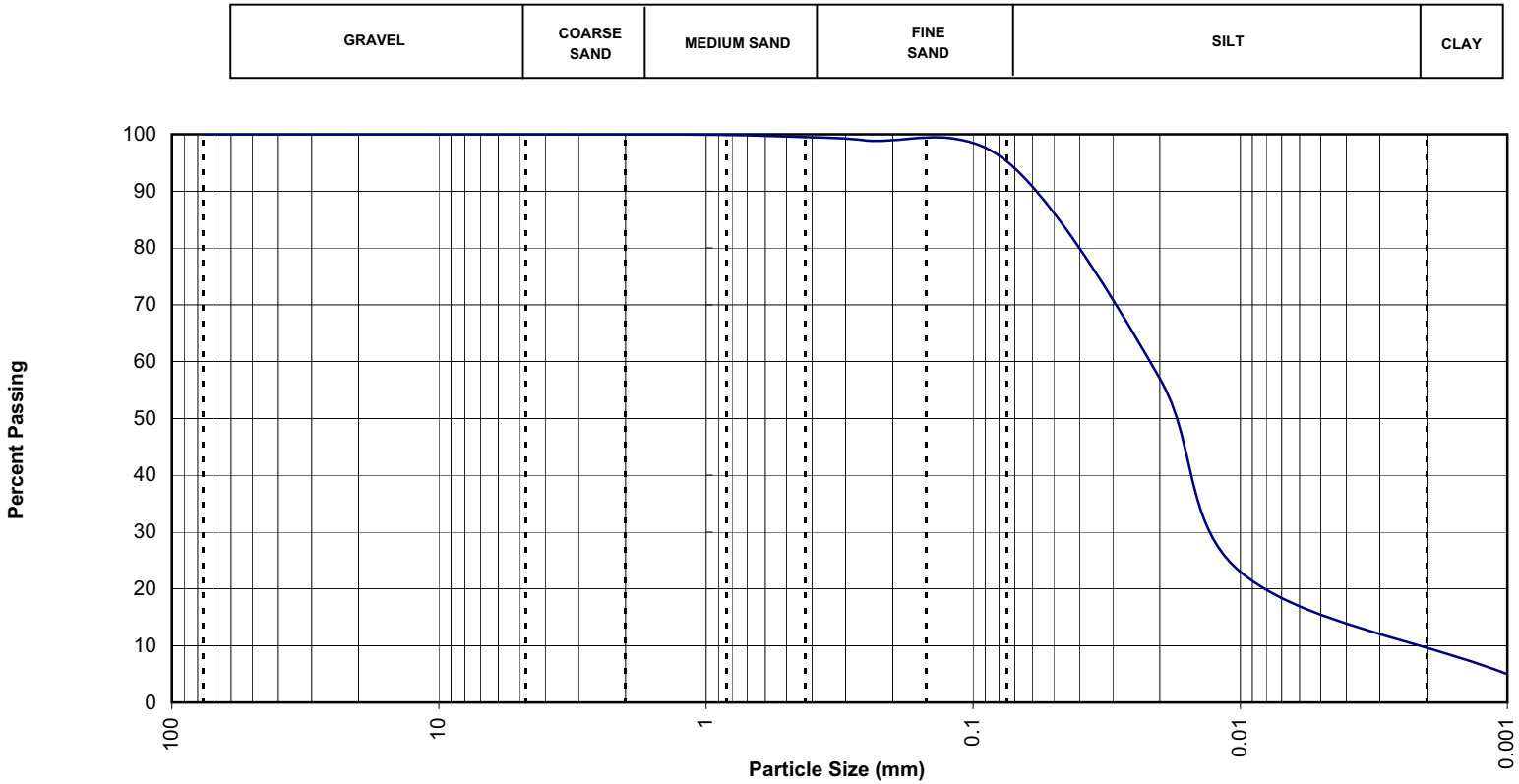
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-20-97	89-91	0.033	SILT

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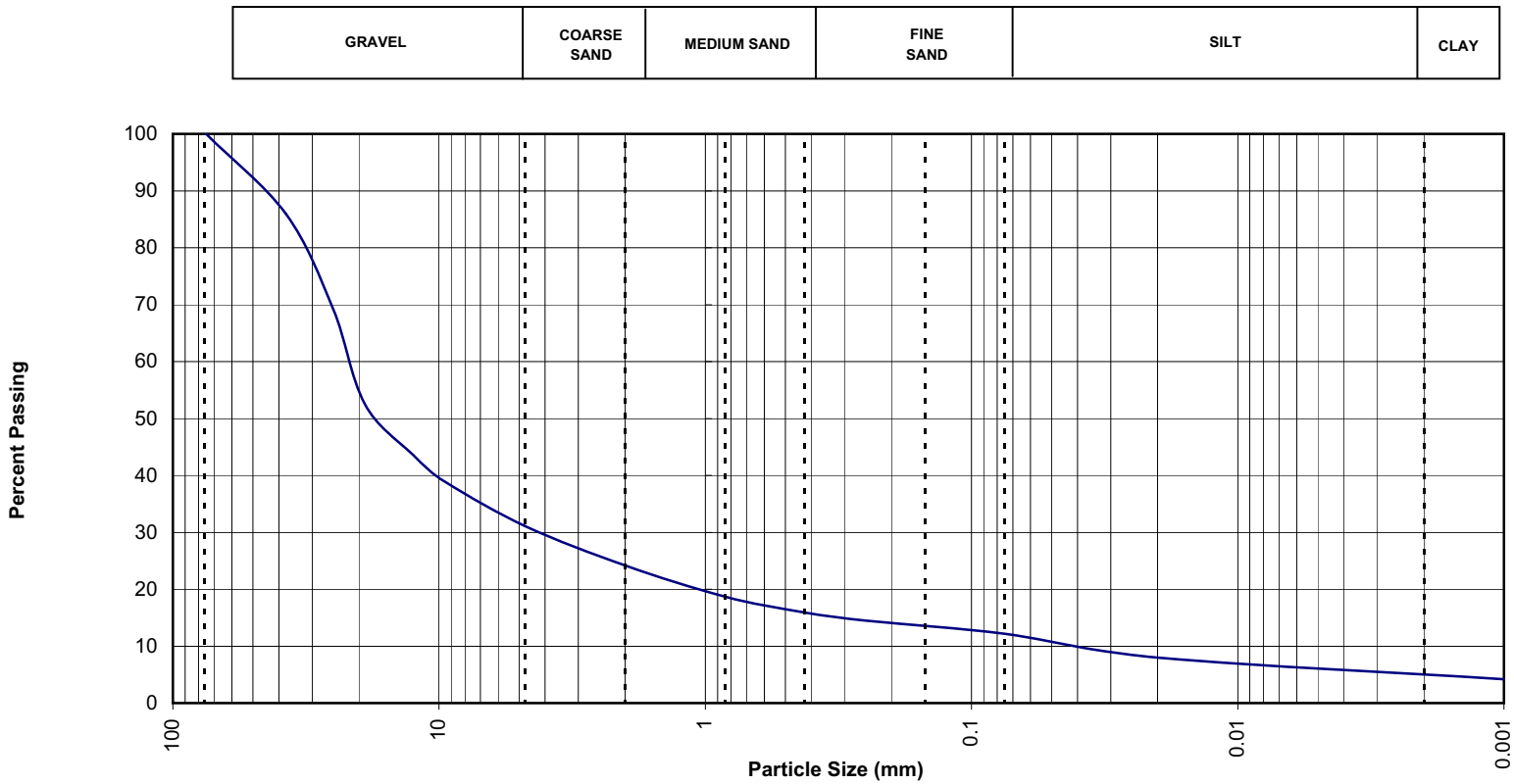
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-20-110	105-109	2	Silty GRAVEL with sand

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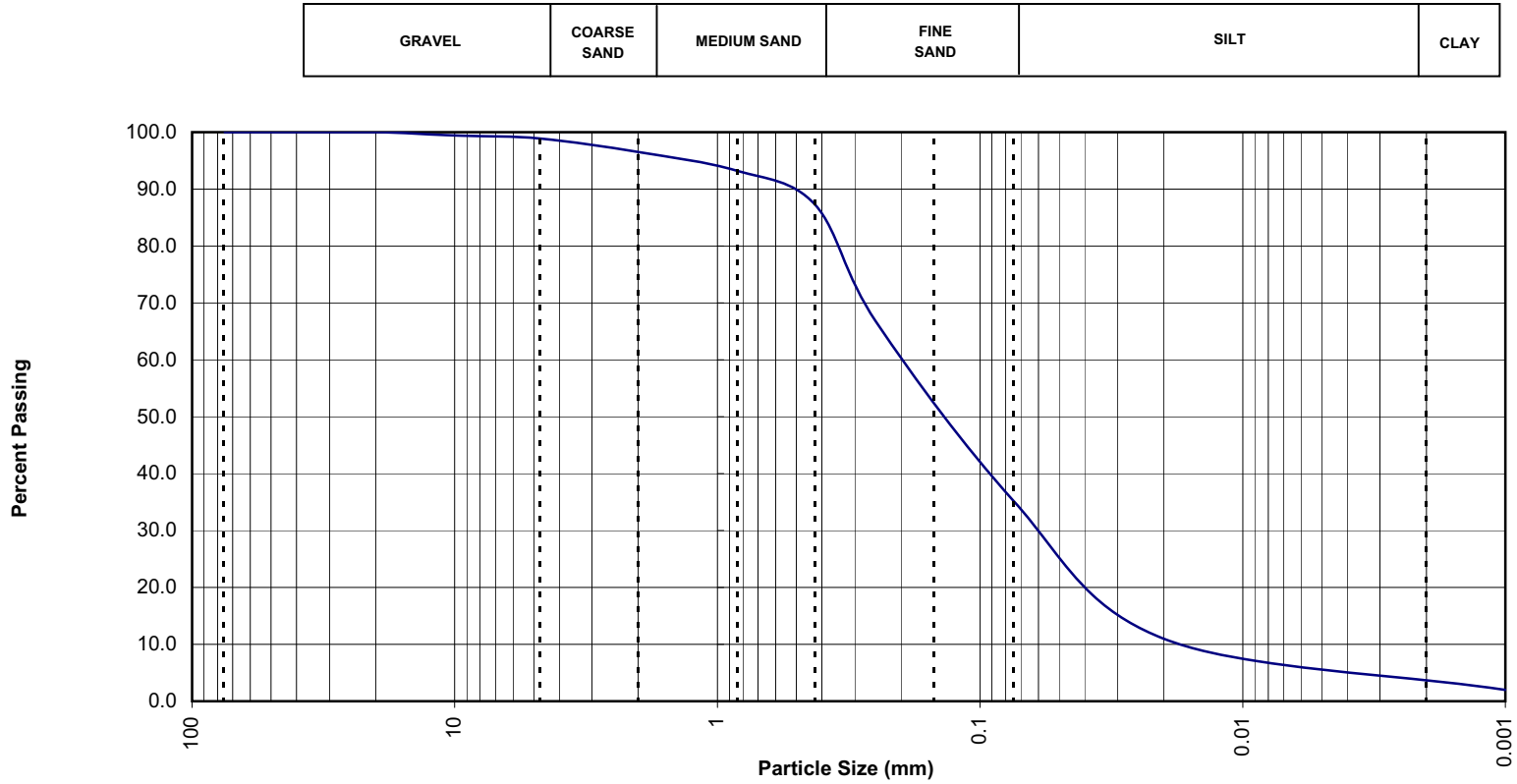
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-21-28	13-28	0.5	Silty SAND

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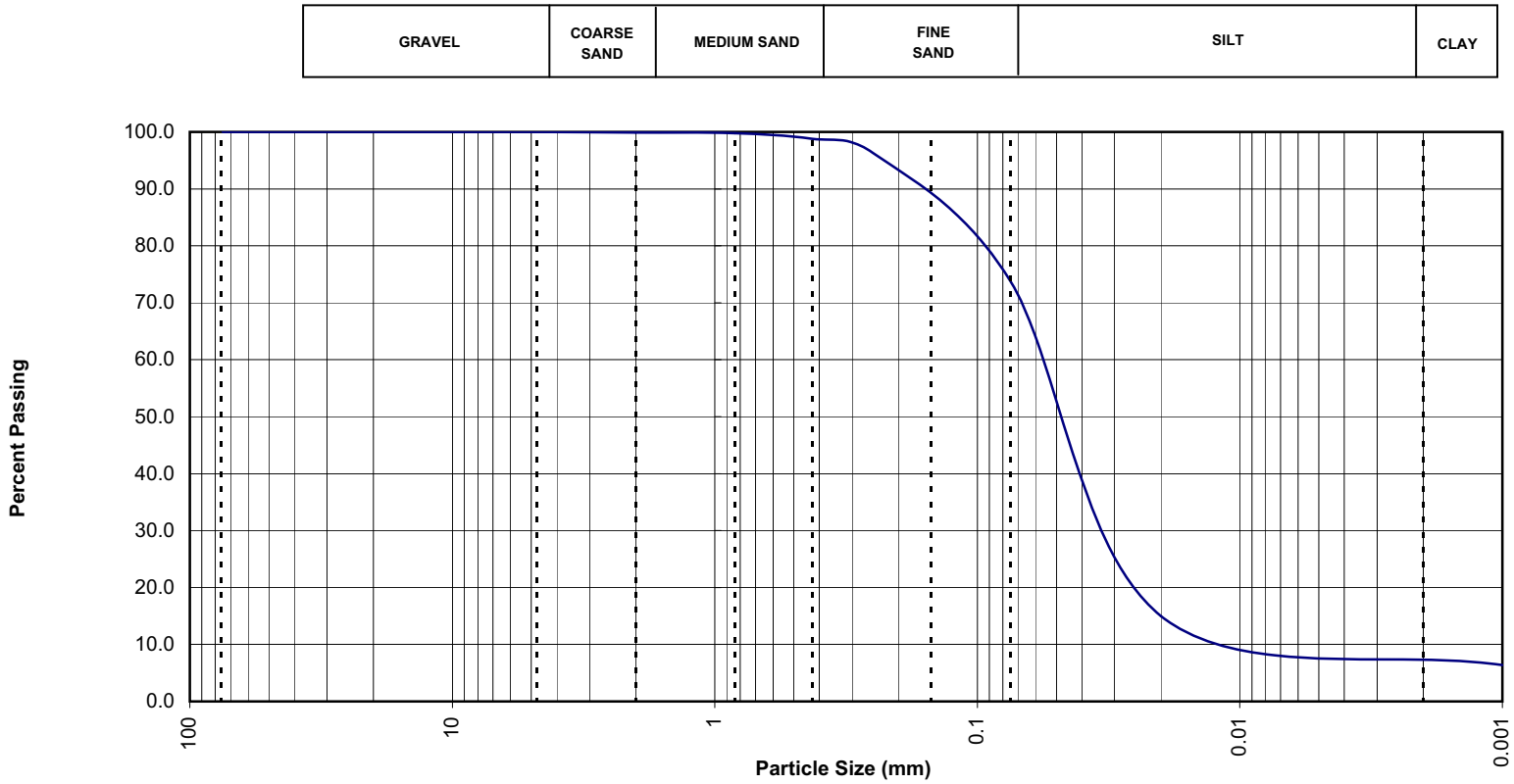
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-21-125	115-123	0.079	SILT with sand

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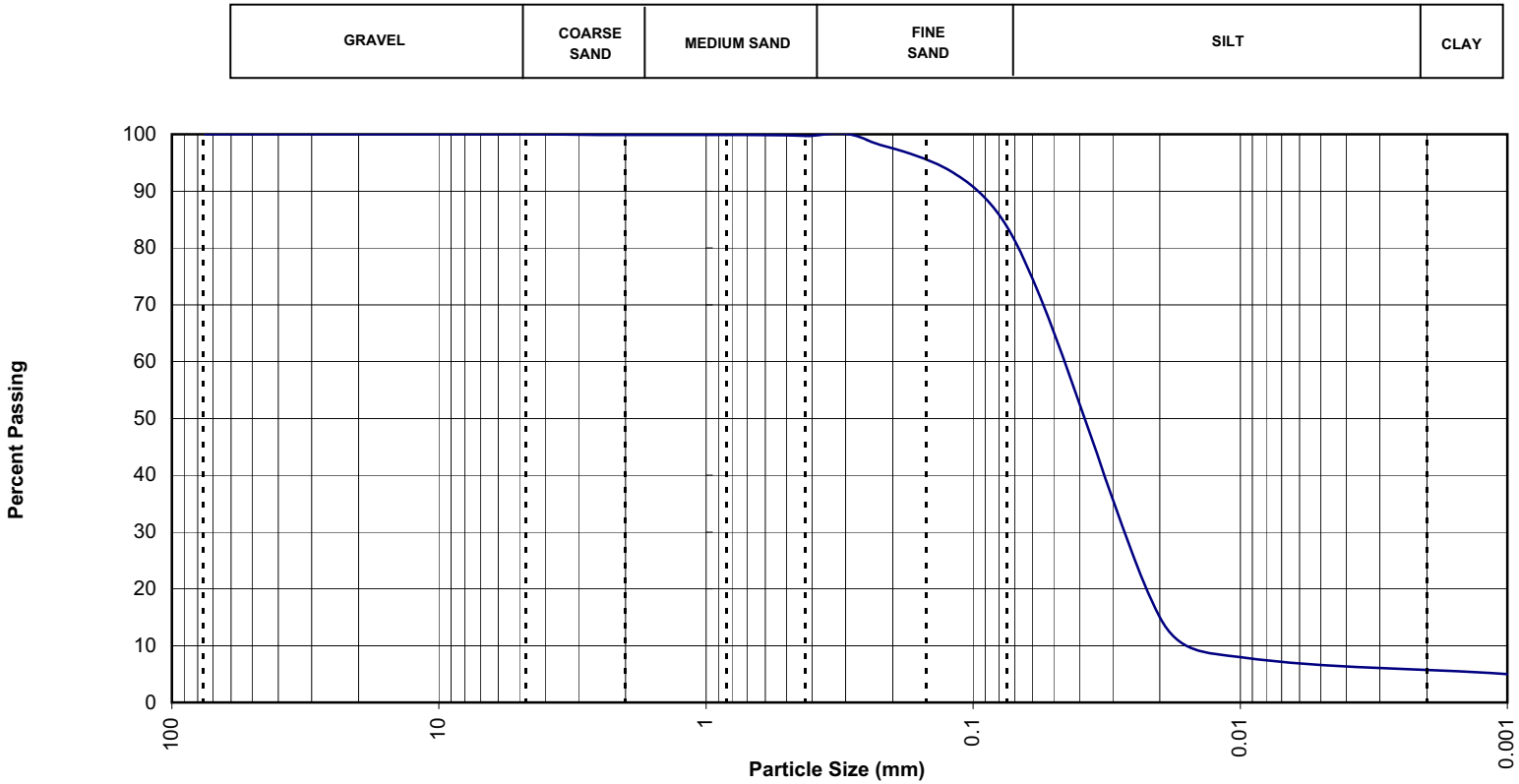
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-21-125	123-125	0.079	SILT with sand

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RP-Portland Site Stage 2 SCE

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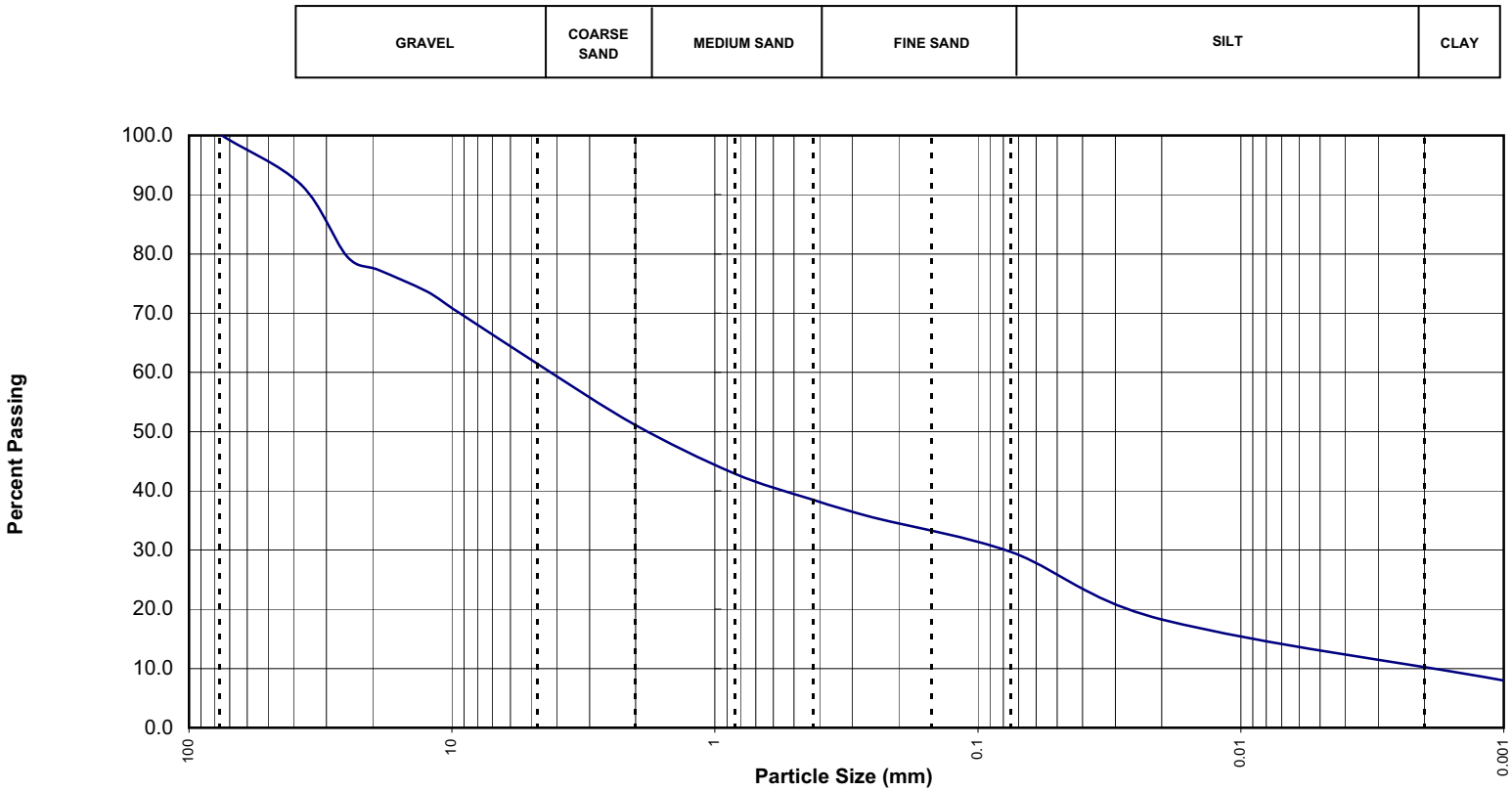
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-21-150	145-150	1.5	Silty GRAVEL with sand

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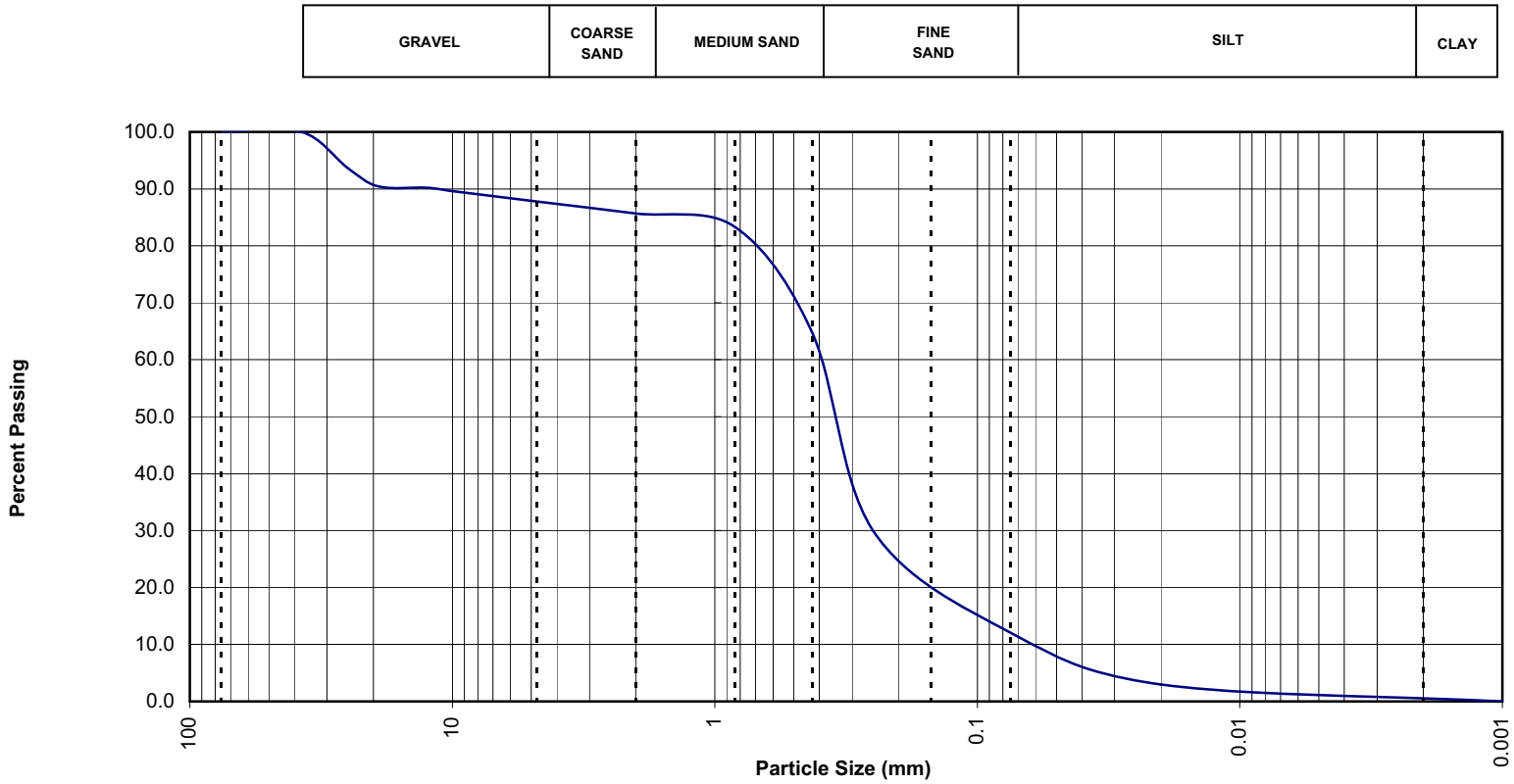
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-22-29	14-29	1	Silty SAND

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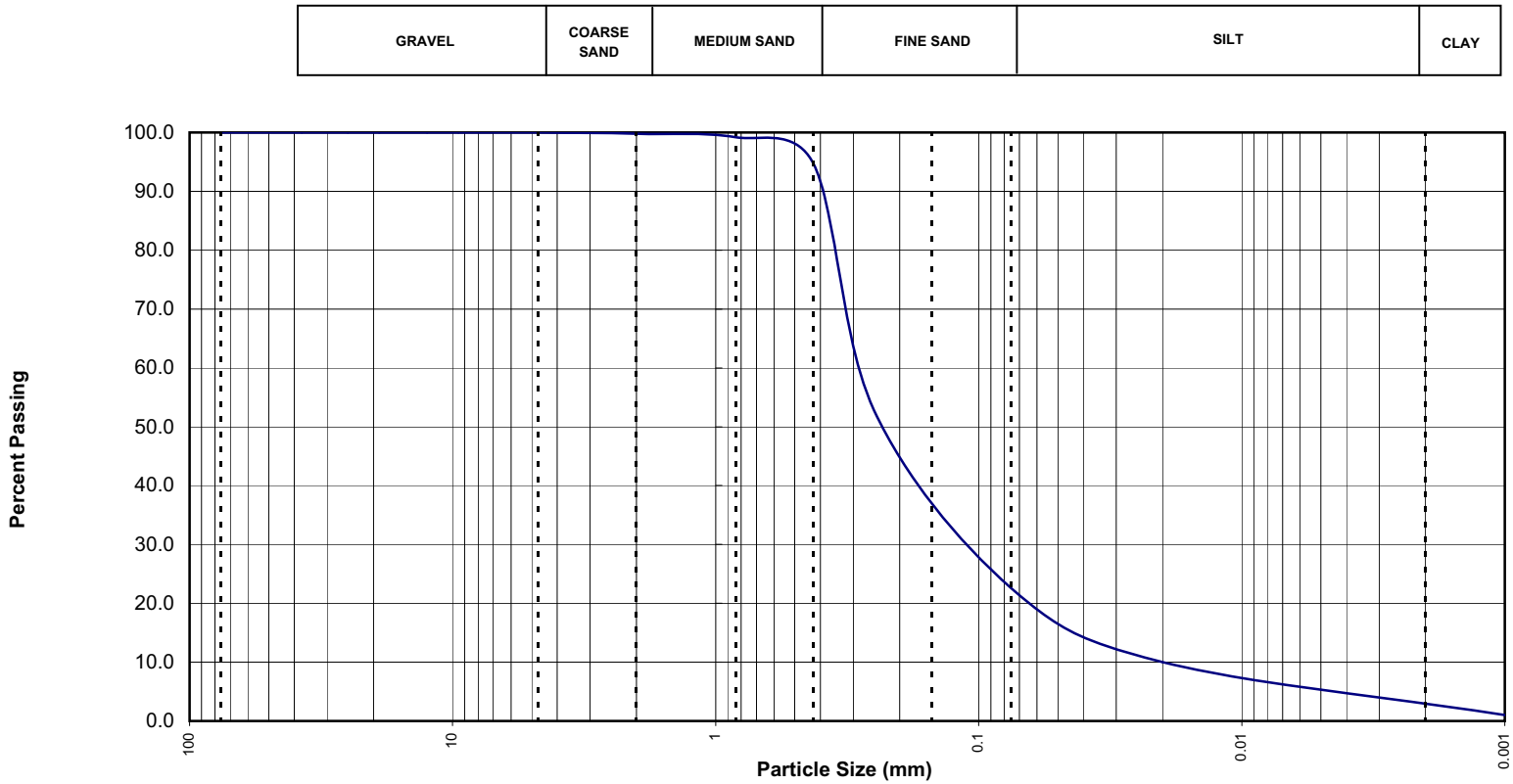
PARTICLE SIZE ANALYSIS

APPENDIX

B-3

Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-22-75	65-73	0.079	Silty SAND

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RP-Portland Site Stage 2 SCE

0-61M-107030 Ph. 69

PARTICLE SIZE ANALYSIS

APPENDIX

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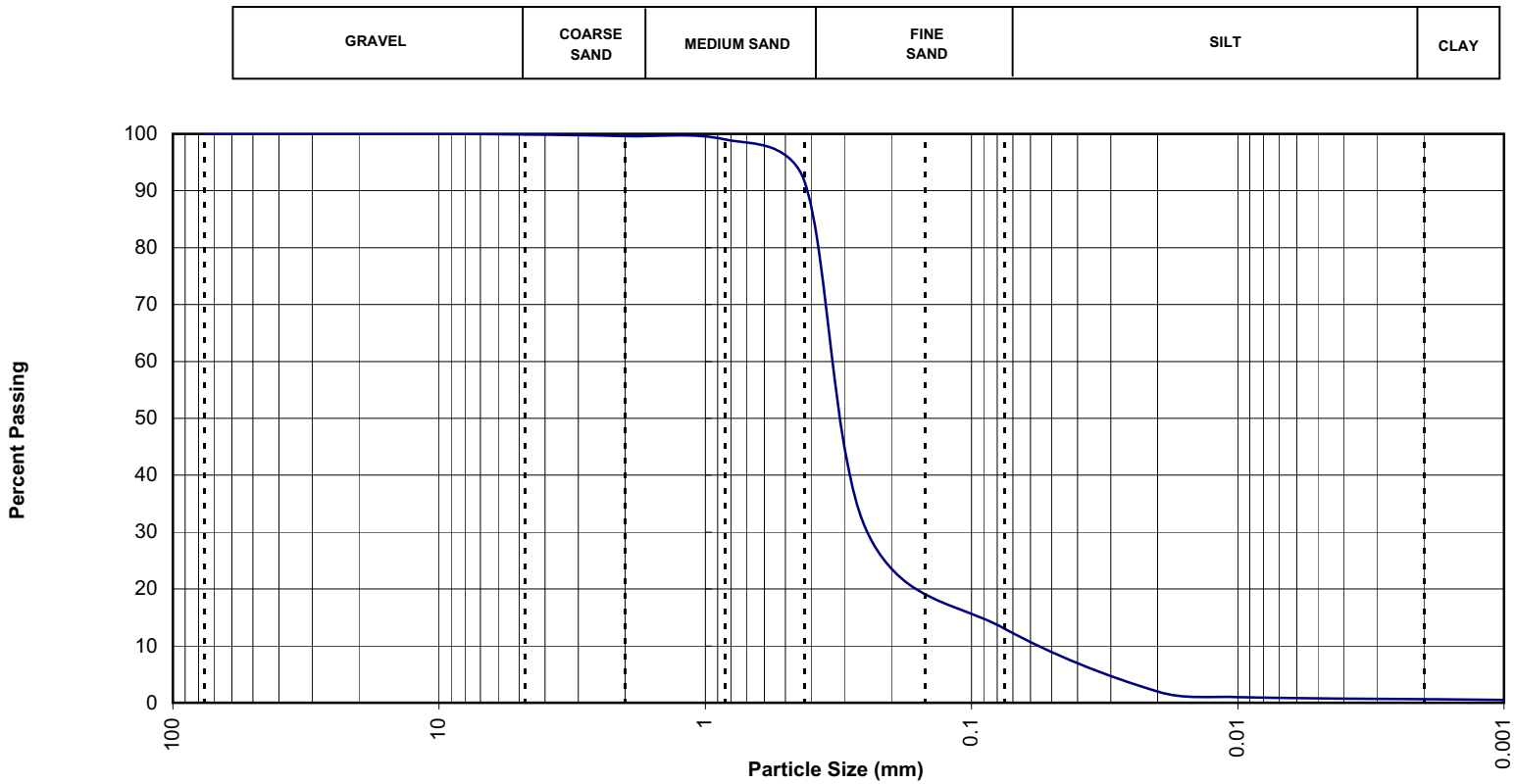
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-22-75	73-75	0.187	Silty SAND

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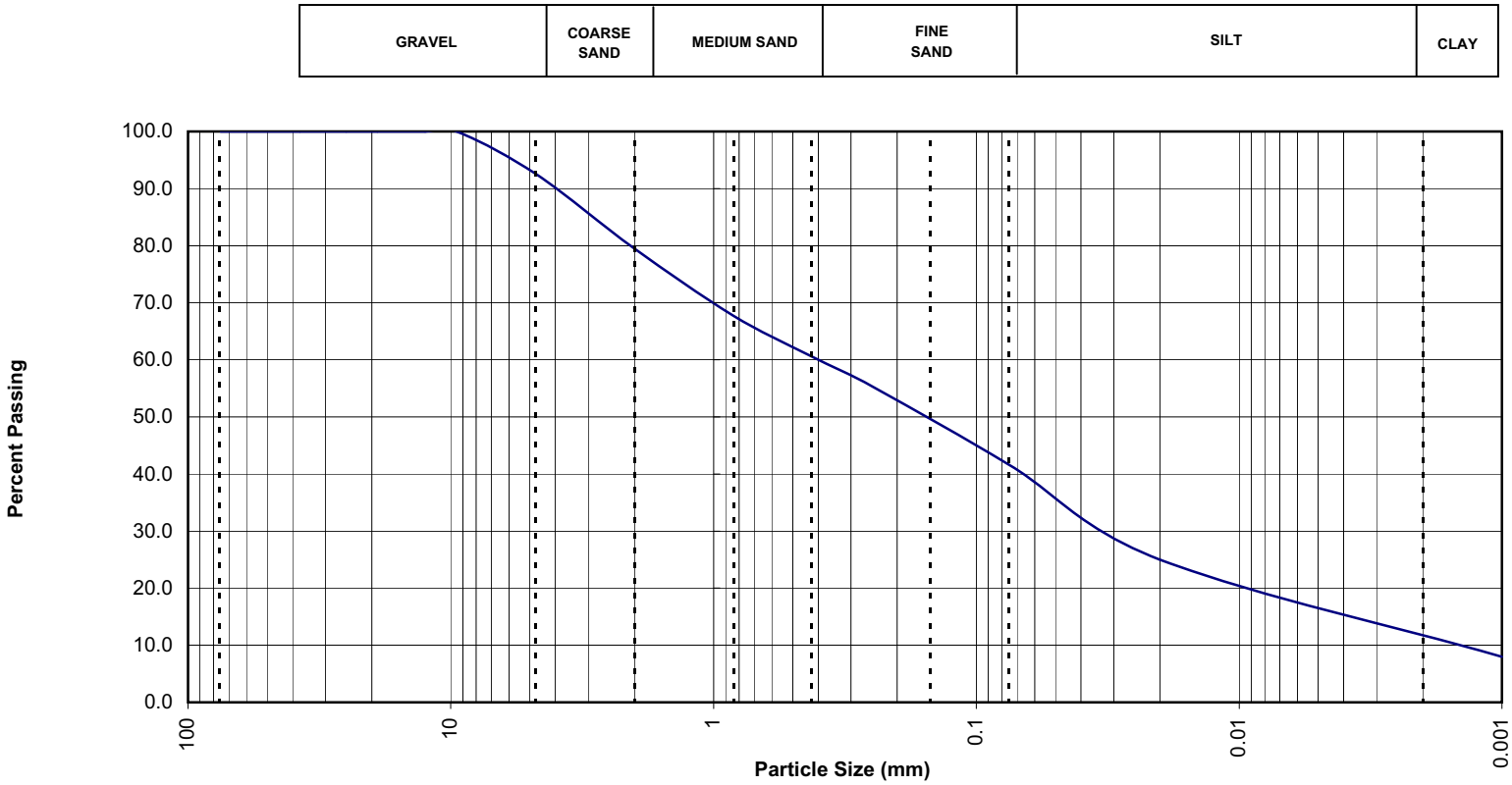
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-22-151	146-151	0.187	Silty SAND

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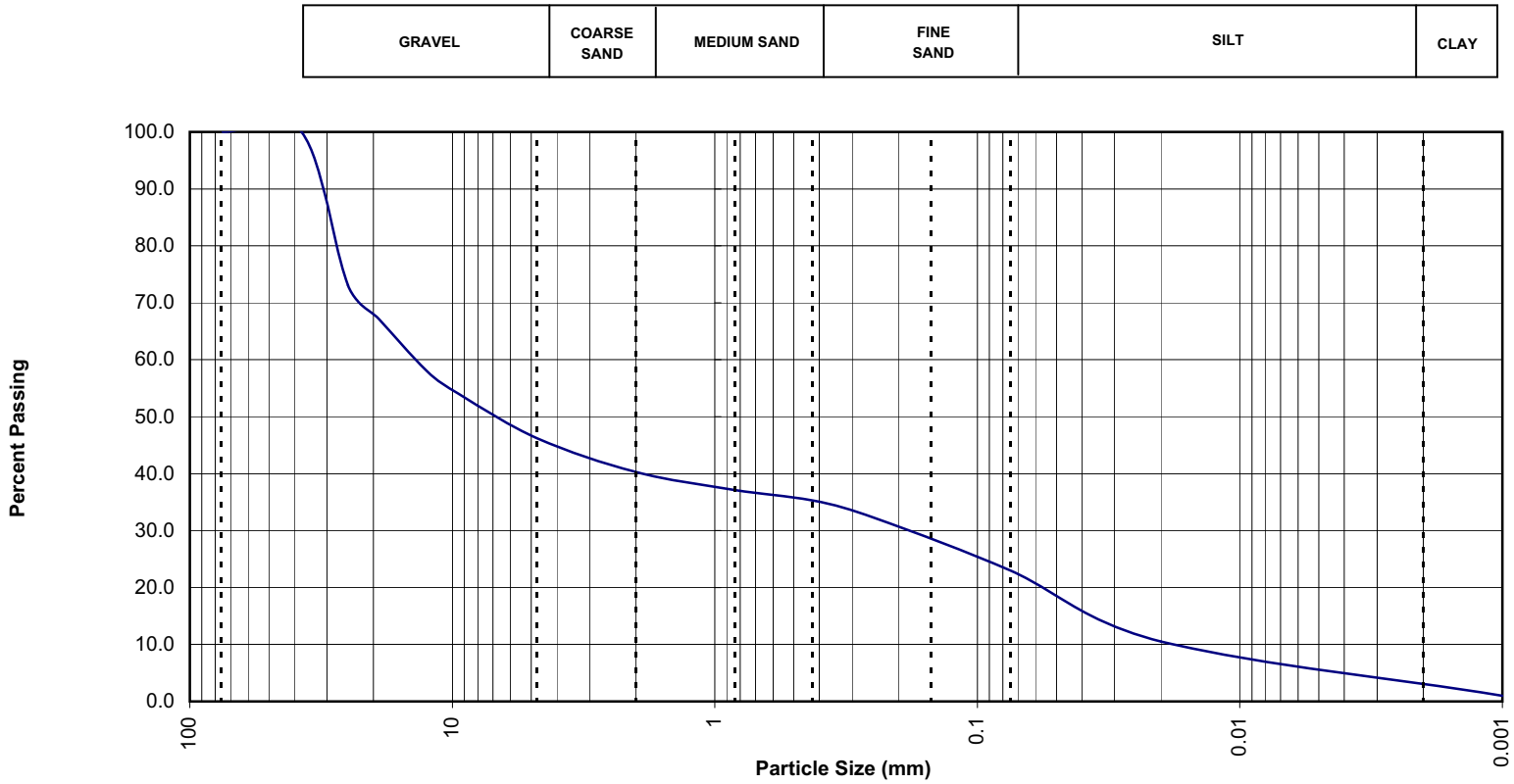

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-23-30	15-19.5	1	Silty GRAVEL with sand

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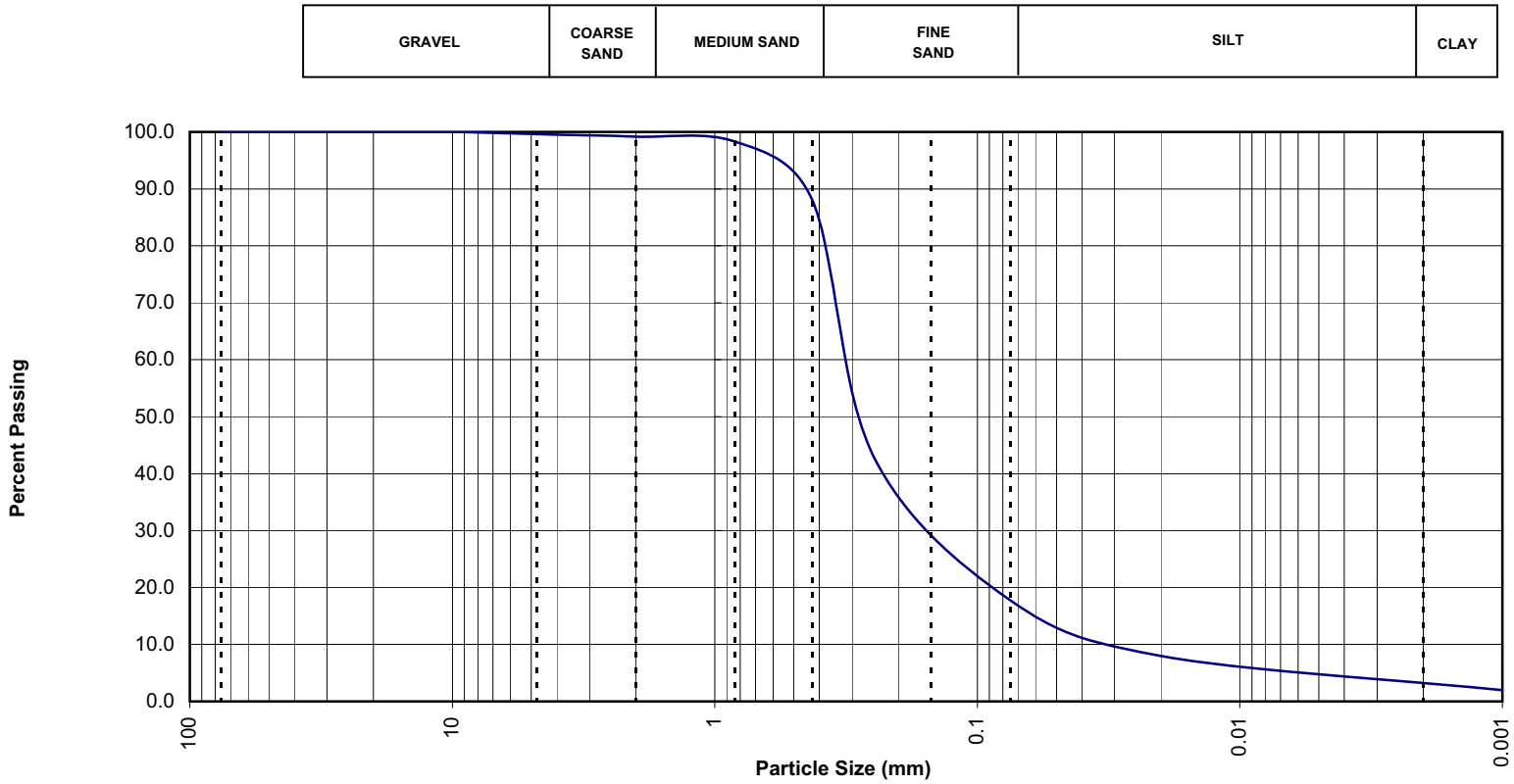

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-23-30	19.5-25	0.187	Silty SAND

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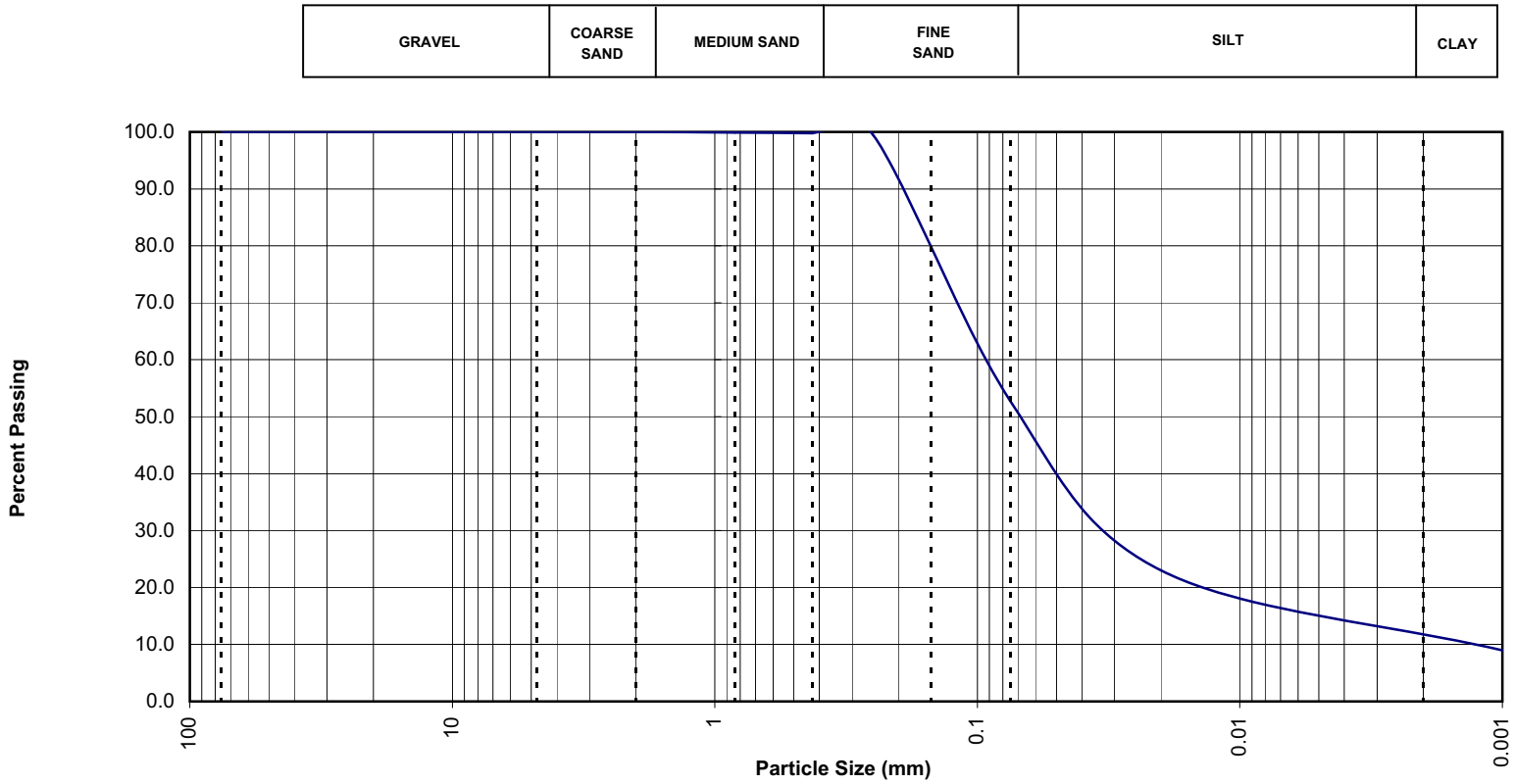

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-23-30	25-30	0.033	Sandy SILT

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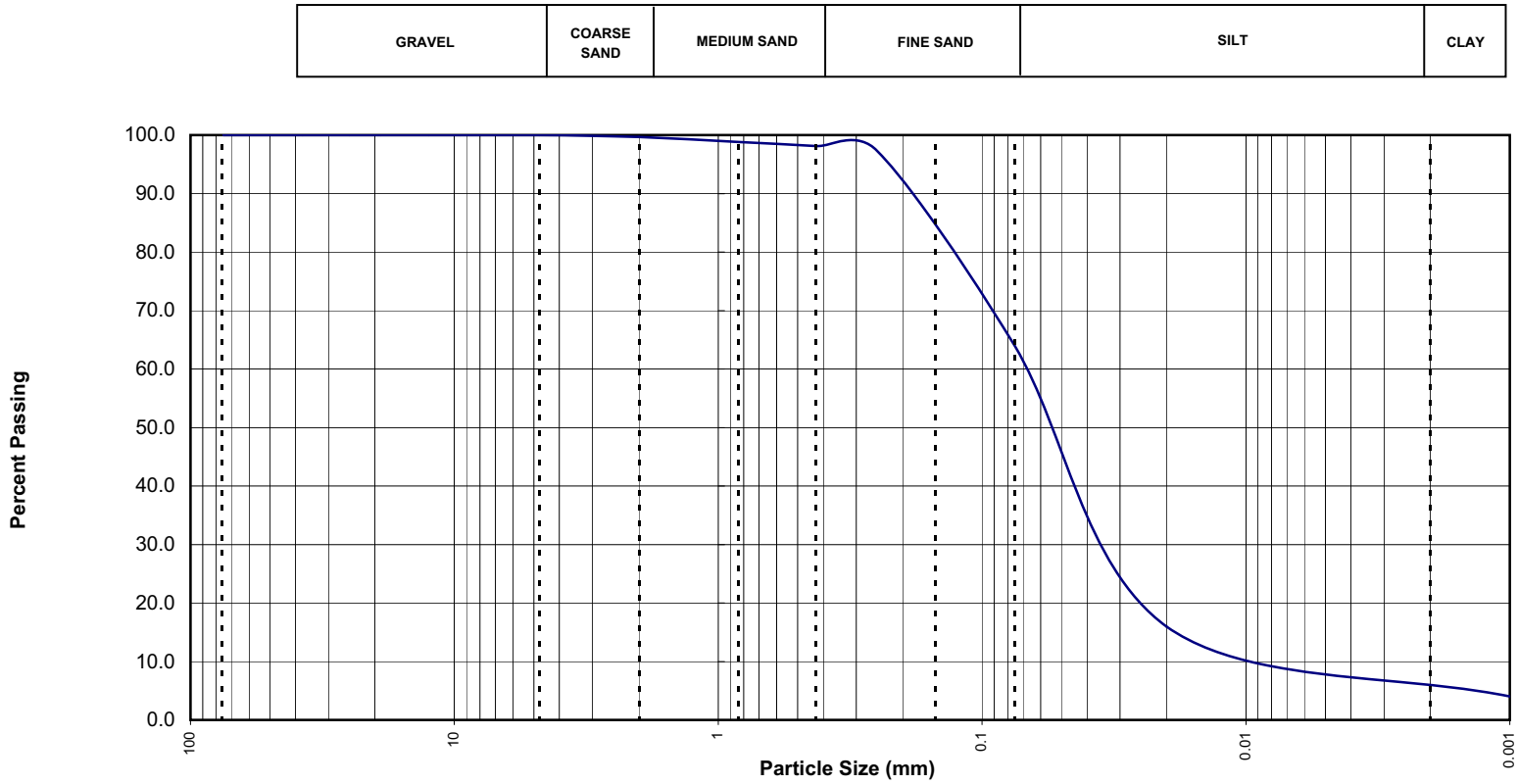

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-23-85	80-85	0.079	Sandy SILT

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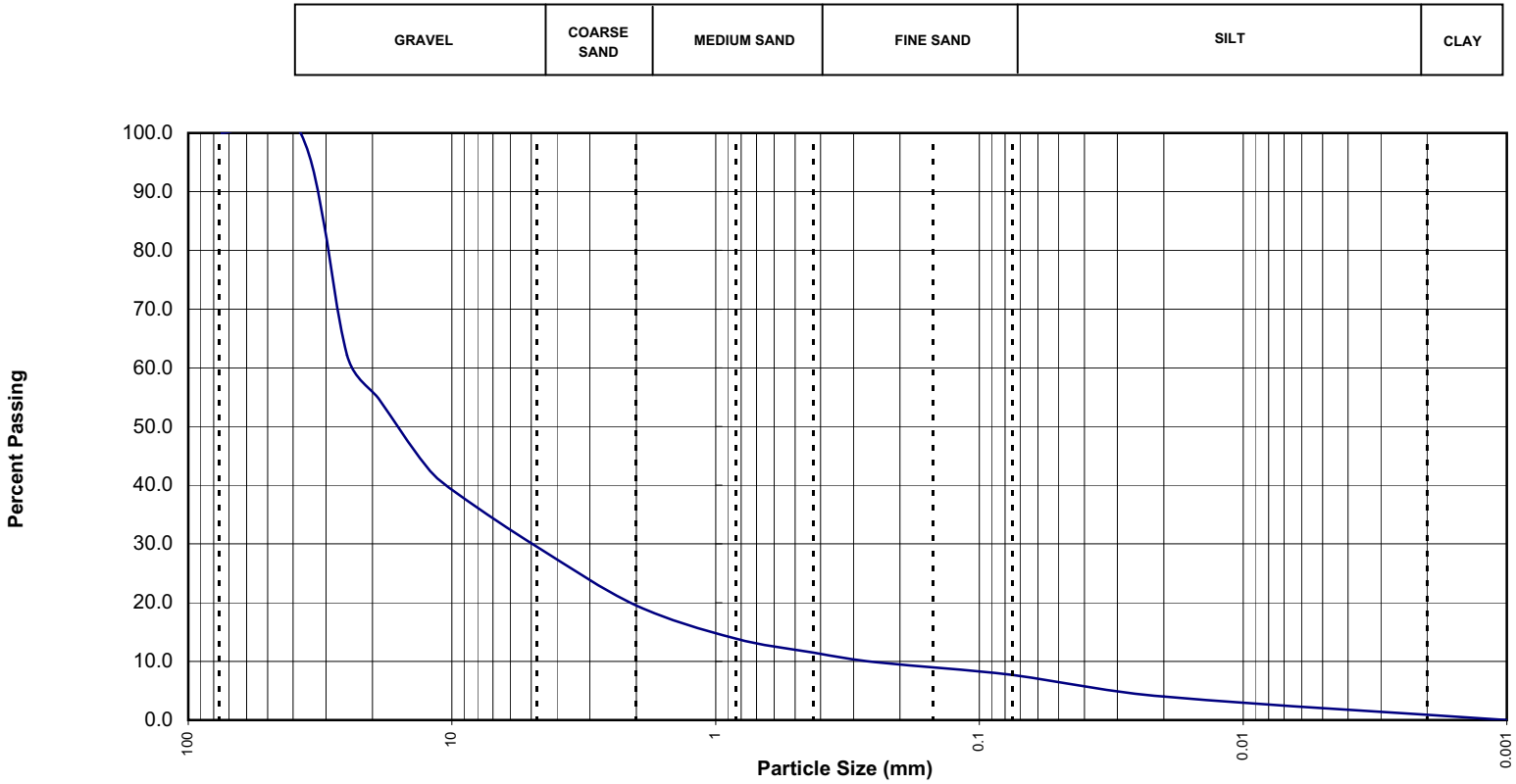

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-23-100	95-100	1	Poorly graded GRAVEL with silt and sand

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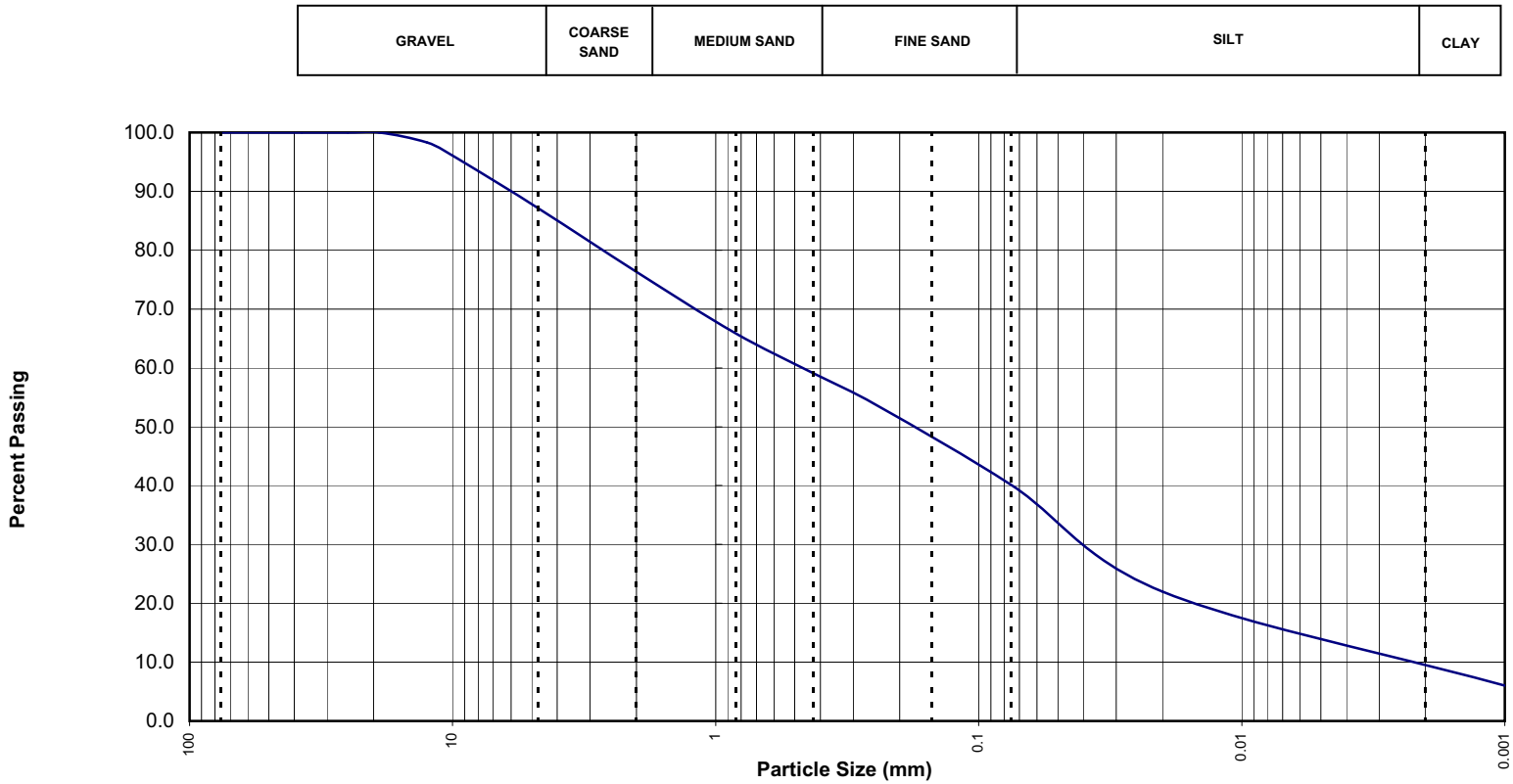

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-23-125	120-125	0.5	Silty SAND

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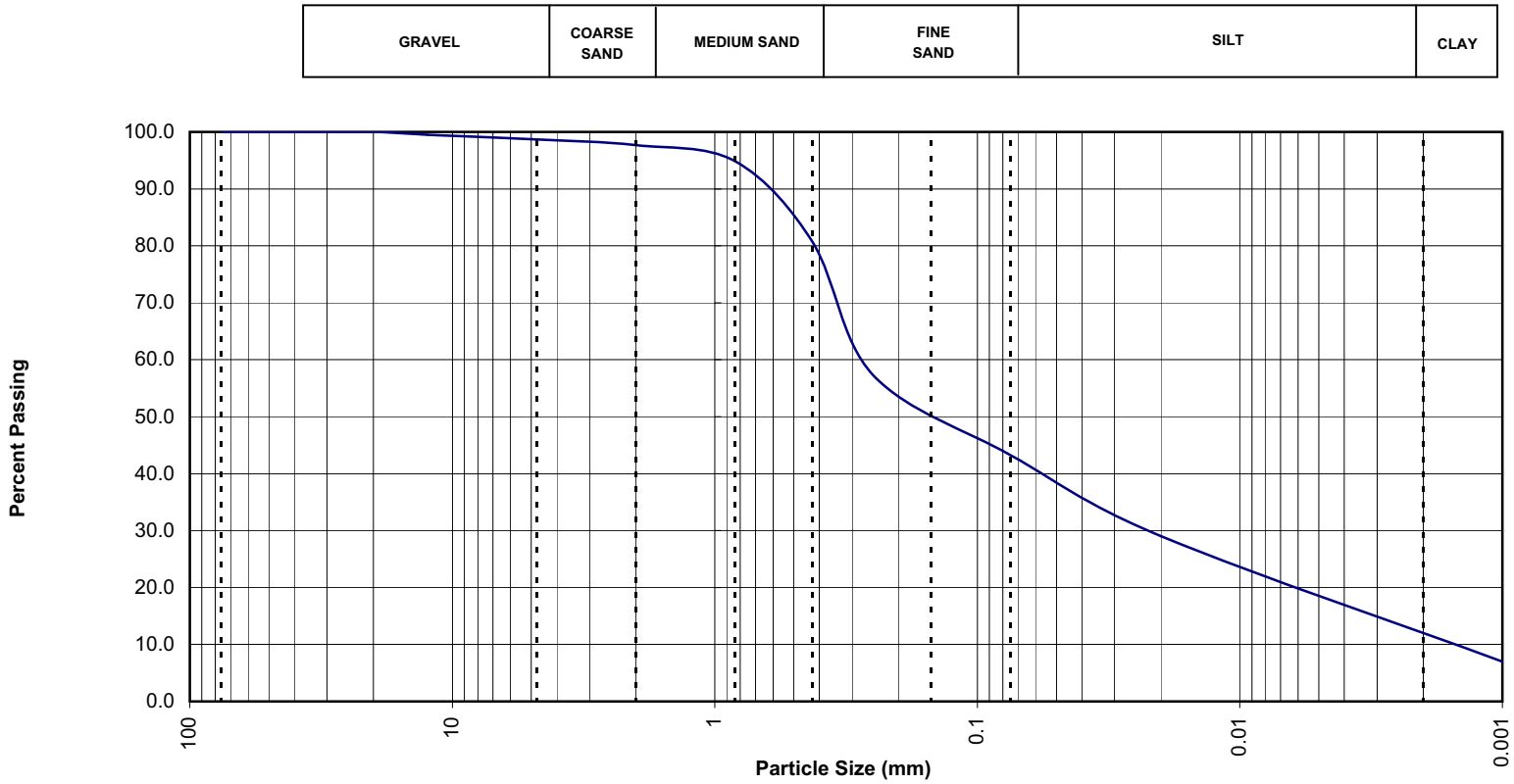

BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-24-30	15-30	0.5	Silty SAND

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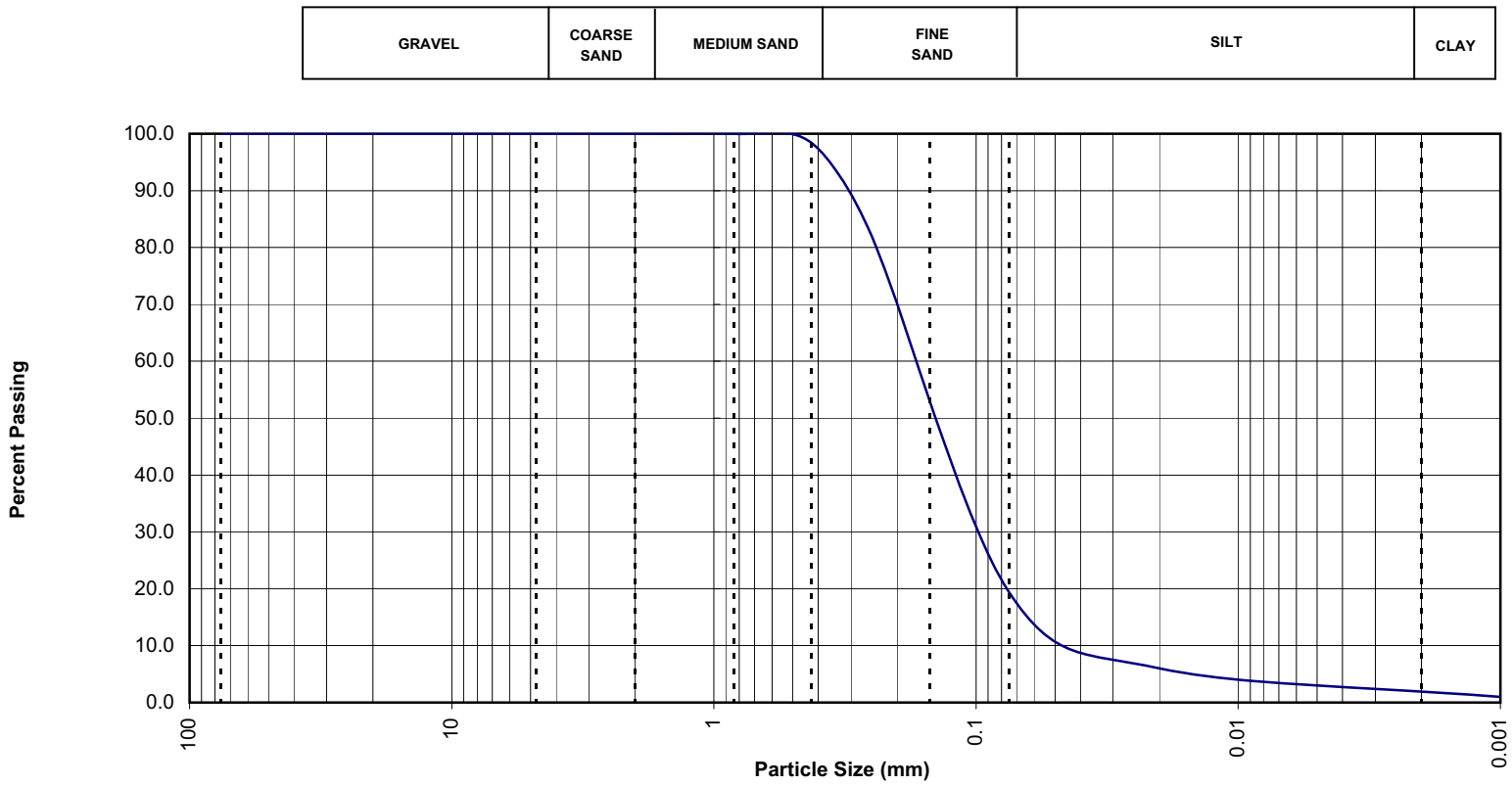
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-24-60	55-60	0.016	Silty SAND

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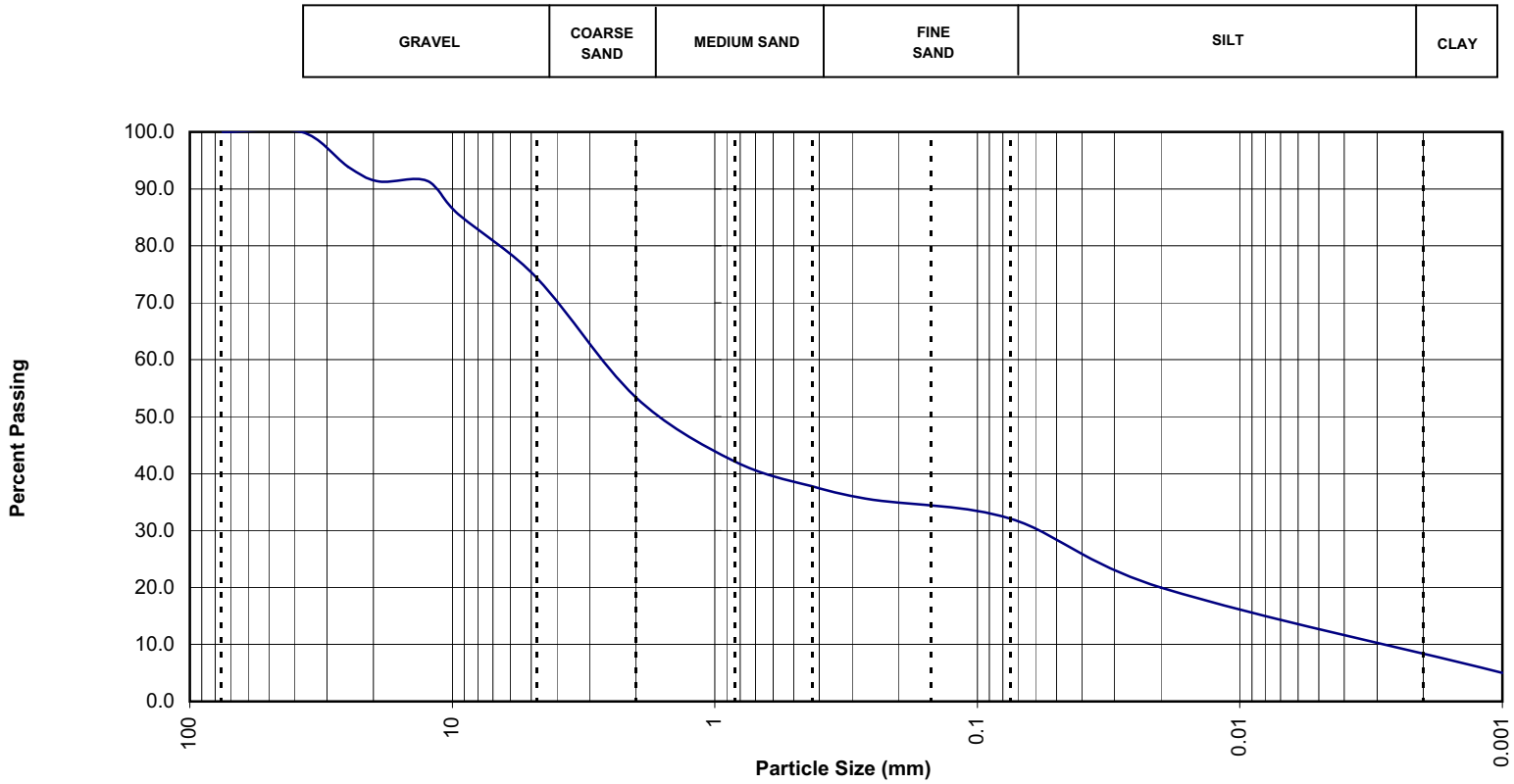
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-24-73	70-73	1	Silty SAND with gravel

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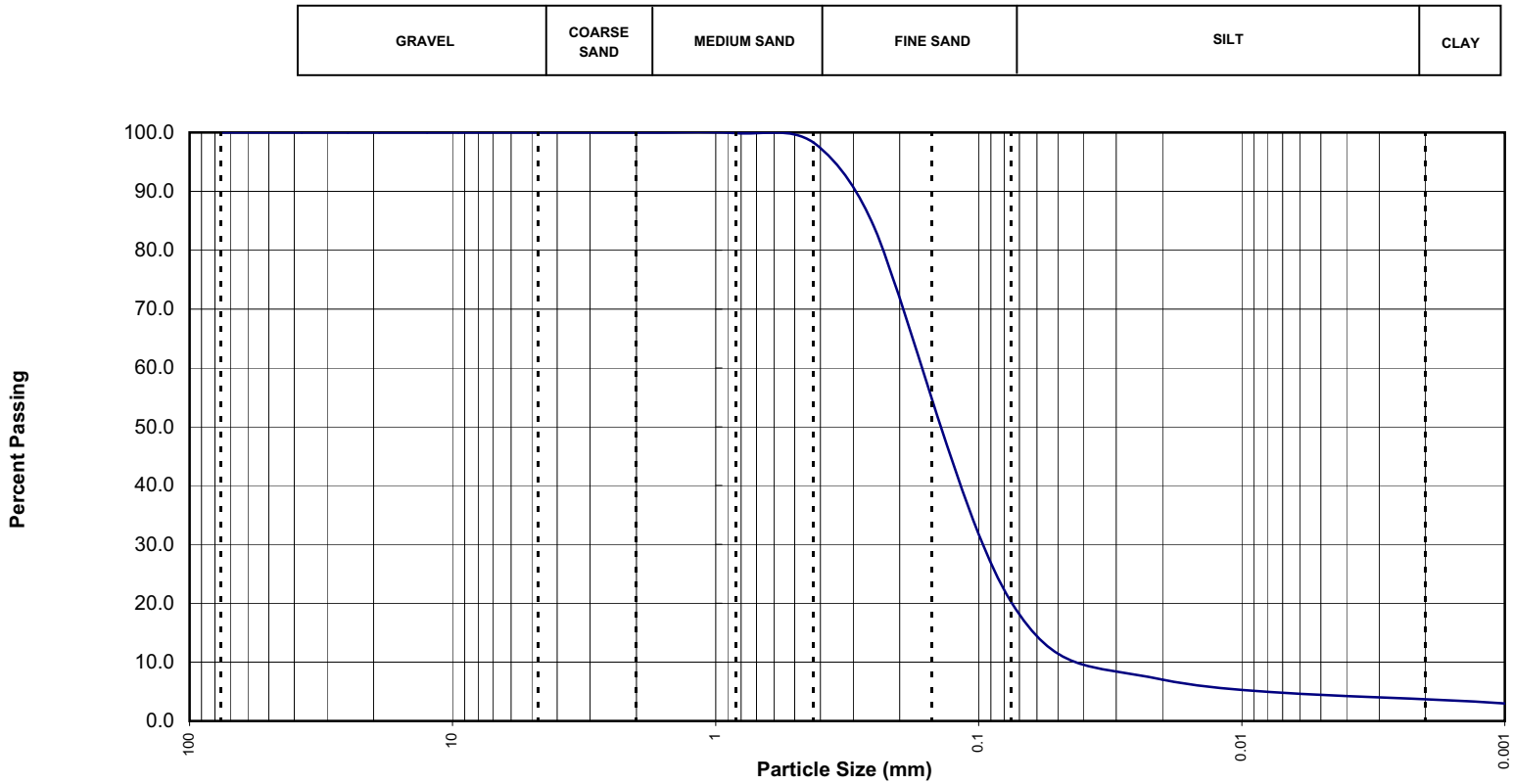
Particle Size Distribution Chart



BORING	SAMPLE DEPTH (ft)	MAXIMUM PARTICLE SIZE (in)	SOIL DESCRIPTION
RP-24-85	55-60	0.033	Silty SAND

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APPENDIX C

Data Validation Reports

C-1

Data Validation Report for the Stage 2 Source Control Evaluation, Excluding PCDD/PCDF

APPENDIX C-1

DATA VALIDATION REPORT FOR THE STAGE 2 SOURCE CONTROL EVALUATION EXCLUDING PCDD/PCDF RP - PORTLAND SITE

June 6, 2007

Submitted to:

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Northwest Region
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0-61M-107030/Phase 69/T1

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Table 9 Summary of Data Validation Findings

ACRONYMS

%D	percent deviation or percent drift in relative response
%RSD	percent relative standard deviation
°C	centigrade
≥	greater than or equal to
≤	less than or equal to
µg/L	micrograms per Liter
AMEC	AMEC Earth & Environmental, Inc.
BS	blank spike
BSD	blank spike duplicate
CAR	certified analytical report
CCAL	continuing calibration
CCV	continuing calibration verification
CLP	EPA Contract Laboratory Program
COC	chain of custody
CSM	conceptual site model
DCBP	decachlorobiphenyl
DEQ	Oregon Department of Environmental Quality
DDE	dichlorodiphenyl ethane
DDD	dichlorodiphenyl dichloroethane
DDT	dichlorodiphenyl trichloroethane
EPA	U.S. Environmental Protection Agency
GC	gas chromatography
HRMS	high resolution mass spectrometry
ICAL	initial calibration
ICS	interference check sample
ICV	initial calibration verification
ID	identification
IDL	instrument detection limit

IS	internal standard
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
MDL	method detection limit
MRL	method reporting limit
MS	matrix spike
MSD	matrix spike duplicate
PQL	practical quantitation limit
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit
RF	response factor
RP	Rhône-Poulenc
RPD	relative percent difference
RRF	relative response factor
SOP	standard operating procedure
SCE	Source Control Evaluation
SRL	sample reporting limit
STL	Severn Trent Laboratories, Inc.
SVOC	semivolatile organic compound
TCMX	tetrachloro-m-xylene
TestAmerica	TestAmerica Analytical Testing Corporation
VOC	volatile organic compound

1.0 INTRODUCTION

Seventy-four groundwater and soil samples were collected from the Rhône-Poulenc (RP) Portland Site between October 2, 2006 and November 28, 2006, for the Stage 2 Source Control Evaluation (SCE). The samples included 53 primary samples, 3 field duplicates, 2 interlaboratory split samples, 14 trip blanks, and 2 rinsate blanks, which were submitted to Severn Trent Laboratories, Inc. (STL) in Burlington, Vermont, and TestAmerica Analytical Testing Corporation (TestAmerica) in Beaverton, Oregon, for analysis. STL analyzed the samples for metals by United States Environmental Protection Agency (EPA) Methods 6010B; mercury by EPA Method 7470A; organochlorine insecticides by EPA Method 8081A; chlorinated herbicides by EPA Method 8151A; volatile organic compounds (VOCs) by EPA Method 8260B; and semivolatile organic compounds (SVOCs) by EPA Method 8270C. TestAmerica analyzed the split samples and two trip blanks. A list of the samples by sample location, field sample identification (ID), and laboratory sample ID is presented in Table 1.

2.0 DATA VALIDATION METHODOLOGY

This data validation has been performed with reference to EPA guidelines as given in the current EPA functional guidelines for organic (EPA, 2005) and inorganic (EPA, 2004a) data review, and the EPA standard operating procedures (SOPs) for inorganic and organic data review. The EPA guidelines listed above were written specifically for the Contract Laboratory Program (CLP), and have been modified for the purposes of this data validation where they differ from EPA SW-846 Methods (EPA, 2004b) quality control requirements.

AMEC Earth & Environmental, Inc.'s (AMEC's) methodology exceeded the validation procedures specified in the Department of Environmental Quality (DEQ)-approved Revised Quality Assurance Project Plan (QAPP) dated June 13, 2001 (AMEC, 2001), and the QAPP Addendum No. 1 dated August 1, 2002 (AMEC, 2002). The laboratory certified analytical reports (CARs) and supporting documentation were reviewed to assess the following: chain of custody (COC) compliance; holding time compliance; presence or absence of laboratory contamination as demonstrated by method and field blanks; accuracy and bias as demonstrated by recovery of surrogate spikes, laboratory control samples (LCSs), and matrix spikes (MSs); analytical precision as a relative percent difference (RPDs) of analyte concentration between replicate samples (i.e., laboratory duplicates) or MS and matrix spike duplicates (MSDs); sampling precision as an RPD of analyte concentration between field duplicates; calibration performance; and insofar as possible, the degree of conformance to method requirements and good laboratory practices.

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all quality control (QC) audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

3.0 EXPLANATION OF DATA QUALITY INDICATORS

LCS Recoveries

LCS and laboratory control sample duplicates (LCSDs), also known as blank spike (BS) and blank spike duplicates (BSDs), are aliquots of analyte-free water or Ottawa-sand that are spiked with the analytes of interest for an analytical method or a representative subset of those analytes. The spiked water or sand is then processed through the same extraction, concentration, cleanup, and analytical procedures as the samples they accompany. LCS recovery and precision are indications of a laboratory's ability to successfully perform an analytical method in an interference-free matrix. LCS recoveries should generally be within 70 to 130% acceptance limits for organic analytes and 80 to 120% acceptance limits for inorganic analytes.

MS Recoveries

MS and MSD are prepared by adding known amounts of the analytes of interest for an analytical method, or a representative subset of those analytes, to an aliquot of sample. The spiked sample is then processed through the same extraction, concentration, cleanup, and analytical procedures as the unspiked samples in an analytical batch.

MS recovery and precision are indications of a laboratory's ability to successfully recover an analyte in the matrix of a specific sample or closely related sample matrices. It is important not to apply MS results for any specific sample to other samples without understanding how the sample matrices are related. MS recoveries should generally be within 60 to 140% acceptance limits for organic analytes and 75 to 125% acceptance limits for inorganic analytes.

Internal Standard Recoveries

Internal standards (ISs) are compounds that are added to a sample extract after all preparatory steps are completed and before instrumental analysis. These compounds serve as standards for qualitative analyses using relative retention times and relative response factors (RRFs).

For EPA Methods 8260B and 8270C, IS response must fall between 50 and 200% of the response from the associated 12-hour calibration standard. Because the area of the IS is in the denominator of the equation used for calculating analyte

concentrations, a response below 50% may indicate a possible positive analytical bias, and a response above 200% may indicate a possible negative analytical bias.

Surrogate Spike Recoveries

Surrogate spikes are used to evaluate accuracy, method performance, and extraction efficiency in each individual sample. Surrogate compounds are compounds not normally found in environmental samples, but which are similar to target analytes in chemical composition and behavior in the analytical process. Surrogate recoveries generally should be within 70 to 130% acceptance limits in interference-free matrices (blanks, LCS/LCSD) and 60 to 140% acceptance limits in field samples.

Field Duplicate Results

Field duplicates are replicate samples collected at the same location and submitted in blind form to the laboratory. Field duplicates provide an indication of the reproducibility of the sampling and analysis procedures for a given sample matrix, including heterogeneity of the sample itself. RPDs between field duplicate results should be less than 30% for aqueous samples, and less than 50% for soil samples, with analyte concentrations greater than 5 times the method reporting limit (MRL). However, the difference between analyte concentrations less than 5 times the MRL should be less than or equal to the corresponding MRL. A summary of field duplicate detections may be found in Table 2.

Interlaboratory Split Samples

Interlaboratory split samples are replicate samples collected at the same location and submitted in blind form to two separate laboratories. Interlaboratory splits provide an indication of the reproducibility of the analysis procedures for a given sample matrix, including heterogeneity of the sample itself. AMEC does not qualify data based on interlaboratory split results and the data are provided for comparative purposes only. A summary of interlaboratory split detections may be found in Table 3.

Blank Concentrations

Blank samples are aliquots of analyte free water or Ottawa-sand that are used as negative controls to verify that the sample collection, storage, preparation, and analysis system does not produce false positive results. The three types of blanks employed for this project are:

- Laboratory blanks are aliquots of analyte free water or Ottawa-sand that are processed by the laboratory using exactly the same procedures as the field

samples. Laboratory blanks are used to monitor for contamination introduced by the laboratory during sample preparation and analysis.

- Trip blanks are aliquots of analyte free water that are placed in sample containers at the analytical laboratory and are then sent into the field with the sample containers that are used to collect field samples. Trip blanks are not opened in the field, but accompany the field samples back to the laboratory where they are analyzed as samples. Trip blanks are used to monitor for contamination that result from sample shipping and storage. For the purpose of this project, trip blanks are prepared and analyzed for VOCs only.
- Rinsate blanks are prepared by passing analyte-free water through or over sample collection equipment and collecting the water in sample containers. Rinsate blanks are analyzed for the analytical suite required for the project. Rinsate blanks are used to monitor for possible sample contamination during the sample collection process and serve as a check on the effectiveness of field decontamination procedures.

4.0 DEFINITIONS OF DATA QUALIFIERS ADDED AS A RESULT OF DATA VALIDATION FINDINGS

U The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in field, trip, or laboratory blanks.

UJ The UJ qualifier indicates the reporting limit is estimated. UJ qualifiers added during validation may indicate either a high or low bias related to a QC element that exceeds required acceptance limits.

J The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation may indicate a concentration between the method detection limit (MDL) and the MRL or sample reporting limit (SRL), or a data limitation related to a QC element that exceeds required acceptance limits.

N The N qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

R The R qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

5.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

5.1 Sample Receipt at STL

All samples were received at STL with acceptable COC documentation, intact, and within EPA-recommended 4 degrees centigrade (°C) +/- 2°C temperature range, except as described bellow:

- According to the Sample Receipt & Log in Checklists, 1 or 2 out of 3 sample vials collected for VOC analyses from RP-22-75 (1025-01), contained air bubbles. AMEC assumed the laboratory analyzed vials that did not contain air bubbles and data usability is not adversely affected.
- A single liter bottle from sample RP-22-151 (1026-01) broke in transit. The laboratory confirmed that there was sufficient sample left in intact bottles to complete the requested analyses and data usability is not adversely affected.

5.2 Sample Receipt at TestAmerica

Samples were received at TestAmerica with acceptable COC documentation, intact, and within EPA-recommended 4 degrees °C +/- 2°C temperature range.

6.0 SPECIFIC DATA VALIDATION FINDINGS FOR EACH ANALYTICAL METHOD

Sections 6.1 to 6.5 of this Data Validation Report contain narrative descriptions of data validation findings and data quality limitations. Definitions of data qualifiers added during validation may be found in Section 4 of this document. Summaries of specific qualifiers added to each affected sample as a result of the data validation findings are presented in Tables 4 through 8.

6.1 Volatile Organic Compounds by EPA Method 8260B

VOC data from the Stage 2 Source Control Evaluation may be considered usable with the limitations and exceptions described below. Summaries of qualified VOC results are presented in Table 4.

6.1.1 Holding Times

All samples from this event were analyzed for VOCs within the recommended maximum holding time of 14 days for solid samples and preserved aqueous samples.

6.1.2 Initial Calibration

Mean RRFs for volatile compounds must be greater than or equal to (≥) 0.010 and the percent relative standard deviation (%RSD) of the initial calibration RRFs must be less than or equal to (≤) 15% (for average RF calibration), for an initial calibration (ICAL) to be considered valid.

All criteria were met for the ICALs associated with VOC analysis, with the exception of those described in Table 4a. Data affected by the ICAL exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances, with the exception of the isobutyl alcohol results. Nondetected isobutyl alcohol analytes with RRF <0.01 were UJ qualified by AMEC despite very low RRFs into ICAL, because the results are being used for improvement of the Conceptual Site Model (CSM) only, and not for regulatory or risk compliance as specified in Table 4a.

6.1.3 Continuing Calibration

Continuing calibration (CCAL) performance is evaluated in terms of percent deviation (%D), which corresponds to percent deviation in average response factor (RF) models or percent drift in regression fit models from the average ICAL response. To facilitate understanding of CCAL effects on data quality at the end user, %D has been expressed as percent recovery in this narrative.

Compounds with CCAL recoveries greater than 120% and detected results were J qualified by AMEC in all associated samples to indicate a possible high bias in the analytical results. AMEC J qualified detected results and UJ qualified nondetected results associated with compounds with CCAL recoveries less than 80% to indicate possible low bias in the analytical results.

All criteria were met for the CCAL associated with VOC analysis, except as described in Table 4b. Data affected by the CCAL exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.1.4 Blanks

Target analytes should not be found in blank samples. Results greater than the MRL but less than 5 times the concentration detected in the blank, or 10 times the concentration detected in the blank for the common laboratory contaminants methylene chloride, acetone, and 2-butanone, have been U qualified. Results between the MDL and MRL, and less than 5 or 10 times the concentration detected in the blank, have been U qualified at the MRL concentration.

Laboratory Blanks

No target analytes were detected in the laboratory blanks associated with VOC analysis, except as described in Table 4c. Data affected by the analyte detections in these blanks have been qualified by AMEC and overall data usability was not adversely affected by these blank detections.

Trip Blanks

No target analytes were detected in the trip blanks associated with VOC analysis, except as described in Table 4d. Data affected by the analyte detections in these blanks have been qualified by AMEC and overall data usability was not adversely affected by these blank detections.

Rinsate Blanks

No target analytes were detected in the rinsate blanks associated with VOC analysis, except as described in Table 4e. Data affected by the analyte detections in these blanks have been qualified by AMEC and overall data usability was not adversely affected by these blank detections.

6.1.5 LCS Recovery

All LCS recoveries associated with VOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described in Table 4f. Data affected by the LCS exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.1.6 Surrogate Standard Recoveries

Recovery of all surrogates associated with VOC analysis were within QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices.

6.1.7 Internal Standard Recoveries

Recovery of all ISs associated with VOC analysis were between 50 and 200% of the response in the associated CCAL standard.

6.1.8 MS/MSD Recovery and Precision

All MS/MSD recoveries associated with VOC analysis were within the QAPP-specified 60 to 140% acceptance limits, except for sample RP-21-28 (1035-01).

Dichlorodifluoromethane recoveries were low at 53 and 52%. AMEC UJ qualified the nondetected dichlorodifluoromethane result from sample RP-21-28 (1035-01) because of possible low bias induced by matrix interference. (**UJ-LM**)

6.1.9 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the MRL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables.

6.2 Chlorophenoxy Acid Herbicides by EPA Method 8151A

Chlorophenoxy Acid Herbicide (herbicide) data from the Stage 2 Source Control Evaluation may be considered usable with the limitations and exceptions described below. Summaries of qualified herbicide results are presented in Table 5.

6.2.1 Holding Times

All samples were extracted within the EPA recommended maximum holding times of 7 days for water and 14 days for soil, and analyzed within 40 days of extraction.

6.2.2 Initial Calibration

All ICALs associated with herbicide analysis were acceptable and met all method specific criteria.

6.2.3 Continuing Calibration

CCAL performance is evaluated in terms of %D from the average ICAL response. To facilitate understanding of CCAL effects on data quality at the end user, %D has been expressed as percent recovery in this narrative.

CCAL recoveries should fall within 85 to 115% acceptance limits. AMEC J qualified all detected results associated with CCAL recoveries greater than 115% due to a possible high bias in the analytical results. AMEC J qualified all detected results and UJ qualified all nondetected results associated with CCAL recoveries less than 85% due to a possible low bias in the analytical results.

All CCALs associated with herbicide analysis were within acceptance limits, except for those described in Table 5a. Data affected by the CCAL exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.2.4 Laboratory and Rinsate Blanks

No target analytes were detected in the laboratory and rinsate blanks associated with herbicide analysis.

6.2.5 LCS Recovery

LCS recoveries were within the QAPP-specified 70 to 130% acceptance limits, except as described in Table 5b. Data affected by the LCS exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.2.6 Surrogate Recoveries

All surrogate recoveries associated with herbicide analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described in Table 5c. All surrogate recovery exceedances were due to the samples being analyzed at dilutions, which reduced surrogate concentrations below analytical detection limits, AMEC did not qualify any data based on surrogate recoveries.

6.2.7 MS/MSD Accuracy and Precision

Accuracy and precision were within the QAPP-specified 60 to 140% acceptance limits and ≤ 30% RPD in all MS associated with herbicide analysis, except as described in Table 5d. Data affected by the MS/MSD exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.2.8 Data Reporting and Analytical Procedures

AMEC R qualified and rejected the herbicide results from samples 1003-01, 1012-01, and 1018-01 because the presence or absence of herbicides could not be determined. Hydrocarbon matrix interferences related to probable presence of manufactured gas plant wastes were apparent in the sample chromatograms making target analyte peak resolution difficult. In AMEC's professional opinion, these interferences were too severe for proper peak identification. The associated SVOC analyses by EPA Method 8270C were performed at 20-fold, 100-fold, and 40-fold dilutions, respectively, corroborating the matrix interferences evident in the herbicide analyses. If any future soil samples are collected from MGP-effected areas of the Siltronic property, SLLI will research alternate methods of analysis for herbicides to help minimize interferences.

6.3 Semivolatile Organic Compounds by EPA Method 8270C

SVOC results from the Stage 2 Source Control Evaluation may be considered usable with the limitations described below. Summaries of qualified SVOC results are presented in Table 6.

6.3.1 Holding Times

All samples were extracted within the EPA recommended maximum holding time of 7 days for water and 14 days for soil, and analyzed within 40 days of extraction.

6.3.2 Initial Calibration

Mean RRFs for semivolatile compounds must be ≥ 0.050, and the %RSD of the initial calibration RRFs must be ≤ 15% for average RF calibration, for an ICAL to be considered valid.

All criteria were met for the ICALs associated with SVOC analysis, with the exception of those described in Table 6a. Data affected by the ICAL exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

Initial calibration verification (ICV) recoveries should fall within 80 to 120% acceptance limits. AMEC J qualified all detected results associated with ICV recoveries greater than 120% due to a possible high bias in the analytical results. AMEC J qualified all detected results and UJ qualified all nondetected results associated with ICV recoveries less than 80% due to a possible low bias in the analytical results.

All criteria were met for the ICVs associated with SVOC analysis, except as described in Table 6a. Data affected by the ICV exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.3.3 Continuing Calibration

CCAL performance is evaluated in terms of %D, which corresponds to %D (average RF models) or percent drift (regression fit models) from the average ICAL response. To facilitate understanding of CCAL effects on data quality at the end user, %D has been expressed as percent recovery in this narrative. CCAL performance is evaluated in terms of percent recovery for linear and quadratic calibration models.

CCAL recoveries should fall within 80 to 120% acceptance limits. AMEC J qualified all detected results associated with CCAL recoveries greater than 120% due to a possible high bias in the analytical results. AMEC J qualified all detected results and

UJ qualified all nondetected results associated with CCAL recoveries less than 80% due to a possible low bias in the analytical results.

All criteria were met for the CCALs associated with SVOC analysis, except as described in Table 6b. Data affected by the CCAL exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.3.4 Blanks

Target analytes should not be found in blank samples. Results greater than the MRL but less than 5 times the concentration found in the blank have been U qualified. Results between the MDL and MRL, and less than 5 times the amount found in the blank, have been U qualified at the MRL concentration.

Laboratory Blanks

No SVOCs were detected in the laboratory blanks associated with these samples, except for bis(2-Ethylhexyl)phthalate from MBLK1013106E. This analyte was not detected in the associated samples and data usability is not adversely affected.

Rinsate Blank

No SVOCs were detected in the rinsate blanks associated with these samples, except for diethylphthalate from Rinsate Blank (1037-04). This analyte was not detected in the associated samples and data usability is not adversely affected.

6.3.5 LCS Recovery

All LCS recoveries associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits, except as described in Table 6c. Data affected by the LCS exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances, with the exception of the benzoic acid results, which were either not recovered or exhibited very low recovery in the associated LCS. Nondetected analytes with LCS recoveries less than 10% were R qualified and rejected by AMEC as specified in Table 6c.

6.3.6 MS/MSD Recovery and Precision

All MS/MSD recoveries associated with SVOC analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described in Table 6d. Data affected by the MS/MSD exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.3.7 Internal Standard Recoveries

IS recoveries were within the method-specified 50 to 200% acceptance limits.

6.3.8 Surrogate Recoveries

Recovery of all surrogates associated with SVOC analysis were within the QAPP-specified 70 to 130% acceptance limits for analyte-free matrices and 60 to 140% acceptance limits for field sample matrices, except as described in Table 6e. As specified in EPA Method 8270C, up to one surrogate from each extraction fraction may be outside of acceptance limits without affecting data usability. Data affected by the surrogate recovery exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.3.9 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the reporting limit (RL) and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables.

According to the case narrative, the quantitation of benzo(b)fluoranthene in sample RP-24-85 (1018-01) was based on the combined instrument response for benzo(b)fluoranthene and benzo(k)fluoranthene because of impossibility to separate these two peaks. AMEC J qualified the benzo(b)fluoranthene and UJ qualified the benzo(k)fluoranthene to denote the estimation of these concentrations. (**J/UJ-MI**)

6.4 Organochlorine Insecticides by EPA Method 8081A

Organochlorine insecticides (insecticides) data from the Stage 2 Source Control Evaluation may be considered usable with the limitations and exceptions described below. Summaries of qualified insecticides results are presented in Table 7.

6.4.1 Holding Times

All samples were extracted within the EPA recommended maximum holding times of 7 days for water and 14 days for soil, and analyzed within 40 days of extraction, except as described below.

Sample RP-24-85 (1018-01) was reported from a re-extraction outside the prescribed holding time. Effects on data usability are addressed in Section 6.4.9

6.4.2 4,4'-DDT/Endrin Breakdown

Breakdown is a measure of the amount of decomposition that 4,4'-dichlorodiphenyl trichloroethane (4,4′-DDT) and endrin undergo when analyzed on the gas chromatography (GC) column. Excessive breakdown is an indication that the chromatographic system is contaminated, chemically active, or too hot. Breakdown is measured by injecting a mixture of 4,4'-DDT and endrin into the GC and dividing the sum of the areas of the breakdown products (4,4'-dichlorodiphenylethane [4,4'-DDE] and 4,4'-Dichlorodiphenyl-dichloroethane [4,4'-DDD] for 4,4'-DDT, and endrin aldehyde and endrin ketone for endrin) by the sums of the areas of the breakdown products and the parent compounds. Breakdown must be less than 15% for analysis to proceed and data to be fully usable. 4,4′-DDT and endrin breakdown was less than 15% each day that samples from this project were analyzed for insecticides.

6.4.3 Initial Calibration

All ICALs associated with the analysis of these samples for insecticides were acceptable.

6.4.4 Continuing Calibration

CCAL performance is evaluated in terms of %D from the average ICAL response. To facilitate understanding of CCAL effects on data quality at the end user, %D has been expressed as percent recovery in this narrative.

CCAL recoveries should fall within 85 to 115% acceptance limits. AMEC J qualified all detected results associated with CCAL recoveries greater than 115% due to a possible high bias in the analytical results. AMEC J qualified all positive results and UJ qualified all nondetected results associated with CCAL recoveries less than 85% due to a possible low bias in the analytical results.

All CCALs associated with insecticide analysis were acceptable, except as described below:

Alpha-BHC recovery was high at 116% in the CCAL analyzed on December 8, 2006 at 16:49 on instrument 0911_1. Recovery was high and alpha-BHC was not detected in the associated samples (RP-06-30 [1050-01], RP-06-87 [1051-01], RP-06-95 [1052-01], and RP-06-105 [1053-01]), data usability is not adversely affected.

6.4.5 Laboratory and Rinsate Blanks

No target analytes were detected in the laboratory and rinsate blanks associated with the insecticide analysis.

6.4.6 LCS Recovery

Target analyte recoveries were within the QAPP-specified 70 to 130% acceptance limits in the LCSs associated with insecticide analysis, except as described below:

Endrin aldehyde recovery was low at 68% in LCS G101906LCS, associated with the analysis of sample RP-20-97 (1003-01). AMEC UJ qualified the nondetected endrin aldehyde result from this sample because of possible low bias in the analytical result.

6.4.7 Surrogate Recoveries

Surrogate recoveries associated with insecticide analysis were within the QAPP-specified 60 to 140% acceptance limits, except as described below:

- The surrogate compounds decachlorobiphenyl (DCBP) and tetrachloro-m-xylene (TCMX) could not be recovered from sample RP-21-150 (1012-01). This sample was analyzed at a 50-fold dilution because of high analyte concentrations. Surrogate recoveries cannot be fully evaluated and AMEC did not qualify the associated data.
- Recoveries of the surrogate compound DCBP were low on both analytical columns in samples: RP-20-30 (1027-01) at 49% on each column, RP-23-85 (1028-01) at 46% and 47%, RP-23-100 (1029-01) at 54% and 56%, RP-20-25 (1032-01) at 41% and 43%, RP-21-125 (1034-01) at 43% and 42%, MW-03-S(27) (1037-01) at 50% on each column, RP-24-30 (1046-01) at 46% on each column, RP-24-60 (1047-01) at 57% on each column, and RP-06-95 (1052-01) at 56% and 56%. Insecticides were not detected in these samples and AMEC UJ qualified the nondetected insecticide results because of possible low bias in the analytical results.

6.4.8 MS/MSD Recovery and Precision

Precision and recovery were within the QAPP-specified 60 to 140% acceptance limits in all MS associated with insecticide analyses, except as described below:

4,4'-DDT (-1400%/-1400%), beta-BHC (-20%/-11%), gamma-BHC (lindane) (28%/29%), and endrin ketone (55%/50%) recoveries were low in the MS/MSD performed on sample RP-24-85 (1018-01). The data from this sample was rejected because of matrix interference, as described in Section 6.4.9. AMEC did not further evaluate the MS/MSD data from this sample and no data were qualified based on the MS/MSD results.

6.4.9 Data Reporting and Analytical Procedures

The laboratory J qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results on the data tables.

AMEC R qualified and rejected the insecticide results from sample RP-24-85 (1018-01) because the presence or absence of insecticides in this sample could not be determined. The laboratory reextracted and reanalyzed this sample and associated matrix spike because 4,4'-DDT was not recovered in the original matrix spike analysis. In AMEC's professional opinion verification insecticide results could not be verified due to discrepancies between the original and reextract concentrations, matrix spike recoveries, and dual-column concentrations. In addition, hydrocarbon matrix interferences were apparent in the sample chromatograms making target analyte peak resolution difficult. The associated semivolatile analysis was analyzed at a 40-fold dilution corroborating the matrix interferences evident in the insecticide analyses.

Discrepancies were observed between the heptachlor epoxide results from sample RP-21-150 (1012-01) reported from the primary and secondary analytical columns. The discrepancies appear to be related to the complex and difficult sample matrix, which was affected by the presence of MGP waste in the sample. AMEC N qualified the heptachlor epoxide result from sample RP-21-150 (1012-01) as a result of these anomalies. If any future soils samples are collected from MGP-effected areas of the Siltronic property, analysis for insecticides, if required, will be performed using either high resolution mass spectrometry (HRMS) or tandem mass spectrometry (MS/MS) techniques to help minimize interferences.

AMEC N qualified the gamma-chlordane result from sample RP-22-29 (1024-01) because there was greater than 40% RPD between the analyte concentrations reported from the primary and secondary analytical columns.

6.5 Metals by EPA 6010B and EPA 7470A

Metals data from the Stage 2 Source Control Evaluation may be considered usable with the limitations and exceptions described below. Summaries of qualified metals results may be found in Table 8.

6.5.1 Holding Times

All samples were analyzed for mercury within the recommended 28-day holding time and for all other metals within the recommended 180-day holding time.

6.5.2 Initial Calibration

All ICALs associated with the metals analysis were acceptable.

6.5.3 Initial Calibration Verification

EPA acceptance limits for metals ICVs are 90 to 110%. ICVs associated with the metals analysis were acceptable.

6.5.4 Continuing Calibration Verification

EPA acceptance limits for metals continuing calibration verifications (CCVs) are 90 to 110%. CCVs associated with reported data from the metals analysis were acceptable.

6.5.5 Inductively Coupled Plasma Interference Check Sample

All interference check samples (ICS) exhibited recoveries within the method-specified 80 to 120% acceptance limits.

6.5.6 Blanks

Target analytes should not be found in blank samples. When the concentration detected in the blank is less than the MRL, concentrations in associated samples greater than the MRL but less than 5 times the concentration detected in the blank have been U qualified by AMEC. When the absolute concentration detected in the blank is greater than the MRL, concentrations in the associated samples greater than the MRL but less than 5 times the concentration detected in the blank have been U qualified by AMEC. In both cases, sample concentrations between the MDL and MRL, and less than 5 times the concentration detected in the blank, have been U qualified at the MRL concentration.

Laboratory Blanks

Target analyte concentrations in laboratory blanks associated with metals analysis are described in Table 8a. Data affected by the analyte detections in these blanks have been qualified by AMEC and overall data usability was not adversely affected by these blank detections.

Rinsate Blanks

Target analyte concentrations in the rinsate blanks associated with metals analysis are described in Table 8b. Data affected by the analyte detections in these blanks have

been qualified by AMEC and overall data usability was not adversely affected by these blank detections.

6.5.7 LCS Recovery

All LCS recoveries were within the method-specified 80 to 120% acceptance limits.

6.5.8 MS Recovery and Precision

The method-specified acceptance limits for metals MS recoveries are 75 to 125%. However, spike recovery limits are not applicable when the sample concentration exceeds the spike concentration by a factor of four or more.

Precision and recovery were acceptable in all MS associated with metals analysis, except as described in Table 8c. Data affected by the MS exceedances have been qualified by AMEC and overall data usability was not adversely affected by these exceedances.

6.5.9 Serial Dilution

Percent difference for serial dilution analysis performed on the samples met QAPP-specified criteria, with less than 10% difference for analytes with concentrations greater than 50 times the MDL, except as described in Table 8d

6.5.10 Laboratory Duplicates

EPA CLP acceptance limits for duplicate sample analyses are ± 20% RPD for sample concentrations ≥ 5 times the MRL. A control limit of ± MRL is used if either the sample or duplicate result is less than 5 times the MRL.

The laboratory duplicates exhibited acceptable precision, except for manganese in sample RP-21-28 (1015-01). AMEC J qualified this analyte in the associated sample because of possible bias induced by matrix interference. (**J-HD**)

6.5.11 Data Reporting and Analytical Procedures

The laboratory B qualified detected results with concentrations between the RL and MDL. AMEC concurs that these results are quantitative estimates and J qualified these results in the data tables.

7.0 FIELD DUPLICATE RESULTS

Three field duplicate pairs were collected with the 53 primary samples. The samples were given blind IDs, so that the laboratory was not aware which samples were submitted in duplicate. Primary samples were coded with -01 appended to the blind sample ID, and duplicate samples were coded with -02 appended to the blind sample ID. Detected results for each set of field duplicates are summarized in Table 2.

Precision values met the QAPP-specified acceptance limits, with RPDs less than 30% for aqueous samples and less than 50% for soil samples for analytes with concentrations more than 5 times their practical quantitation limit (PQLs), and concentrations within one MRL for analytes with concentrations less than 5 times their MRLs, except as described below:

- A field duplicate for metals analysis was collected at **RP-22-29**. The RPDs between the total metals were less than 50%.
- A field duplicate was collected at **RP-21-150**. The detected VOC analytes 1,2,4-trichlorobenzene, hexachlorobutadiene, and 1,2,3-trichlorobenzene concentrations in these samples were less than 5 times their associated MRLs and the differences between the concentrations were less than the MRL; data usability is not adversely affected. In addition, the RPD between the naphthalene results was high at 98% and the RPD between the dissolved zinc results was high at 51%. The differences between the concentrations were less than the MRL and data usability is not adversely affected.
- A field duplicate was collected at **RP-24-85**. The detected vinyl chloride, acetone, ethylbenzene, and m,p-xylene concentrations in these samples were less than 5 times their associated MRLs and the differences between the concentrations were less than the MRLs; data usability is not adversely affected.

8.0 INTERLABORATORY SPLIT SAMPLE RESULTS

Field samples MW-03-137 and RP-06-95 were submitted to both STL and TestAmerica. The samples were given blind IDs, so that the primary laboratory (STL) was not aware which samples were also submitted to the QC laboratory (TestAmerica). Primary samples were coded with -01 appended to the blind sample ID, and split samples were coded with -05 appended to the blind sample ID. A summary of detected split sample results may be found in Table 3.

TestAmerica's MDLs and MRLs are generally higher than STL's. STL and TestAmerica report analyte concentrations down to the MDL or instrument detection limit (IDL); therefore, low-level concentration comparisons could be made between

reported laboratory results. However, AMEC does not qualify data based on interlaboratory split results and the data are provided for comparative purposes only.

TestAmerica detected total and dissolved arsenic in sample **MW-03-137** at concentrations of 1.47 and 1.67 micrograms per Liter (µg/L) respectively, and total and dissolved nickel at concentrations of 2.78 and 2.58 µg/L respectively, but STL did not detect these analytes above the MDL. STL detected 2,4,5-TP (Silvex), and total and dissolved zinc concentrations above the MDL. TestAmerica reported these analytes as not detected above the MDLs. The differences between the concentrations were less than the MRL and data usability is not adversely affected.

STL detected 1,1-dichloroethene, total and dissolved arsenic, total and dissolved zinc, and total vanadium in sample **RP-06-95** above the MDL and TestAmerica reported these analytes as not detected above the MDL. Also, TestAmerica detected dichlorprop above the MDL and STL reported this analyte as not detected above the MDL. The differences between the concentrations were less than the MRL and data usability is not adversely affected.

9.0 SUMMARY AND CONCLUSIONS

The data are generally usable and of good quality, with the exceptions listed below.

- AMEC R qualified and rejected the benzoic acid results from sample RP-22-29 (1024-01), RP-22-75 (1025-01), RP-22-151 (1026-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-23-100 (1029-01), RP-23-125 (1030-01), RP-20-97 (1031-01), RP-21-150 (1036-01), RP-21-150 (1036-02), MW-03-S (1037-01), MW-03-81 (1041-01), MW-03-137 (1043-01), MW-03-141 (1044-01), RP-06-30 (1050-01), RP-06-87 (1051-01), RP-06-95 (1052-01), and RP-06-105 (1053-01) due to very low or no recoveries in the associated LCSs. This analyte is not a primary constituent of concern and the rejected results do not impact overall data usability.

- AMEC R qualified and rejected the herbicide results from samples 1003-01, 1012-01, and 1018-01 due to severe hydrocarbon matrix interferences related to probable presence of manufactured gas plant wastes.

- AMEC R qualified and rejected the insecticide results from sample 1018-01 because insecticide results could not be verified due to discrepancies between the original and reextract concentrations, matrix spike recoveries, and dual-column concentrations and apparent hydrocarbon matrix interferences related to probable presence of manufactured gas plant wastes.

The remainder of the data is generally usable and of good quality, with the qualifications listed below. No VOCs and metals results were rejected by AMEC due to data quality issues.

- A portion of the VOC data was qualified due to laboratory (Table 4c), rinsate (Table 4e), and/or trip blank (Table 4d) contamination, ICAL instability (Table 4a), low or high CCAL recoveries (Table 4b), low LCS recoveries (Table 4f), and a low MS/MSD recovery (Section 6.1.8).
- A portion of the herbicide data was qualified due to high or low CCAL recoveries (Table 5a), low or high LCS recoveries (Table 5b), low MS/MSD recoveries (Table 5d), and high percent differences between the dual-column results (Section 6.2.8).
- A portion of the SVOC data was qualified due to ICAL instability (Table 6a), low or high CCAL recoveries (Table 6b), low or high LCS recoveries (Table 6c), low MS/MSD recoveries (Table 6d), and low acid extractable surrogate compound recoveries (Table 6e).
- A portion of the insecticide data was qualified due to low LCS recoveries (Section 6.4.6), low surrogate recoveries (Section 6.4.7), and high percent differences between the dual-column results (Section 6.4.9).
- A portion of the metals data was qualified due to low-level laboratory (Table 8a) or rinsate blank contamination (Table 8b), low MS recoveries (Table 8c), and high percent difference between serial dilutions (Table 8d).

A summary of data validation findings that reference the method, the qualified analyte, the affected sample, the qualifier added, the reason for the qualifier, the section, and table number is presented in Table 9.

A total of 73 results out of 8,376 total results or 0.9% were rejected during data validation. Overall completeness of the data set exceeded 95%. In addition, 513 results (6%) were J qualified, 1,070 (12.8%) results were UJ qualified, 144 results (1.7%) were U qualified, 5 results (0.06%) were N qualified and 9 results were NJ qualified (0.1%).

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LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on: i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Stage 2 Source Control Evaluation report is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Field Samples Submitted to STL and TestAmerica with Corresponding Laboratory IDs
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Field Sample ID	Sample Date	Matrix	TestAmerica Sample ID	STL SDG and Sample ID	Notes
MW-03-141	1000-01	10/2/2006	Soil		RP21-685955	Metals
MW-03-137	1001-01	10/4/2006	Soil		RP21-685956	Metals
RP-20-110	1002-01	10/6/2006	Soil		RP21-686689	Metals
RP-20-97	1003-01	10/6/2006	Soil		RP21-686690	All methods
RP-20-25	1004-01	10/10/2006	Soil		RP21-687220	Metals
RP-22-151	1005-01	10/11/2006	Soil		RP21-687221	Metals
RP-22-75	1006-01	10/12/2006	Soil		RP21-687281	Metals
RP-22-29	1007-01	10/12/2006	Soil		RP21-687282	Metals
RP-22-29	1007-02	10/12/2006	Soil		RP21-687283	Field Duplicate
RP-23-125	1008-01	10/16/2006	Soil		RP24-687647	Metals
RP-23-100	1009-01	10/17/2006	Soil		RP24-687926	Metals
RP-23-85	1010-01	10/18/2006	Soil		RP24-688308	Metals
RP-23-30	1011-01	10/18/2006	Soil		RP24-688309	Metals
RP-21-150	1012-01	10/20/2006	Soil		RP25-689234	All methods
RP-21-150	1013-01	10/23/2006	Soil		RP25-688837	Metals
RP-21-125	1014-01	10/24/2006	Soil		RP25-689235	Metals
RP-21-28	1015-01	10/25/2006	Soil		RP25-689236	Metals
RP-06-105	1016-01	10/27/2006	Soil		RP27-689537	Metals
RP-06-95	1017-01	10/30/2006	Soil		RP27-689719	Metals
RP-24-85	1018-01	10/27/2006	Soil		RP27-689538	All methods
RP-24-85	1019-01	10/30/2006	Soil		RP27-689720	Metals
RP-24-85	1020-01	10/30/2006	Soil		RP27-689721	Metals
RP-24-73	1021-01	11/8/2006	Soil		RP29-690659	Metals
RP-24-60	1022-01	11/10/2006	Soil		RP29-691126	Metals
RP-24-30	1023-01	11/13/2006	Soil		RP29-691191	Metals
RP-22-29	1024-01	11/7/2006	Water		RP28-690558	
TRIP BLANK	1024-03	11/7/2006	Water		RP28-690560	Trip blank
RP-22-75	1025-01	11/7/2006	Water		RP28-690561	
RP-22-151	1026-01	11/8/2006	Water		RP28-690651	
TRIP BLANK	1026-03	11/8/2006	Water		RP28-690653	Trip blank
RP-23-30	1027-01	11/8/2006	Water		RP28-690654	
RP-23-85	1028-01	11/9/2006	Water		RP28-690936	
TRIP BLANK	1028-03	11/9/2006	Water		RP28-690938	Trip blank
RP-23-100	1029-01	11/9/2006	Water		RP29-690939	
TRIP BLANK	1030-03	11/10/2006	Water		RP30-691099	Trip blank
RP-23-125	1030-01	11/10/2006	Water		RP30-691097	
RP-20-97	1031-01	11/10/2006	Water		RP30-691100	
RP-20-25	1032-01	11/10/2006	Water		RP30-691102	
RP-20-110	1033-01	11/13/2006	Water		RP30-691188	
TRIP BLANK	1033-03	11/13/2006	Water		RP30-691190	Trip blank
RP-21-125	1034-01	11/14/2006	Water		RP30-691526	
TRIP BLANK	1034-03	11/14/2006	Water		RP30-691528	Trip blank
RP-21-28	1035-01	11/14/2006	Water		RP30-691529	
RP-21-150	1036-01	11/15/2006	Water		RP30-691531	
RP-21-150	1036-02	11/15/2006	Water		RP30-691533	Field Duplicate
TRIP BLANK	1036-03	11/15/2006	Water		RP30-691535	Trip blank
MW-03-S	1037-01	11/15/2006	Water		RP30-691536	
RINSE BLANK	1037-04	11/16/2006	Water		RP30-691538	Rinsate Blank
MW-03-81	1041-01	11/16/2006	Water		RP30-691751	
TRIP BLANK	1041-03	11/16/2006	Water		RP30-691753	Trip blank
MW-03-I	1042-01	11/16/2006	Water		RP30-691754	
MW-03-136	1043-01	11/17/2006	Water		RP31-691941	

TABLE 1
Field Samples Submitted to STL and TestAmerica with Corresponding Laboratory IDs
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Field Sample ID	Sample Date	Matrix	TestAmerica Sample ID	STL SDG and Sample ID	Notes
TRIP BLANK	1043-03	11/17/2006	Water		RP31-691943	Trip blank
TRIP BLANK	1043-03	11/17/2006	Water	PPK0809-02		Trip blank
MW-03-136	1043-05	11/17/2006	Water	PPK0809-03		Interlaboratory Split
MW-03-141	1044-01	11/17/2006	Water		RP31-691944	
RP-24-30	1046-01A	11/20/2006	Water		RP31-692094	All other methods
RP-24-30	1046-01B	11/21/2006	Water		RP31-692094	Metals
TRIP BLANK	1046-03	11/20/2006	Water		RP31-692096	Trip blank
RP-24-60	1047-01	11/20/2006	Water		RP31-692097	
RP-24-85	1048-01	11/21/2006	Water		RP31-692086	
RP-24-85	1048-02	11/21/2006	Water		RP31-692088	Field Duplicate
RP-24-73	1049-01	11/21/2006	Water		RP31-692090	
RP-06-30	1050-01	11/27/2006	Water		RP32-692620	
TRIP BLANK	1050-03	11/27/2006	Water		RP32-692622	Trip blank
RP-06-87	1051-01	11/27/2006	Water		RP32-692623	
RP-06-95	1052-01	11/27/2006	Water		RP32-692625	
TRIP BLANK	1052-03	11/27/2006	Water	PPK1074-04		Trip blank
RP-06-95	1052-05	11/27/2006	Water	PPK1074-05		Interlaboratory Split
RP-06-105	1053-01	11/28/2006	Water		RP32-692772	
TRIP BLANK	1053-03	11/28/2006	Water		RP32-692774	Trip blank
RINSE BLANK	1053-04	11/28/2006	Water		RP32-692775	Rinsate Blank

Notes:

ID = identification

STL = Severn Trent Laboratories, Inc.

TestAmerica = TestAmerica Analytical Testing Corporation

TABLE 2
Summary of Field Duplicate Detections
Stage 2 Source Control Evaluation
RP - Portland Site

Analytical Method	Analyte	Unit	MRL	Primary Result	Duplicate Result	RPD
Sample RP-22-29 (1007-01 and 1007-02)						
Total Metals	Aluminum	µg/Kg	200	15,000	12,900	15%
	Arsenic	µg/Kg	10	3.1	2.7	14%
	Calcium	µg/Kg	5,000	4,580	4,090	11%
	Chromium	µg/Kg	10	18.2	15	19%
	Copper	µg/Kg	25	20.8	16.5	23%
	Iron	µg/Kg	200	28,700	27,400	5%
	Lead	µg/Kg	10	13.8	10.1	31%
	Magnesium	µg/Kg	5,000	3,900	3,580	9%
	Manganese	µg/Kg	15	290	263	10%
	Mercury	µg/Kg	0.2	0.042	0.027	43%
	Nickel	µg/Kg	40	18.0	16.6	8%
	Potassium	µg/Kg	5,000	604	570	6%
	Sodium	µg/Kg	5,000	633	564	12%
	Vanadium	µg/Kg	50	75.4	68.8	9%
	Zinc	µg/Kg	20	64.7	49.2	27%
Sample RP-21-150 (1036-01 and 1036-02)						
VOCs	Methyl-t-Butyl Ether	µg/L	5.4	11	11	0%
	Chlorobenzene	µg/L	5.4	30	29	3%
	1,4-Dichlorobenzene	µg/L	5.4	67	65	3%
	1,2-Dichlorobenzene	µg/L	5.4	210	210	0%
	1,2,4-Trichlorobenzene	µg/L	5.4	1.2	ND	NC
	Hexachlorobutadiene	µg/L	5.4	1.1	ND	NC
	Naphthalene	µg/L	5.4	4.1	1.4	**98%**
	1,2,3-Trichlorobenzene	µg/L	5.4	1.6	ND	NC
SVOCs	1,3-Dichlorobenzene	µg/L	19	5.7	5.6	2%
	1,4-Dichlorobenzene	µg/L	19	56	55	2%
	1,2-Dichlorobenzene	µg/L	19	130	120	8%
	Dimethylphthalate	µg/L	19	1.1	0.99	11%
Herbicides	Silvex (2,4,5-TP)	µg/L	0.14	0.83	1	19%
Total Metals	Aluminum	µg/L	200	558	553	1%
	Calcium	µg/L	5,000	55,000	55,600	1%
	Iron	µg/L	200	2,160	2,050	5%
	Magnesium	µg/L	5,000	22,500	22,800	1%
	Manganese	µg/L	15	3,210	3,240	1%
	Potassium	µg/L	5,000	3,940	4,020	2%
	Sodium	µg/L	5,000	36,000	36,500	1%
	Vanadium	µg/L	50	4.8	4.3	11%
	Zinc	µg/L	20	6.3	7.8	21%
Dissolved Metals	Calcium	µg/L	5,000	53,700	53,700	0%
	Iron	µg/L	200	270	284	5%
	Magnesium	µg/L	5,000	22,000	22,000	0%
	Manganese	µg/L	15	3,130	3,130	0%
	Potassium	µg/L	5,000	3,800	3,840	1%
	Sodium	µg/L	5,000	35,000	35,300	1%
	Zinc	µg/L	20	4.4	7.4	**51%**

TABLE 2
Summary of Field Duplicate Detections
Stage 2 Source Control Evaluation
RP - Portland Site

Analytical Method	Analyte	Unit	MRL	Primary Result	Duplicate Result	RPD
Sample RP-24-85 (1048-01 and 1048-02)						
VOCs	Vinyl Chloride	µg/L	12	8.5	ND	NC
	Acetone	µg/L	60	ND	86	NC
	cis-1,2-Dichloroethene	µg/L	12	6.4	7.1	10%
	Trichloroethene	µg/L	12	12	12	0%
	Chlorobenzene	µg/L	12	47	47	0%
	Ethylbenzene	µg/L	12	ND	4.6	NC
	m,p-Xylene	µg/L	12	ND	7.3	NC
	1,3-Dichlorobenzene	µg/L	12	13	14	7%
	1,4-Dichlorobenzene	µg/L	12	130	130	0%
	1,2-Dichlorobenzene	µg/L	12	480	490	2%
SVOCs	1,3-Dichlorobenzene	µg/L	10	13	13	0%
	1,4-Dichlorobenzene	µg/L	10	120	120	0%
	1,2-Dichlorobenzene	µg/L	10	320	310	3%
	Dimethylphthalate	µg/L	10	20	20	0%
Herbicides	2,4,5-TP (Silvex)	µg/L	0.14	27	29	7%
Total Metals	Calcium	µg/L	5,000	378,000	379,000	0%
	Copper	µg/L	25	2.2	2.3	4%
	Iron	µg/L	200	350	349	0%
	Magnesium	µg/L	10	112,000	112,000	0%
	Manganese	µg/L	5,000	1,540	1,540	0%
	Nickel	µg/L	15	12.6	11.1	13%
	Potassium	µg/L	5,000	10,300	10,400	1%
	Sodium	µg/L	5,000	47,300	47,200	0%
	Vanadium	µg/L	50	5.7	5.7	0%
	Zinc	µg/L	20	6.6	7.7	15%
Dissolved Metals	Calcium	µg/L	5,000	381,000	378,000	1%
	Iron	µg/L	200	301	294	2%
	Magnesium	µg/L	10	113,000	112,000	1%
	Manganese	µg/L	5,000	1,550	1,560	1%
	Nickel	µg/L	15	12.5	12.1	3%
	Potassium	µg/L	5,000	10,400	10,400	0%
	Sodium	µg/L	5,000	47,100	47,200	0%
	Vanadium	µg/L	50	5.0	6.0	18%
	Zinc	µg/L	20	7.2	5.7	23%

Notes:
MRL = method reporting limit
NC = not calculable
ND = not detected
RPD = relative percent difference
STL = Severn Trent Laboratories, Inc.
SVOCs = semivolatile organic compounds
VOCs = volatile organic compounds
Bold = outside QAPP acceptance limits

TABLE 3
Interlaboratory Split Samples Submitted to STL and TestAmerica
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Class	Analyte	UNIT	Primary Result (STL)	Split Result (TestAmerica)	RPD
Sample MW-03-137 (1043-01 and 1043-05)					
VOCs	Chlorobenzene	µg/L	91	96.9	6%
	1,3-Dichlorobenzene	µg/L	20	20.6	3%
	1,4-Dichlorobenzene	µg/L	220	225	2%
	1,2-Dichlorobenzene	µg/L	660	596	10%
SVOCs	1,3-Dichlorobenzene	µg/L	20	20.8	4%
	1,4-Dichlorobenzene	µg/L	190	198	4%
	1,2-Dichlorobenzene	µg/L	420	534	24%
Herbicides	2,4,5-TP (Silvex)	µg/L	2.3	<3.00	NC
Total Metals	Arsenic	µg/L	<3.3	1.47	NC
	Calcium	µg/L	66,000	72,400	9%
	Iron	µg/L	2,360	2,490	5%
	Magnesium	µg/L	28,000	29,800	6%
	Manganese	µg/L	4,310	4,990	15%
	Nickel	µg/L	<5.5	2.78	NC
	Potassium	µg/L	4,190	4,390	5%
	Sodium	µg/L	55,800	62,400	11%
	Zinc	µg/L	5.3	<5.0	NC
Dissolved Metals	Arsenic	µg/L	<3.3	1.67	NC
	Calcium	µg/L	67,200	75,800	12%
	Iron	µg/L	2,380	2,520	6%
	Magnesium	µg/L	28,500	31,000	8%
	Manganese	µg/L	4,390	4,910	11%
	Nickel	µg/L	<5.5	2.58	NC
	Potassium	µg/L	4,310	4,790	11%
	Sodium	µg/L	57,100	64,400	12%
	Zinc	µg/L	4.8	<5.0	NC
Sample RP-06-95 (1052-01 and 1052-05)					
VOCs	Vinyl chloride	µg/L	30	50.1	50%
	1,1-Dichloroethene	µg/L	6.5	<10.0	NC
	cis-1,2-dichloroethene	µg/L	20	21.7	8%
	Trichloroethene	µg/L	11	11.1	1%
	Chlorobenzene	µg/L	260	269	3%
	1,3-Dichlorobenzene	µg/L	31	31.3	1%
	1,4-Dichlorobenzene	µg/L	320	318	1%
	1,2-Dichlorobenzene	µg/L	1,200	1,030	15%
SVOCs	1,3-Dichlorobenzene	µg/L	32	25.5	23%
	1,4-Dichlorobenzene	µg/L	310	254	20%
	1,2-Dichlorobenzene	µg/L	880	783	12%
Herbicides	2,4,5-TP (Silvex)	µg/L	58	59.8	3%
	Dichlorprop	µg/L	<480	6.97	NC

TABLE 3
Interlaboratory Split Samples Submitted to STL and TestAmerica
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Class	Analyte	UNIT	Primary Result (STL)	Split Result (TestAmerica)	RPD
Total Metals	Arsenic	µg/L	5.5	<50.0	NC
	Calcium	µg/L	362,000	418,000	14%
	Iron	µg/L	3,340	3,390	1%
	Magnesium	µg/L	133,000	144,000	8%
	Manganese	µg/L	12,800	14,600	13%
	Nickel	µg/L	6.2	<50.0	NC
	Potassium	µg/L	13,800	13,000	6%
	Sodium	µg/L	171,000	190,000	11%
	Vanadium	µg/L	2.9	<10.0	NC
	Zinc	µg/L	4.3	<20.0	NC
Dissolved Metals	Arsenic	µg/L	4.8	<50.0	NC
	Calcium	µg/L	373,000	438,000	16%
	Iron	µg/L	3,410	3,400	0%
	Magnesium	µg/L	134,000	144,000	7%
	Manganese	µg/L	13,100	14,900	13%
	Nickel	µg/L	7	<50.0	NC
	Potassium	µg/L	14,200	13,900	2%
	Sodium	µg/L	168,000	181,000	7%
	Zinc	µg/L	4.9	<20.0	NC

Notes:

NC = Not Calculable

RPD = Relative Percent Difference

STL = Severn Trent Laboratories, Inc.

SVOCs = semivolatile organic compounds

TestAmerica = TestAmerica Analytical Testing Corporation

VOCs = volatile organic compounds

TABLE 4
Data Qualifiers for Volatile Organic Compounds by EPA Method 8260B
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-97	RP-21-150	RP-24-85	RP-22-29	RP-22-75	RP-22-151	RP-23-30	RP-23-85	RP-23-100	RP-23-125	RP-20-97
	1003-01	1012-01	1018-01	1024-01	1025-01	1026-01	1027-01	1028-01	1029-01	1030-01	1031-01
1,1-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichlorobenzene	(none)	(none)	**U MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichloropropane	(none)	(none)	**UJ BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trimethylbenzene	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
1,2-Dibromo-3-chloropropane	(none)	(none)	**UJ BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
1,3,5-Trimethylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)
1,4-Dichlorobenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Butanone (MEK)	(none)	(none)	**J DL, BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Hexanone	(none)	(none)	**UJ BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acetone	(none)	(none)	**UJ BC, MB**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzene	(none)	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)
Bromomethane	(none)	(none)	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Chlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroethane	**UJ BC**	**UJ BC**	**UJ BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroform	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	**J DL**
Chloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**
cis-1,2-Dichloroethene	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)
Dichlorodifluoromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LL**	**UJ LL**
Ethylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iodomethane	(none)	**UJ LC**	**UJ BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Isobutylalcohol	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Isopropylbenzene	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
m,p-Xylene	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**
Methylene chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Methyl-t-Butyl Ether (MTBE)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	**J BC**	**J BC**	(none)	**U MB**	(none)	(none)	(none)	(none)	(none)	**J CH**
n-Propylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
o-Xylene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
sec-Butylbenzene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Styrene	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
tert-Butylbenzene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	(none)	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	(none)	**J DL**
Trichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vinyl chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)

TABLE 4
Data Qualifiers for Volatile Organic Compounds by EPA Method 8260B
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-25	RP-20-110	RP-21-125	RP-21-28	RP-21-150	RP-21-150	MW-03-S	MW-03-81	MW-03-I	MW-03-137	MW-03-141	RP-24-30
	1032-01	1033-01	1034-01	1035-01	1036-01	1036-02	1037-01	1041-01	1042-01	1043-01	1044-01	1046-01
1,1-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichlorobenzene	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trimethylbenzene	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
1,2-Dibromo-3-chloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**
1,3,5-Trimethylbenzene	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	(none)
2-Butanone (MEK)	(none)	**J DL, CH**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Hexanone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acetone	**U TB**	**J DL, CH**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J CH**
Benzene	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Bromomethane	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	(none)	(none)	(none)
Chlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloroform	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloromethane	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)
cis-1,2-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dichlorodifluoromethane	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)
Ethylbenzene	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iodomethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BC**	**UJ BC**	**UJ BC**
Isobutylalcohol	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Isopropylbenzene	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
m,p-Xylene	(none)	**J DL**	(none)	(none)	(none)	(none)	U RB	(none)	(none)	(none)	(none)	**J DL**
Methylene chloride	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Methyl-t-Butyl Ether (MTBE)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Naphthalene	(none)	**J CH**	(none)	**J CH**	**J DL, CH**	**J DL, CH**	**J CH**	**J CH**	**J DL, CH**	(none)	(none)	(none)
n-Propylbenzene	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
o-Xylene	(none)	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	(none)
sec-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Styrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
tert-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**
Trichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vinyl chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 4
Data Qualifiers for Volatile Organic Compounds by EPA Method 8260B
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-24-60	RP-24-85	RP-24-85	RP-24-73	RP-06-30	RP-06-87	RP-06-95	RP-06-105
	1047-01	1048-01	1048-02	1049-01	1050-01	1051-01	1052-01	1053-01
1,1-Dichloroethene	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
1,2,3-Trichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,3-Trichloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2,4-Trimethylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dibromo-3-chloropropane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,2-Dichlorobenzene	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
1,3,5-Trimethylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	(none)	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
2-Butanone (MEK)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Hexanone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acetone	**J DL**	(none)	**J DL, CH**	**J CH**	(none)	(none)	(none)	(none)
Benzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromomethane	(none)	(none)	(none)	(none)	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Chlorobenzene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Chloroethane	(none)	(none)	(none)	(none)	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Chloroform	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chloromethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
cis-1,2-Dichloroethene	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**
Dichlorodifluoromethane	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Ethylbenzene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iodomethane	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	(none)	(none)	(none)	(none)
Isobutylalcohol	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Isopropylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
m,p-Xylene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Methylene chloride	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Methyl-t-Butyl Ether (MTBE)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
n-Propylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
o-Xylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
sec-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Styrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
tert-Butylbenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Toluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Trichloroethene	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	**J DL**
Vinyl chloride	(none)	**J DL**	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**

Notes:

BC = Bad calibration curve. Analytical result may be biased high.

CH = High CCV recovery. Analytical result may be biased.

DL = Value between MDL and RL.

EPA = U.S. Environmental Protection Agency

LC = Low CCV recovery. Analytical result may be biased low.

LL = Low LCS recovery. Analytical result may be biased low.

LM = Low MS recovery. Analytical result may be biased low.

MB = Method blank contamination.

RB = Rinsate blank contamination.

TB = Trip blank contamination.

TABLE 4a
Initial Calibration for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	ICAL Exceedance		Affected Samples	Effects on Data Usability
	RSD	RRF		
ICAL analyzed on October 19, 2006 on instrument N			RP-20-97 (1003-01) RP-21-150 (1012-01) RP-24-85 (1018-01) RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01) RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01) RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-1500 (1036-01) RP-21-1500 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01) MW-03-137 (1043-01) MW-03-141 (1044-01) RP-24-30 (1046-01) RP-24-60 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02) RP-24-73 (1049-01) RP-06-30 (1050-01) RP-06-87 (1051-01) RP-06-95 (1052-01) RP-06-105 (1053-01)	AMEC UJ qualified the nondetected isobutyl alcohol from associated samples because of possible bias in the analytical results, despite the very low RRFs into ICAL. The results are being used for the improvement of the Conceptual Site Model (CSM) only, and not for regulatory or risk compliance. (**UJ-BC**)
Isobutyl Alcohol		0.009		
ICAL analyzed on November 3, 2006 on instrument M				
Isobutyl Alcohol	19%	0.005		
ICAL analyzed on November 13, 2006 on instrument M				
Isobutyl Alcohol		0.007		
ICAL analyzed on November 29, 2006 on instrument M				
Isobutyl Alcohol		0.008		
ICAL analyzed on December 4, 2006 on instrument M				
Isobutyl Alcohol		0.009		
ICAL analyzed on October 19, 2006 on instrument N				
Chloroethane	16%		RP-20-97 (1003-01) RP-21-150 (1012-01)	AMEC UJ qualified the nondetected chloroethane results from the associated sample because of possible bias in the analytical results. (**UJ-BC**)

TABLE 4a
Initial Calibration for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	ICAL Exceedance		Affected Samples	Effects on Data Usability
	RSD	RRF		
ICAL analyzed on November 3, 2006 on instrument M				
Bromomethane Chloroethane Acetone Iodomethane 2-Butanone 2-Hexanone 1,2,3-Trichloropropane 1,2-Dibromo-3-Chloropropane Naphthalene	20% 18% 22% 26% 16% 20% 18% 23% 21%		RP-21-1500 (1012-01DL) RP-24-85 (1018-01)	AMEC J qualified the detected results and UJ qualified the nondetected results for the associated analytes in sample RP-24-85 (1018-01) and J qualified the detected naphthalene results from sample RP-21-150 (1012-01DL) because of possible bias in the analytical results. (**J/UJ-BC**)
ICAL analyzed on November 13, 2006 on instrument M				
Bromomethane	17%		RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01) RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01) RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-1500 (1036-01) RP-21-1500 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01)	AMEC UJ qualified the nondetected bromomethane results from the associated samples because of possible bias in the analytical results. (**UJ-BC**)
ICAL analyzed on November 29, 2006 on instrument M				
Iodomethane	35%		MW-03-137 (1043-01) MW-03-141 (1044-01) RP-24-30 (1046-01) RP-24-60 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02) RP-24-73 (1049-01)	AMEC UJ qualified the nondetected iodomethane results from the associated samples because of possible bias in the analytical results. (**UJ-BC**)

TABLE 4a
Initial Calibration for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	ICAL Exceedance		Affected Samples	Effects on Data Usability
	RSD	RRF		
ICAL analyzed on December 4, 2006 on instrument M				
Bromomethane Chloroethane	16% 27%		RP-06-30 (1050-01) RP-06-87 (1051-01) RP-06-95 (1052-01) RP-06-105 (1053-01)	AMEC UJ qualified the nondetected bromomethane and chloroethane results from the associated samples because of possible bias in the analytical results. (**UJ-BC**)

Notes:

RSD = relative standard deviation

RRF = relative response factor

ICAL = initial calibration

TABLE 4b
Continuing Calibration for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	CCAL Recovery	Affected Samples	Effects on Data Usability
CCAL analyzed November 3, 2006 on instrument N.			
Iodomethane	72%	RP-21-150 (1012-01)	AMEC UJ qualified the nondetected iodomethane result from the associated sample because of possible low bias in the analytical results. (**UJ-LC**)
1,2-Dibromo-3-Chloropropane 1,2,4-Trichlorobenzene Hexachlorobutadiene 1,2,3-Trichlorobenzene	141% 143% 138% 149%		The recoveries were high and these analytes were not detected in the associated sample. Data usability is not adversely affected.
Naphthalene	151%		The naphthalene result is reported from a different sequence. Data usability is not adversely affected.
CCAL analyzed November 21, 2006 on instrument M at 16:19.			
Acetone 2-Hexanone Naphthalene	139% 124% 126%	RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01)	AMEC J qualified the detected acetone result from sample RP-20-25 (1032-01) and the detected naphthalene result from sample RP-20-97 (1031-01) because of possible high bias in the analytical results. (**J-CH**)
CCAL analyzed November 26, 2006 on instrument M at 17:14			
Acetone 2-Butanone 2-Methyl-2-pentanone 2-Hexanone Naphthalene	139% 127% 122% 125% 122%	RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01)	AMEC J qualified the detected results for these analytes in the associated samples because of possible high bias in the analytical results. (**J-CH**)
CCAL analyzed December 1, 2006 on instrument M at 09:37.			
Acetone	126%	RP-24-30 (1046-01) RP-24-85 (1048-02) RP-24-73 (1049-01)	AMEC J qualified the detected acetone results from samples RP-24-30 (1046-01), RP-24-85 (1048-02), and RP-24-73 (1049-01) because of possible high bias in the analytical results. (J-CH)
Iodomethane Bromomethane	165% 126%		The recoveries were high and these analytes were not detected in the associated sample. Data usability is not adversely affected.

Notes:

CCAL = continuing calibration

TABLE 4c
Laboratory Blank Detections for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Analyte	Concentration detected in Blank (µg/L or µg/Kg)	Affected Samples	Analyte concentration in Sample (µg/L or µg/Kg)	Effects on Data Usability
MBLK06	Acetone	1800 µg/Kg	RP-20-97 (1003-01)		These analytes were not detected in the associated sample, therefore data usability is not adversely affected.
MBLK101906NA	Hexachlorobutadiene	1.0 µg/L			
MBLK110306MA	1,2,3-Trichlorobenzene	0.94 µg/Kg	RP-21-150 (1012-01)		This analyte was not detected in the associated sample, therefore data usability is not adversely affected.
	Acetone	2.9 µg/Kg		77 µg/Kg	Sample concentration was greater than ten times the concentration detected in the blank. Data usability is not adversely affected.
	Naphthalene	1.5 µg/Kg		5100 µg/Kg	This analyte was reported from a run with a different sequence. Data usability is not adversely affected.
MBLK110306MA	1,2,3-Trichlorobenzene Acetone	0.94 µg/Kg 2.9 µg/Kg	RP-24-85 (1018-01)	2.7 µg/Kg 20 µg/Kg	AMEC U qualified the 1,2,3-Trichlorobenzene and acetone results from this sample because the concentrations detected in the sample were less than 5 or 10 times the concentration detected in the blank. (**U-MB**)
	Naphthalene	1.5 µg/Kg		120 µg/Kg	Sample concentration was greater than 5 times the concentration detected in the blank. Data usability is not adversely affected.
MBLK111306MA	Naphthalene	0.23 µg/L	RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01)	1.5 µg/L 0.23 µg/L 3.8 µg/L	AMEC U qualified the detected naphthalene result from sample RP-22-75 (1025-01) because the concentration detected in the sample was less than 5 times the concentration detected in the blank. (**U-MB**)
MBLK112106MA	Naphthalene	0.21 µg/L	RP-23-125 (1030-01) RP-20-97 (1031-01)	4.9 µg/L	This analyte was either not detected in the associated samples or sample concentrations were greater than five times the concentration detected in the blank. Data usability is not adversely affected.

Notes:

U = Not detected at or above the Method Detection Limit (MDL) level

µg/L = micrograms per Liter

µg/Kg = micrograms per kilogram

ID = identification

TABLE 4d
Trip Blank Detections for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Trip Blank ID	Detected Analytes	Analyte Concentration in TB (µg/L)	Affected Samples	Analyte Concentration in Samples (µg/L)	Effects on Data Usability
1030-03	Acetone	2	RP-23-125 (1030-01) RP-20-97 (1031-01)		This analyte was not detected in samples RP-23-125 (1030-01) and RP-20-97 (1031-01), therefore data usability is not adversely affected.
			RP-20-25 (1032-01)	3.2	AMEC U qualified the acetone result from sample RP-20-25 (1032-01) because the concentrations detected in the sample were less than 10 times the concentration detected in the blank. (**U-TB**)
1036-03	Acetone	2.8	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)		This analyte was not detected in the associated sample, therefore data usability is not adversely affected.
1043-03	Acetone	2.7	MW-03-137 (1043-01) MW-03-141 (1044-01)		These analytes were not detected in the associated samples, therefore data usability is not adversely affected.
	1,2,4-Trichlorobenzene	0.27	MW-03-137 (1043-01) MW-03-141 (1044-01)		
	1,2,3-Trichlorobenzene	0.24	MW-03-137 (1043-01) MW-03-141 (1044-01)		

Note:

µg/L = micrograms per Liter

ID = identification

U = Not detected at or above the Method Detection Limit (MDL) level

TB = trip blank

TABLE 4e
Rinsate Blank Detections for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Rinsate Blank ID	Detected Analytes	Analyte Concentration in RB (µg/L)	Affected Samples	Analyte Concentration in Sample (µg/L)	Effects on Data Usability
1037-04	Acetone	9.5	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)		These analytes were not detected in the associated samples. Data usability is not adversely affected.
	Toluene	0.38	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)		
	m,p-Xylene	0.32	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	0.35	AMEC U qualified the detected m,p-xylene result from sample MW-03-S (1037-01) because the concentration detected in the sample was less than 5 times the concentration detected in the rinsate blank. (**U-RB**)
	Naphthalene	0.22	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	4.1 1.4 1.9	Sample concentrations were greater than five times the concentration detected in the rinse blank. Data usability is not adversely affected.
1053-04	m,p-Xylene	0.36	RP-06-105 (1053-01)		This analyte was not detected in the associated sample. Data usability is not adversely affected.

Note:

U = Not detected at or above the Method Detection Limit (MDL)

µg/L = micrograms per Liter

ID = identification

RB = rinsate blank

TABLE 4f
LCS Recoveries for Volatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS MA112106LCS			
RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01)	Dichlorodifluoromethane Chloromethane	51% 64%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected dichlorodifluoromethane and chloromethane results from associated samples because of possible low bias in the analytical results. (**UJ-LL**)
LCS MA112606LCS			
RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01)	Dichlorodifluoromethane Chloromethane	53% 69%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected dichlorodifluoromethane and chloromethane results from associated samples because of possible low bias in the analytical results. (**UJ-LL**)

Notes:

LCS = laboratory control sample

TABLE 5
Data Qualifiers for Chlorinated Herbicides by EPA Method 8151A
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-97	RP-21-150	RP-24-85	RP-22-29	RP-22-75	RP-22-151	RP-23-30	RP-23-85	RP-23-100	RP-23-125	RP-20-97	RP-20-25
	1003-01	1012-01	1018-01	1024-01	1025-01	1026-01	1027-01	1028-01	1029-01	1030-01	1031-01	1032-01
2,4,5-TP (Silvex)	**R MI**	**R MI**	**R MI**	(none)	(none)	**J HL**	(none)	(none)	**J HL**	**J CH**	(none)	(none)
2,4-DB	**R MI**	**R MI**	**R MI**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoxynil	**R MI**	**R MI**	**R MI**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dalapon	**R MI**	**R MI**	**R MI**	(none)	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dinoseb	**R MI**	**R MI**	**R MI**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
MCPA	**R MI**	**R MI**	**R MI**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPP	**R MI**	**R MI**	**R MI**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Analyte name	RP-24-85	RP-24-85	RP-24-73	RP-06-30	RP-06-87	RP-06-95	RP-06-105	RP-20-110	RP-21-125	RP-21-28	RP-21-150	RP-21-150
	1048-01	1048-02	1049-01	1050-01	1051-01	1052-01	1053-01	1033-01	1034-01	1035-01	1036-01	1036-02
2,4,5-TP (Silvex)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LM**	(none)	(none)
2,4-DB	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoxynil	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	(none)	(none)
Dalapon	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**
Dinoseb	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**
MCPA	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
MCPP	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LC**	**UJ LC**

Analyte name	MW-03-S	MW-03-81	MW-03-I	MW-03-137	MW-03-141	RP-24-30	RP-24-60
	1037-01	1041-01	1042-01	1043-01	1044-01	1046-01	1047-01
2,4,5-TP (Silvex)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bromoxynil	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dalapon	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Dinoseb	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
MCPA	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Notes:
CH = High CCV recovery. Analytical results may be biased high
EPA = U.S. Environmental Protection Agency
HL = High laboratory control sample recovery
LC = Low CCV recovery. Analytical result may be bias low.
LL = Low LCS recovery. Analytical results may be biased low.
LM = Low MS/MSD recovery
MI = Matrix interference
SC = Second column identification noncompliant with QA criteria.

TABLE 5a
Continuing Calibration for Chlorophenoxy Acid Herbicides
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	CCAL Recovery	Affected Samples	Effects on Data Usability
CCAL analyzed November 22, 2006 on instrument 2624_1 at 04:24			
MCPA	83%	RP-21-150 (1036-01) RP-21-150 (1036-02)	The recovery was low and AMEC UJ qualified the nondetected results for associated analyte from samples RP-21-150 (1036-01) and RP-21-150 (1036-02) because of possible low bias in the analytical results. (**UJ-LC**)
CCAL analyzed November 27, 2006 on instrument 2624_1 at 23:42			
Dalapon Dicamba 2,4,5 - TP (Silvex) 2,4,5 - T	117% 118% 127% 121%	MW-03-81 (1041-01) MW-03-I (1042-01)	The recoveries were high and these analytes were not detected in the associated samples. Data usability is not adversely affected.
CCAL analyzed November 28,2006 on instrument 2624_1 at 19:58			
2,4,5 - TP (Silvex)	117%	RP-23-125 (1030-01)	AMEC J qualified the detected 2,4,5-TP (Silvex) result from sample RP-23-125 (1030-01) because of possible high bias in the analytical result. **(J-CH**)

Notes:

%D (percent drift) has been expressed as percent relative standard deviation (%RSD)

CCAL = continuing calibration

TABLE 5b
LCS Recoveries for Chlorophenoxy Acid Herbicides
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS G110906LCS			
RP-22-29 (1024-01) RP-22-75 (1025-01)	Dichlorprop	158%	The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.
	Dinoseb	19%	The recovery was low and AMEC UJ qualified the nondetected dinoseb result in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
LCS E111206LCS			
RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01)	Dalapon Dinoseb	67% 45%	The recoveries were low and AMEC UJ qualified the nondetected dalapon and dinoseb results in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
	2,4,5 - TP (Silvex)	138%	AMEC J qualified the detected 2,4,5-TP results in samples RP-22-151 (1026-01) and RP-23-100 (1029-01) because of possible high bias in the analytical results. (**UJ-HL**)
	Dichlorprop	165%	The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.
LCS F111706LCS			
RP-23-125 (1030-01) RP-20-97 (1031-01)	Dalapon Dinoseb	68% 62%	The recoveries were low and AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
RP-20-25 (1032-01) RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	Dichlorprop	135%	The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.
LCS E112106LCS			
MW-03-81 (1041-01) MW-03-I (1042-01)	Dalapon Dinoseb Bromoxynil	62% 42% 43%	The recoveries were low and AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
LCS E112106LCS			
MW-03-137 (1043-01) MW-03-141 (1044-01)	Dalapon Dinoseb Bromoxynil	64% 42% 43%	The recoveries were low and AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)

TABLE 5b
LCS Recoveries for Chlorophenoxy Acid Herbicides
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS B112606LCS			
RP-24-30 (1046-01) RP-24-60 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02) RP-24-73 (1049-01)	Dalapon Dinoseb Bromoxynil	69% 52% 53%	The recoveries were low and AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
LCS A120306LCS			
RP-06-30 (1050-01) RP-06-87 (1051-01) RP-06-95 (1052-01) RP-06-105 (1053-01)	Dalapon Dinoseb Bromoxynil	65% 60% 60%	The recoveries were low and AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)

Notes:
LCS = laboratory control sample

TABLE 5c
Surrogate Recoveries for Chlorophenoxy Acid Herbicides
Stage 2 Source Control Evaluation
RP - Portland Site

Sample ID	Surrogates Outside Acceptance Limits	Recovery	Effects on Data Usability
RP-23-100 (1029-01)	2,4-Dichlorophenylacetic acid (DCAA)	0%	The sample was analyzed at a 30-fold dilution because of high analyte concentrations. Surrogate recovery cannot be fully evaluated and AMEC did not qualify the associated data.
RP-23-125 (1030-01)	DCAA	0%	The samples were analyzed at 100-fold dilution because of high analyte concentrations. Surrogate recovery cannot be fully evaluated and AMEC did not qualify the associated data.
RP-24-85 (1048-01			
RP-24-85 (1048-02)			

Notes:

ID = identification

TABLE 5d
MS/MSD Recovery and Precision for Chlorophenoxy Acid Herbicides
Stage 2 Source Control Evaluation
RP - Portland Site

Spiked Sample	Analytes with Recoveries Outside Acceptance Limits	MS/MSD Recoveries	Effect on Data Usability
RP-24-85 (1018-01)	Dalapon Dinoseb	54% / 52% 39% / 46%	The recoveries were low and AMEC UJ qualified the nondetected dinoseb and dalapon results from the spiked sample because of possible low bias induced by matrix interference. (**UJ-LM**)
	Bromoxynil	57% / 68%	The average bromoxynil recovery is within acceptance limits. In AMEC's professional opinion data usability is not adversely affected.
RP-21-28 (1035-01)	Dalapon 2,4,5 - TP (Silvex) Dinoseb	61% / 57% 44% / 45% 56% / 55%	The recoveries were low and AMEC UJ qualified the nondetected dinoseb and dalapon results and J qualified the detected 2,4,5-TP(Silvex) result from the spiked sample because of possible low bias induced by matrix interference. (**UJ/J-LM**)
RP-06-87 (1051-01)	2,4,5 - TP (Silvex)	789% / 1,053%	The background 2,4,5-TP (Silvex) concentration, at 44 µg/L, was more than four times the spike concentration of 0.38 µg/L. In AMEC professional opinion, data usability is not adversely affected.

Notes:

µg/L = micrograms per Liter

MS/MSD = matrix spike/matrix spike duplicate

TABLE 6
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-97	RP-21-150	RP-24-85	RP-22-29	RP-22-75	RP-22-151	RP-23-30	RP-23-85	RP-23-100	RP-23-125	RP-20-97
	1003-01	1012-01	1018-01	1024-01	1025-01	1026-01	1027-01	1028-01	1029-01	1030-01	1031-01
1,2-Dichlorobenzene	UJ LL	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	J DL	(none)	(none)	J DL	J DL	(none)
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,3,4,6-Tetrachlorophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2,4,5-Trichlorophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2,4,6-Trichlorophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2,4-Dichlorophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	J DL, LS	UJ LS	UJ LS
2,4-Dimethylphenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2,4-Dinitrophenol	UJ LC, LL	UJ LL	UJ LL	UJ LC, LL, LS	UJ LC, LL, LS	UJ LC, LL, LS	UJ LC, LL, LS	UJ LC, LL, LS	UJ LC, LL, LS	UJ LC, LS	UJ LC, LS
2,4-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,6-Dichlorophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2,6-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chloronapthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chlorophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	J DL, LS	UJ LS	UJ LS
2-Methyl-4,6-dinitrophenol	UJ LL	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2-Methylnaphthalene	J DL	(none)	J DL	J DL	(none)	(none)	J DL	(none)	(none)	(none)	J DL
2-Methylphenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
2-Nitroaniline	(none)	(none)	(none)	UJ LC	UJ LC	UJ LC	UJ LC	UJ LC	UJ LC	(none)	(none)
2-Nitrophenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
3,3'-Dichlorobenzidine	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL
3-Nitroaniline	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL
4-Bromophenylphenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chloro-3-methylphenol	(none)	(none)	(none)	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS	UJ LS
4-Chloroaniline	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL	UJ LL
4-Chlorophenylphenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Methylphenol (P-CRESOL)	UJ BC	(none)	UJ BC	UJ BC, LS	UJ BC, LS	UJ BC, LS	J BC, DL, LS	UJ BC, LS	UJ BC, LS	UJ LS	UJ LS
4-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitrophenol	UJ LC	(none)	(none)	UJ LL, LS	UJ LL, LS	UJ LL, LS	UJ LL, LS	UJ LL, LS	UJ LL, LS	UJ LL, LS	UJ LL, LS
Acenaphthene	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)	(none)	(none)	J DL
Acenaphthylene	J DL	J DL	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)
Anthracene	(none)	(none)	(none)	J DL	(none)	(none)	J DL	(none)	(none)	(none)	(none)
Benzo(a)anthracene	(none)	(none)	J DL	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)
Benzo(a)pyrene	(none)	(none)	J DL	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)
Benzo(b)fluoranthene	(none)	(none)	J DL, MI	(none)	(none)	(none)	J DL	(none)	(none)	(none)	(none)
Benzo(ghi)perylene	(none)	(none)	J DL	J DL	(none)	(none)	J DL, HL	(none)	(none)	(none)	(none)
Benzo(k)fluoranthene	J BC, CH	J DL	UJ BC, LC, MI	UJ BC	UJ BC	UJ BC	J DL, BC, CH	UJ BC	UJ BC	(none)	(none)
Benzoic acid	UJ LC, LL	UJ BC, LL	UJ LL	R BS	R BS	R BS	R BS	R BS	R BS	R BS	R BS
Benzyl alcohol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 6
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-97	RP-21-150	RP-24-85	RP-22-29	RP-22-75	RP-22-151	RP-23-30	RP-23-85	RP-23-100	RP-23-125	RP-20-97
	1003-01	1012-01	1018-01	1024-01	1025-01	1026-01	1027-01	1028-01	1029-01	1030-01	1031-01
Bis(2-Chloroethoxy) methane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroethyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroisopropyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
bis(2-Ethylhexyl) phthalate	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Butylbenzylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chrysene	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Dibenzo(a,h)anthracene	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzofuran	**J DL**	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Diethylphthalate	**UJ BC**	(none)	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	(none)	(none)
Dimethylphthalate	(none)	(none)	**UJ LC**	**UJ LC**	**UJ LC**	**J DL, LC**	**J DL, LC**	**J LC**	**J DL, LC**	**J DL**	(none)
Di-n-butylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Di-n-octyl phthalate	(none)	**UJ BC**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ BC**	**UJ BC**
Fluoranthene	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL, HL**	(none)	(none)	(none)	(none)
Fluorene	**J DL, BC**	(none)	**J BC**	**J DL, BC**	**UJ BC**	**UJ BC**	**J DL, BC**	**UJ BC**	**UJ BC**	(none)	(none)
Hexachlorobenzene	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorocyclopentadiene	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Indeno(1,2,3-cd)pyrene	(none)	**J DL**	**J DL**	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Isophorone	**UJ LL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**
N-Nitrosodimethylamine	(none)	**UJ LL**	**UJ LC, LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)
N-Nitrosodi-n-propyl amine	**UJ BC**	(none)	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	(none)	(none)
N-Nitrosodiphenylamine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Pentachlorophenol	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
Phenanthrene	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Phenol	(none)	(none)	(none)	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**
Pyrene	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)

TABLE 6
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-25	RP-20-110	RP-21-125	RP-21-28	RP-21-150	RP-21-150	MW-03-S	MW-03-81	MW-03-I	MW-03-137
	1032-01	1033-01	1034-01	1035-01	1036-01	1036-02	1037-01	1041-01	1042-01	1043-01
1,2-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
1,3-Dichlorobenzene	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	**J DL**
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
2,3,4,6-Tetrachlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2,4,5-Trichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2,4,6-Trichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2,4-Dichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2,4-Dimethylphenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2,4-Dinitrophenol	**UJ LC, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LC, LL, LS**	**UJ LL, LS**
2,4-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,6-Dichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2,6-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chloronapthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2-Methyl-4,6-dinitrophenol	**UJ LS**	**UJ LL, LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2-Methylnaphthalene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
2-Methylphenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
2-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Nitrophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
3,3'-Dichlorobenzidine	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
3-Nitroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
4-Bromophenylphenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chloro-3-methylphenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
4-Chloroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
4-Chlorophenylphenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Methylphenol (P-CRESOL)	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
4-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitrophenol	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LM, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**
Acenaphthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	J DL	(none)
Acenaphthylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Anthracene	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)anthracene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(b)fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(ghi)perylene	(none)	(none)	(none)	(none)	**UJ LC**	**UJ LC**	**UJ LC**	(none)	(none)	(none)
Benzo(k)fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzoic acid	**J DL, BC, BS**	**J DL, BC, BS**	**J DL, BC, BS**	**J DL, BC, BS, LM**	**R BS**	**R BS**	**R BS**	**R BS**	**J DL, BC, BS**	**R BS**
Benzyl alcohol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 6
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-25	RP-20-110	RP-21-125	RP-21-28	RP-21-150	RP-21-150	MW-03-S	MW-03-81	MW-03-I	MW-03-137
	1032-01	1033-01	1034-01	1035-01	1036-01	1036-02	1037-01	1041-01	1042-01	1043-01
Bis(2-Chloroethoxy) methane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroethyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroisopropyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
bis(2-Ethylhexyl) phthalate	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
Butylbenzylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chrysene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzo(a,h)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzofuran	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
Diethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dimethylphthalate	(none)	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)
Di-n-butylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Di-n-octyl phthalate	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**
Fluoranthene	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)
Fluorene	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorocyclopentadiene	(none)	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
Hexachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Indeno(1,2,3-cd)pyrene	(none)	(none)	(none)	(none)	**UJ LC**	**UJ LC**	**UJ LC**	(none)	(none)	(none)
Isophorone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)
N-Nitrosodimethylamine	(none)	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**
N-Nitrosodi-n-propyl amine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
N-Nitrosodiphenylamine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Pentachlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**
Phenanthrene	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Phenol	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LM, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**
Pyrene	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)

TABLE 6
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	MW-03-141	RP-24-30	RP-24-60	RP-24-85	RP-24-85	RP-24-73	RP-06-30	RP-06-87	RP-06-95	RP-06-105
	1044-01	1046-01	1047-01	1048-01	1048-02	1049-01	1050-01	1051-01	1052-01	1053-01
1,2-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J LM**	(none)	(none)
1,3-Dichlorobenzene	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**
1,4-Dichlorobenzene	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
2,3,4,6-Tetrachlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2,4,5-Trichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2,4,6-Trichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2,4-Dichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2,4-Dimethylphenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2,4-Dinitrophenol	**UJ LC, LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LC, LL, LS**	**UJ LL, LS**	**UJ LL, LM, LS**	**UJ LL**	(none)
2,4-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2,6-Dichlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2,6-Dinitrotoluene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chloronapthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Chlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2-Methyl-4,6-dinitrophenol	**UJ LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LS**	**UJ LM, LS**	(none)	(none)
2-Methylnaphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Methylphenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
2-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
2-Nitrophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
3,3'-Dichlorobenzidine	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**
3-Nitroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**
4-Bromophenylphenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Chloro-3-methylphenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
4-Chloroaniline	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ LL**
4-Chlorophenylphenyl ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Methylphenol (P-CRESOL)	**UJ LS**	**J DL, LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)
4-Nitroaniline	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
4-Nitrophenol	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LS**	**UJ LM, LS**	(none)	(none)
Acenaphthene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Acenaphthylene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(a)pyrene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzo(b)fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LM**	(none)	(none)
Benzo(ghi)perylene	UJ LC	(none)	(none)	(none)	(none)	**UJ LC**	(none)	(none)	(none)	(none)
Benzo(k)fluoranthene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Benzoic acid	**R BS**	**J DL, BC, LL**	**J DL, BC, LL**	**UJ BC, LL**	**UJ BC, LL**	**UJ BC, LL**	**R BS**	**R BS**	**R BS**	**R BS**
Benzyl alcohol	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	UJ LL

TABLE 6
Data Qualifiers for Semivolatile Organic Compounds by EPA Method 8270C
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	MW-03-141	RP-24-30	RP-24-60	RP-24-85	RP-24-85	RP-24-73	RP-06-30	RP-06-87	RP-06-95	RP-06-105
	1044-01	1046-01	1047-01	1048-01	1048-02	1049-01	1050-01	1051-01	1052-01	1053-01
Bis(2-Chloroethoxy) methane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroethyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Bis(2-Chloroisopropyl) ether	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
bis(2-Ethylhexyl) phthalate	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Butylbenzylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chrysene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dibenzo(a,h)anthracene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**UJ LM**	(none)	(none)
Dibenzofuran	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Diethylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Dimethylphthalate	(none)	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)	**J DL**
Di-n-butylphthalate	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Di-n-octyl phthalate	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC**	**UJ BC, LM**	**UJ BC**	(none)
Fluoranthene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Fluorene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobenzene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorobutadiene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Hexachlorocyclopentadiene	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL, LM**	**UJ LL**	**UJ BC**
Hexachloroethane	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Indeno(1,2,3-cd)pyrene	UJ LC	(none)	(none)	(none)	(none)	**UJ LC**	(none)	**UJ LM**	(none)	(none)
Isophorone	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Naphthalene	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
N-Nitrosodimethylamine	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	**UJ LL**	(none)	(none)	(none)	**UJ LL**
N-Nitrosodi-n-propyl amine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
N-Nitrosodiphenylamine	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Pentachlorophenol	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LS**	**UJ LM, LS**	(none)	(none)
Phenanthrene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Phenol	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LS**	**UJ LL, LM, LS**	**UJ LL**	**UJ LL**
Pyrene	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)

Notes:
BC = Bad calibration curve
BS = Blank spike with unacceptable recovery
CH = High CCV recovery. Analytical result may be bias high
DL = Value between MDL and MRL
EPA = U.S. Environmental Protection Agency
HL = High LCS recovery. Analytical result may be bias high
LC = Low CCV recovery. Analytical result may be biased low.
LL = Low LCS recovery. Analytical result may be biased low.
LM = Low matrix spike recovery. Analytical result may be biased low.
LS = Low surrogate recovery
MI = Matrix interference

TABLE 6a
Initial Calibration for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Analyte	ICAL Exceedance		Affected Samples	Effects on Data Usability
	RSD	RRF		
ICAL analyzed on November 3, 2006 on instrument U				
N-Nitroso-di-n-propylamine 4-Methylphenol Fluorene Diethylphthalate Benzo (k) fluoranthene	18% 16% 18% 18% 20%		RP-20-97 (1003-01) RP-24-85 (1018-01) RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01)	AMEC J qualified the detected results and UJ qualified the non detected results in the associated samples because of possible bias in the analytical results. (**J/UJ-BC**)
ICAL analyzed on November 22, 2006 on instrument U				
Benzoic Acid Di-n-octylphthalate	18% 17%		RP-21-150 (1012-01) RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01) RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01) MW-03-137 (1043-01) MW-03-141 (1044-01) RP-24-30 (1046-01) RP-24-60 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02) RP-24-73 (1049-01) RP-06-30 (1050-01) RP-06-87 (1051-01) RP-06-95 (1052-01)	AMEC UJ qualified the nondetected benzoic acid and di-n-octylphthalate from the associated samples because of possible bias in the analytical results. (**UJ-BC**)
ICAL analyzed on December 12, 2006 on instrument U				
Hexachlorocyclopentadiene	16%		RP-06-105 (1053-01)	AMEC UJ qualified the nondetected result for this analyte from the associated sample because of possible bias in the analytical results. (**UJ-BC**)

Notes:

ICAL = Initial Calibration
ICV = Initial Calibration verification
RRF = relative response factor
RSD = relative standard deviation

TABLE 6b
Continuing Calibration for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	CCAL Recovery	Affected Samples	Effects on Data Usability
CCAL analyzed November 6, 2006 on instrument U at 06:50			
Benzoic Acid 2,4-Dinitrophenol 4-Nitrophenol	79% 76% 76%	RP-20-97 (1003-01)	The recoveries were low and these analytes were not detected in associated sample. AMEC UJ qualified the nondetected results for these analytes from the associated sample because of possible low bias in the analytical results. (**UJ-LC**)
Benzo(k)fluoranthene	123%		The recovery was high and benzo(k)fluoranthene was detected in the associated sample. AMEC J qualified the detected result for this analyte from the associated sample because of possible high bias in the analytical results. (**J-CH**)
CCAL analyzed November 9, 2006 on instrument U at 16:53			
N-Nitrosodimethylamine Dimethylphthalate Benzo(k)fluoranthene	39% 75% 70%	RP-24-85 (1018-01)	The recoveries were low and these analytes were not detected in associated sample. AMEC UJ qualified the nondetected results for these analytes from the associated sample because of possible low bias in the analytical results. (**UJ-LC**)
CCAL analyzed November 11, 2006 on instrument U at 10:50			
Benzoic Acid 2-Nitroaniline Dimethylphthalate 2,4-Dinitrophenol	68% 77% 74% 71%	RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01)	AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes from the associated samples because of possible low bias in the analytical results. (**J/UJ-LC**)
Benzo(k)fluoranthene	125%	RP-23-85 (1028-01) RP-23-100 (1029-01)	The recovery was high and this analyte was detected in sample RP-23-30 (1027-01). AMEC J qualified the detected result for this analyte from the associated sample because of possible high bias in the analytical results. (**J-CH**)
CCAL analyzed November 27, 2006 on instrument U at 09:45			
2,4-Dinitrophenol	79%	RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01) RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) MW-03-81 (1041-01) MW-03-I (1042-01)	The recovery was low and this analyte was not detected in associated samples. AMEC UJ qualified the nondetected results for this analyte from the associated samples because of possible low bias in the analytical results. (**UJ-LC**)
CCAL analyzed November 28, 2006 on instrument U at 11:30			
2,4-Dinitrophenol Indeno (1,2,3-cd) pyrene Benzo (g,h,i) perylene	74% 79% 77%	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01) MW-03-141 (1044-01) RP-24-73 (1049-01)	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected results for these analytes from the associated samples because of possible low bias in the analytical results. (**UJ-LC**)

TABLE 6b
Continuing Calibration for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	CCAL Recovery	Affected Samples	Effects on Data Usability
CCAL analyzed November 28, 2006 on instrument U at 14:58			
3-Nitroaniline 4-Nitroaniline	121% 127%	MW-03-137 (1043-01) RP-24-30 (1046-01) RP-24-60 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02)	The recoveries were high and these analytes were not detected in the associated samples. Data usability is not adversely affected.
CCAL analyzed November 30, 2006 on instrument U at 16:21			
Benzo(k)fluoranthene	124%	RP-06-30 (1050-01)	The recovery was high and benzo(k)fluoranthene was not detected in the associated sample. Data usability is not adversely affected.
CCAL analyzed December 1, 2006 on instrument U at 10:50			
2,2'-oxybis (1-Chloropropane) 4-Nitrophenol	126% 130%	RP-06-87 (1051-01) RP-06-95 (1052-01)	The recoveries were high and these analytes were not detected in the associated samples. Data usability is not adversely affected.
CCAL analyzed December 14, 2006 on instrument U at 16:42			
Benzo(k)fluoranthene	128%	RP-06-105 (1053-01)	The recovery was high and benzo(k)fluoranthene was not detected in the associated sample. Data usability is not adversely affected.

Notes:

%D (percent drift) has been expressed as percent relative standard deviation (%RSD)

CCAL = continuing calibration

TABLE 6c
LCS Recovery for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS B080106LCS			
RP-20-97 (1003-01)	1,2-Dichlorobenzene	67%	The recoveries were low and these analytes were not detected in the associated sample. AMEC UJ qualified the nondetected results for these analytes in the associated sample because of possible low bias in the analytical results. (**UJ-LL**)
	Isophorone	69%	
	Benzoic Acid	60%	
	4-Chloroaniline	44%	
	Hexachlorocyclopentadiene	55%	
	3-Nitroaniline	46%	
	2,4-Dinitrophenol	60%	
	2-methyl-4,6-dinitrophenolphenol	60%	
	Hexachlorobenzene	67%	
	Pentachlorophenol	40%	
	3,3'-Dichlorobenzidine	37%	
LCS E103106LCS			
RP-21-150 (1012-01) RP-24-85 (1018-01)	N-Nitrosodimethylamine	29%	The recoveries were low and these analytes were not detected in the associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
	Benzoic Acid	49%	
	4-Chloroaniline	55%	
	3-Nitroaniline	52%	
	2,4-Dinitrophenol	55%	
	Pentachlorophenol	55%	
	3,3'-Dichlorobenzidine	37%	
	N-nitrosodiphenylamine	134%	The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.
LCS H110906LCS			
RP-22-29 (1024-01) RP-22-75 (1025-01)	Benzoic Acid	0%	AMEC R qualified and rejected the nondetected benzoic acid results from the associated samples because the presence or absence of this analytical could not be definitively determined. (**R-BS**)
	N-Nitrosodimethylamine	63%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
	Phenol	43%	
	4-Chloroaniline	45%	
	3-Nitroaniline	52%	
	2,4-Dinitrophenol	50%	
	4-Nitrophenol	58%	
	3,3'-Dichlorobenzidine	44%	
	N-nitrosodiphenylamine	140%	The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.

TABLE 6c
LCS Recovery for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS B111206LCS			
RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01)	Benzoic Acid	0%	AMEC R qualified and rejected the nondetected benzoic acid results from the associated samples because the presence or absence of this analytical could not be definitively determined. (**R-BS**)
	N-Nitrosodimethylamine Phenol 4-Chloroaniline 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 3,3'-Dichlorobenzidine	67% 50% 32% 53% 63% 68% 44%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
	N-nitrosodiphenylamine Fluoranthene benzo(g,h,i)perylene	147% 133% 133%	AMEC J qualified the detected fluoranthene and benzo(g,h,i)perylene results from sample RP-23-30 (1027-01) because of possible high bias in the analytical results. (**J-HL**)
LCS C111406LCS			
RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01)	Benzoic Acid	4%	AMEC R qualified and rejected the nondetected benzoic acid results from the associated samples and J qualified the detected benzoic acid from sample RP-20-25 (1032-01) because the presence or absence of this analytical could not be definitively determined. (**R/J-BS**)
	Phenol 4-Chloroaniline 3-Nitroaniline 4-Nitrophenol 3,3'-Dichlorobenzidine	50% 30% 45% 65% 46%	The recoveries were low and these analytes were not detected in the associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)

TABLE 6c
LCS Recovery for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS D111506LCS			
RP-20-110 (1033-01)	Benzoic Acid	0%	AMEC J qualified the detected benzoic acid from the associated sample because of extremely low LCS recovery. (**J-BS**)
	N-Nitrosodimethylamine	60%	The recoveries were low and these analytes were not detected in the associated sample. AMEC UJ qualified the nondetected results for these analytes in the associated sample because of possible low bias in the analytical results. (**UJ-LL**)
		47%	
	4-Chloroaniline	43%	
	Hexachlorocyclopentadiene	62%	
	3-Nitroaniline	52%	
	2,4-Dinitrophenol	50%	
	4-Nitrophenol	50%	
	2-methyl-4,6-dinitrophenol	65%	
	3,3'-Dichlorobenzidine	46%	
LCS A111906LCS			
RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02)	Benzoic Acid	7%	AMEC R qualified and rejected the nondetected benzoic acid results from the associated samples and J qualified the detected benzoic acid from samples RP-21-125 (1034-01), RP-21-28 (1035-01), and MW-03-I (1042-01) because the presence or absence of this analytical could not be definitively determined. (**R/J-BS**)
	Phenol		
MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01)	N-Nitrosodimethylamine	63%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
	Phenol	50%	
	4-Chloroaniline	25%	
	Hexachlorocyclopentadiene	63%	
	3-Nitroaniline	40%	
	2,4-Dinitrophenol	65%	
	4-Nitrophenol	58%	
	3,3'-Dichlorobenzidine	38%	
LCS C112206LCS			
MW-03-136 (1043-01) MW-03-141 (1044-01)	Benzoic Acid	3%	AMEC R qualified and rejected the nondetected benzoic acid results from the associated samples because the presence or absence of this analytical could not be definitively determined. (**R-BS**)
	N-Nitrosodimethylamine	67%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
	Phenol	50%	
	4-Chloroaniline	20%	
	Hexachlorocyclopentadiene	67%	
	3-Nitroaniline	38%	
	2,4-Dinitrophenol	60%	
	4-Nitrophenol	57%	
	3,3'-Dichlorobenzidine	37%	

TABLE 6c
LCS Recovery for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Samples	Analytes With Recoveries Outside Acceptance Limits	LCS Recovery	Effects on Data Usability
LCS A112406LCS			
RP-24-30 (1046-01) RP-24-60 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02) RP-24-73 (1049-01)	N-Nitrosodimethylamine Phenol Benzoic Acid 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 2-Methyl-4,6-dinitrophenol 3,3'-Dichlorobenzidine	60% 47% 35% 33% 62% 47% 65% 53% 68% 41%	The recoveries were low and AMEC J qualified the detected results and UJ qualified the nondetected results for these analytes from the associated samples because of possible low bias in the analytical results. (**J**/**UJ-LL**)
LCS F112906LCS			
RP-06-30 (1050-01) RP-06-87 (1051-01) RP-06-95 (1052-01)	Benzoic Acid	0%	AMEC R qualified and rejected the nondetected benzoic acid results from the associated samples because the presence or absence of this analytical could not be definitively determined. (**R-BS**)
	Phenol 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 3,3'-Dichlorobenzidine	57% 43% 62% 68% 62% 48%	The recoveries were low and these analytes were not detected in associated samples. AMEC UJ qualified the nondetected results for these analytes in the associated samples because of possible low bias in the analytical results. (**UJ-LL**)
LCS B120206LCS			
RP-06-105 (1053-01)	Benzoic Acid	8%	AMEC R qualified and rejected the nondetected benzoic acid result from the associated sample because the presence or absence of this analytical could not be definitively determined. (**R-BS**)
	N-Nitrosodimethylamine Phenol Benzyl Alcohol 4-Chloroaniline 3-Nitroaniline 3,3'-Dichlorobenzidine	67% 63% 63% 18% 38% 30%	The recoveries were low and these analytes were not detected in associated sample. AMEC UJ qualified the nondetected results for these analytes in the associated sample because of possible low bias in the analytical results. (**UJ-LL**)
	N-nitrosodiphenylamine	133%	The recovery was high and this analyte was not detected in the associated samples. Data usability is not adversely affected.

Notes:
LCS = laboratory control sample

TABLE 6d
MS/MSD Recovery and Precision for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Spiked Sample	Analytes with recoveries outside acceptance limits	MS/MSD Recoveries	Effect on Data Usability
RP-24-85 (1018-01)	All analytes	0% / 0%	The matrix spike performed on this sample was analyzed at 80-fold dilution because of high analyte concentrations, therefore the spike was diluted below the calibration range. The recoveries could not be fully evaluated and AMEC did not qualify this sample. Data usability is not adversely affected.
RP-21-28 (1035-01)	Phenol	48% / 48%	AMEC J qualified the detected benzoic acid and UJ qualified the nondetected results for the other analytes in the spiked sample because of low bias induced by possible matrix interference. (**J/UJ-LM**)
	Benzoic Acid	53% / 42%	
	4-Chloroaniline	40% / 28%	
	Hexachlorocyclopentadiene	59% / 57%	
	3-Nitroaniline	46% / 41%	
	4-Nitrophenol	57% / 43%	
	3,3'-Dichlorobenzidine	42% / 41%	
RP-06-87 (1051-01)	Phenol	50% / 54%	AMEC J qualified the detected 1,2-Dichlorobenzene result and UJ qualified the nondetected results for the other analytes in the spiked sample because of possible low bias induced by matrix interference. (**J/UJ-LM**)
	1,2-Dichlorobenzene	0% / 36%	
	Benzoic Acid	30% / 32%	
	4-Chloroaniline	33% / 42%	
	Hexachlorocyclopentadiene	37% / 38%	
	3-Nitroaniline	53% / 56%	
	2,4-Dinitrophenol	24% / 28%	
	4-Nitrophenol	40% / 40%	
	2-Methyl-4,6-dinitrophenol	44% / 47%	
	Pentachlorophenol	51% / 51%	
	3,3'-Dichlorobenzidine	28% / 30%	
	Di-n-octylphthalate	43% / 46%	
	Benzo (b) fluoranthene	43% / 54%	
	Indeno(1,2,3-cd)pyrene	50% / 54%	
	Dibenz (a,h) anthracene	50% / 54%	

Notes:

MS/MSD = matrix spike/matrix spike duplicate

TABLE 6e
Surrogate Recoveries for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Sample ID	Surrogate Compound Outside Acceptance Limits	Recovery	Effects on Data Usability
RP-21-150 (1012-01)	1,2-Dichlorobenzene-d4 2-Fluorobiphenyl Terphenyl-d14	155% 171% 162%	The sample was analyzed at a 100-fold dilution because of high analyte concentrations. Surrogate recovery cannot be fully evaluated and AMEC did not qualify the associated data.
RP-24-85 (1018-01)	2-Fluorophenol 2,4,6-Tribromophenol	44% 55%	The sample was analyzed at a 40-fold dilution because of high analyte concentrations. Surrogate recovery cannot be fully evaluated and AMEC did not qualify the associated data.
RP-22-29 (1024-01)	Phenol-d_5 2-Fluorophenol	30% 49%	The recoveries were low and the phenol results were reported as not detected. AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
RP-22-75 (1025-01)	Phenol-d_5 2-Fluorophenol	32% 48%	
RP-22-151 (1026-01)	Phenol-d_5 2-Fluorophenol	33% 52%	
RP-23-30 (1027-01)	Phenol-d_5 2-Fluorophenol	32% 50%	AMEC J qualified the detected phenols results and UJ qualified the nondetected phenols results because of possible low bias in the analytical results. (**J/UJ-LS**)
RP-23-85 (1028-01)	Phenol-d_5 2-Fluorophenol	33% 51%	AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
RP-23-100 (1029-01)	2-Fluorophenol Phenol-d_5	54% 35%	AMEC J qualified the detected phenols results and UJ qualified the nondetected phenols results because of possible low bias in the analytical results. (**J/UJ-LS**)
RP-23-125 (1030-01)	2-Fluorophenol Phenol-d_5	53% 35%	The recoveries were low and the phenol results were reported as not detected. AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
RP-20-97 (1031-01)	2-Fluorophenol Phenol-d_5	50% 33%	
RP-20-25 (1032-01)	2-Fluorophenol Phenol-d_5	50% 34%	
RP-20-110 (1033-01)	2-Fluorophenol Phenol-d_5	47% 34%	
RP-21-125 (1034-01)	2-Fluorophenol Phenol-d_5	54% 40%	
RP-21-28 (1035-01)	2-Fluorophenol Phenol-d_5	52% 36%	
RP-21-150 (1036-01)	2-Fluorophenol Phenol-d_5	58% 41%	
RP-21-150 (1036-02)	2-Fluorophenol Phenol-d_5	56% 38%	

TABLE 6e
Surrogate Recoveries for Semivolatile Organic Compounds
Stage 2 Source Control Evaluation
RP - Portland Site

Sample ID	Surrogate Compound Outside Acceptance Limits	Recovery	Effects on Data Usability
MW-03-S (1037-01)	2-Fluorophenol Phenol-d_5	55% 38%	The recoveries were low and the phenol results were reported as not detected. AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
MW-03-81 (1041-01)	2-Fluorophenol Phenol-d_5	55% 38%	
MW-03-I (1042-01)	2-Fluorophenol Phenol-d_5	50% 36%	
MW-03-137 (1043-01)	2-Fluorophenol Phenol-d_5	57% 36%	The recoveries were low and the phenol results were reported as not detected. AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
MW-03-141 (1044-01)	2-Fluorophenol Phenol-d_5	54% 36%	
RP-24-30 (1046-01)	2-Fluorophenol Phenol-d_5	57% 39%	AMEC J qualified the detected phenols results and UJ qualified the nondetected phenols results because of possible low bias in the analytical results. (**J/UJ-LS**)
RP-24-60 (1047-01)	2-Fluorophenol Phenol-d_5	55% 38%	The recoveries were low and the phenol results were reported as not detected. AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
RP-24-85 (1048-01)	2-Fluorophenol Phenol-d_5	57% 38%	
RP-24-85 (1048-02)	2-Fluorophenol Phenol-d_5	55% 37%	
RP-24-73 (1049-01)	2-Fluorophenol Phenol-d_5	55% 37%	
RP-06-30 (1050-01)	2-Fluorophenol Phenol-d_5	55% 39%	The recoveries were low and the phenol results were reported as not detected. AMEC UJ qualified the nondetected phenol results because of possible low bias in the analytical results. (**UJ-LS**)
RP-06-87 (1051-01)	2-Fluorophenol Phenol-d_5	54% 36%	

Notes:
ID = identification

TABLE 7
Data Qualifiers for Organochlorine Insecticides by EPA Method 8081A
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-97	RP-21-150	RP-24-85	RP-22-29	RP-22-75	RP-22-151	RP-23-30	RP-23-85	RP-23-100	RP-23-125	RP-20-97	RP-20-25
	1003-01	1012-01	1018-01	1024-01	1025-01	1026-01	1027-01	1028-01	1029-01	1030-01	1031-01	1032-01
4,4'-DDD	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
4,4'-DDE	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
4,4'-DDT	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Aldrin	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
alpha-BHC	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
alpha-Chlordane	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
beta-BHC	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Chlordane	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
delta-BHC	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Dieldrin	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Endosulfan I	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Endosulfan II	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Endosulfan sulfate	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Endrin	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Endrin aldehyde	**UJ LL**	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Endrin Ketone	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
gamma-BHC (Lindane)	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
gamma-Chlordane	(none)	(none)	**R MI**	**N SC**	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Heptachlor	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Heptachlor epoxide	(none)	**N SC**	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Methoxychlor	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**
Toxaphene	(none)	(none)	**R MI**	(none)	(none)	(none)	**UJ LS**	**UJ LS**	**UJ LS**	(none)	(none)	**UJ LS**

TABLE 7
Data Qualifiers for Organochlorine Insecticides by EPA Method 8081A
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-20-110	RP-21-125	RP-21-28	RP-21-150	RP-21-150	MW-03-S	MW-03-81	MW-03-I	MW-03-137	MW-03-141	RP-24-30	RP-24-60
	1033-01	1034-01	1035-01	1036-01	1036-02	1037-01	1041-01	1042-01	1043-01	1044-01	1046-01	1047-01
4,4'-DDD	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
4,4'-DDE	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
4,4'-DDT	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Aldrin	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
alpha-BHC	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
alpha-Chlordane	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
beta-BHC	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Chlordane	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
delta-BHC	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Dieldrin	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Endosulfan I	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Endosulfan II	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Endosulfan sulfate	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Endrin	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Endrin aldehyde	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Endrin Ketone	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
gamma-BHC (Lindane)	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
gamma-Chlordane	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Heptachlor	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Heptachlor epoxide	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Methoxychlor	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**
Toxaphene	(none)	**UJ LS**	(none)	(none)	(none)	**UJ LS**	(none)	(none)	(none)	(none)	**UJ LS**	**UJ LS**

TABLE 7
Data Qualifiers for Organochlorine Insecticides by EPA Method 8081A
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte name	RP-24-85	RP-24-85	RP-24-73	RP-06-30	RP-06-87	RP-06-95	RP-06-105
	1048-01	1048-02	1049-01	1050-01	1051-01	1052-01	1053-01
4,4'-DDD	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
4,4'-DDE	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
4,4'-DDT	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Aldrin	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
alpha-BHC	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
alpha-Chlordane	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
beta-BHC	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Chlordane	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
delta-BHC	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Dieldrin	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Endosulfan I	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Endosulfan II	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Endosulfan sulfate	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Endrin	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Endrin aldehyde	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Endrin Ketone	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
gamma-BHC (Lindane)	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
gamma-Chlordane	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Heptachlor	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Heptachlor epoxide	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Methoxychlor	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)
Toxaphene	(none)	(none)	(none)	(none)	(none)	**UJ LS**	(none)

Notes:
CH = High CCV recovery. Analytical result may be biased high.
EPA = U.S. Environmental Protection Agency
HT = Holding time exceedance
LL = Low LCS recovery
LM = Low MS/MSD recovery
LS = Low surrogate recovery. Analytical result may be biased low.
SC = Difference between dual-column results > 40%.

TABLE 8
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Name	Dissolved (D)/Total (T)	MW-03-141 (1000-01)	MW-03-136 (1001-01)	RP-20-110 (1002-01)	RP-20-97 1003-01	RP-20-25 (1004-01)	RP-22-151 (1005-01)	RP-22-75 (1006-01)	RP-22-29 (1007-01)	RP-22-29 (1007-02)	RP-23-125 (1008-01)	RP-23-100 (1009-01)
Aluminum	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Arsenic	T	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Cadmium	T	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	(none)	**UJ MI**	(none)
Calcium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Chromium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Copper	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iron	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Lead	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Nickel	T	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Potassium	T	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL**	(none)
Sodium	T	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Zinc	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)
Mercury	T	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)

TABLE 8
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Name	Dissolved (D)/Total (T)	RP-23-85 (1010-01)	RP-23-30 (1011-01)	RP-21-150 1012-01	RP-21-150 (1013-01)	RP-21-125 (1014-01)	RP-21-28 (1015-01)	RP-06-85 (1016-01)	RP-06-95 (1017-01)	RP-24-85 1018-01	RP-24-85 (1019-01)	RP-24-85 (1020-01)
Aluminum	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**
Arsenic	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LM**
Cadmium	T	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	**J DL, LM**
Calcium	T	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	**J MI**
Chromium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**
Copper	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J LM, MI**
Iron	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**
Lead	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	T	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)
Manganese	T	(none)	(none)	(none)	(none)	(none)	**J HD**	(none)	(none)	(none)	(none)	**J MI**
Nickel	T	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)
Potassium	T	(none)	(none)	(none)	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)
Sodium	T	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	**J DL**
Vanadium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J MI**
Zinc	T	(none)	(none)	(none)	(none)	(none)	**J MI**	(none)	(none)	(none)	(none)	**J LM, MI**
Mercury	T	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)

TABLE 8
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Name	Dissolved (D)/Total (T)	RP-24-73 (1021-01)	RP-24-60 (1022-01)	RP-24-30 (1023-01)
Aluminum	T	**J MI**	(none)	(none)
Arsenic	T	(none)	(none)	(none)
Cadmium	T	**J DL**	**J DL**	(none)
Calcium	T	**J MI**	(none)	(none)
Chromium	T	**J MI**	(none)	(none)
Copper	T	**J MI**	(none)	(none)
Iron	T	**J MI**	(none)	(none)
Lead	T	(none)	(none)	(none)
Magnesium	T	(none)	(none)	(none)
Manganese	T	**J MI**	(none)	(none)
Nickel	T	(none)	(none)	(none)
Potassium	T	(none)	(none)	(none)
Sodium	T	(none)	(none)	(none)
Vanadium	T	(none)	(none)	(none)
Zinc	T	**J MI**	(none)	(none)
Mercury	T	(none)	(none)	(none)

TABLE 8
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Name	Dissolved/ Total	RP-22-29 1024-01	RP-22-75 1025-01	RP-22-151 1026-01	RP-23-30 1027-01	RP-23-85 1028-01	RP-23-100 1029-01	RP-23-125 1030-01	RP-20-97 1031-01	RP-20-25 1032-01	RP-20-110 1033-01	RP-21-125 1034-01
Aluminum	D	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Arsenic	D	(none)	(none)	(none)	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)
Cadmium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Copper	D	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iron	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Lead	D	**J DL**	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)
Magnesium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	D	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**
Potassium	D	**J MB**	**J DL, MB**	**J DL, MB**	**J MB**	**J MB**	**J MB**	(none)	(none)	(none)	(none)	(none)
Sodium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	D	**J DL**	(none)	(none)	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)	(none)
Zinc	D	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
Mercury	D	(none)	(none)	(none)	**U MB**	(none)	(none)	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**
Aluminum	T	(none)	**J DL**	**J DL**	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)
Arsenic	T	**J MI**	**J DL**	(none)	**J DL**	(none)	**J DL**	(none)	(none)	**J DL**	(none)	(none)
Cadmium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Copper	T	**J DL**	**J DL**	(none)	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)
Iron	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Lead	T	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)
Magnesium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	T	(none)	(none)	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	**J DL**
Potassium	T	**J MB, MI**	**J DL, MB**	**J DL, MB**	**J MB**	**J MB**	**J MB**	(none)	(none)	(none)	(none)	(none)
Sodium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	T	**J DL**	(none)	**J DL**	**J DL**	(none)	(none)	**J DL**	**J DL**	**J DL**	(none)	**J DL**
Zinc	T	(none)	(none)	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
Mercury	T	(none)	**U MB**	(none)	(none)	**U MB**	(none)	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**

TABLE 8
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Name	Dissolved/ Total	RP-21-28 1035-01	RP-21-150 1036-01	RP-21-150 1036-02	MW-03-S 1037-01	MW-03-81 1041-01	MW-03-I 1042-01	MW-03-137 1043-01	MW-03-141 1044-01	RP-24-30 1046-01	RP-24-60 1047-01	RP-24-85 1048-01
Aluminum	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Arsenic	D	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Cadmium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Copper	D	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Iron	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Lead	D	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**
Potassium	D	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)
Sodium	D	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	D	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**
Zinc	D	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
Mercury	D	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	(none)	(none)	(none)
Aluminum	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	(none)
Arsenic	T	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	(none)	(none)	(none)	(none)
Cadmium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Copper	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**
Iron	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Lead	T	**J DL**	(none)	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	T	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	**J DL**	**J DL**
Potassium	T	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	(none)	(none)	(none)
Sodium	T	**J DL**	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	T	(none)	**J DL**	**J DL**	(none)	(none)	(none)	(none)	**J DL**	(none)	**J DL**	**J DL**
Zinc	T	**U MB**	**U MB**	**U MB**	(none)	**U MB**	**U MB**	**U MB**	**U MB**	(none)	(none)	**U MB**
Mercury	T	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**UJ MB**	**J DL**	(none)	(none)

TABLE 8
Data Qualifiers for Metals by EPA 6000/7000 Series Methods
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Name	Dissolved/ Total	RP-24-85 1048-02	RP-24-73 1049-01	RP-06-30 1050-01	RP-06-87 1051-01	RP-06-95 1052-01	RP-06-105 1053-01
Aluminum	D	(none)	(none)	(none)	(none)	(none)	(none)
Arsenic	D	(none)	(none)	(none)	**J DL**	**J DL**	(none)
Cadmium	D	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	D	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	D	(none)	(none)	(none)	(none)	(none)	(none)
Copper	D	(none)	(none)	**J DL**	(none)	(none)	(none)
Iron	D	(none)	(none)	(none)	**J MI**	(none)	**J DL**
Lead	D	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	D	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	D	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	D	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**
Potassium	D	(none)	(none)	**J DL**	(none)	(none)	(none)
Sodium	D	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	D	**J DL**	**J DL**	(none)	**J DL**	(none)	**J DL**
Zinc	D	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
Mercury	D	(none)	(none)	(none)	(none)	(none)	(none)
Aluminum	T	(none)	(none)	**J DL**	(none)	(none)	(none)
Arsenic	T	(none)	(none)	(none)	**J DL**	**J DL**	(none)
Cadmium	T	(none)	(none)	(none)	(none)	(none)	(none)
Calcium	T	(none)	(none)	(none)	(none)	(none)	(none)
Chromium	T	(none)	(none)	(none)	(none)	(none)	(none)
Copper	T	**J DL**	(none)	(none)	(none)	(none)	(none)
Iron	T	(none)	(none)	(none)	(none)	(none)	**J DL**
Lead	T	(none)	(none)	(none)	(none)	(none)	(none)
Magnesium	T	(none)	(none)	(none)	(none)	(none)	(none)
Manganese	T	(none)	(none)	(none)	(none)	(none)	(none)
Nickel	T	**J DL**	**J DL**	(none)	**J DL**	**J DL**	**J DL**
Potassium	T	(none)	(none)	**J DL**	(none)	(none)	(none)
Sodium	T	(none)	(none)	(none)	(none)	(none)	(none)
Vanadium	T	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**	**J DL**
Zinc	T	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**	**U MB**
Mercury	T	(none)	(none)	(none)	(none)	(none)	(none)

Notes:
DL = Value between MDL and RL
LM = Low MS/MSD recovery
MB = Method blank contamination
MI = Matrix interference

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
MB PBS101806A	Chromium	0.205 mg/Kg	MW-03-141 (1000-01)	3.8	Chromium concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			MW-03-137 (1001-01)	14.1	
			RP-20-110 (1002-01)	8.9	
			RP-20-97 (1003-01)	18.7	
			RP-20-25 (1004-01)	19.4	
			RP-22-151 (1005-01)	14.6	
			RP-22-75 (1006-01)	23.8	
			RP-22-29 (1007-01)	18.2	
			RP-22-29 (1007-02)	15	
MB PBS101806A	Copper	0.352 mg/Kg	MW-03-141 (1000-01)	10.6	Copper concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			MW-03-137 (1001-01)	16.5	
			RP-20-110 (1002-01)	10.2	
			RP-20-97 (1003-01)	19.6	
			RP-20-25 (1004-01)	20.5	
			RP-22-151 (1005-01)	14.7	
			RP-22-75 (1006-01)	23	
			RP-22-29 (1007-01)	20.8	
			RP-22-29 (1007-02)	16.5	
MB PBS101806A	Iron	5.457 mg/Kg	MW-03-141 (1000-01)	28,700	Iron concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			MW-03-137 (1001-01)	33,400	
			RP-20-110 (1002-01)	25,000	
			RP-20-97 (1003-01)	33,200	
			RP-20-25 (1004-01)	23,700	
			RP-22-151 (1005-01)	132,000	
			RP-22-75 (1006-01)	35,700	
			RP-22-29 (1007-01)	28,700	
			RP-22-29 (1007-02)	27,400	

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
MB PBS101806A	Potassium	-38.130 mg/Kg	MW-03-141 (1000-01)	318	Potassium concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			MW-03-137 (1001-01)	630	
			RP-20-110 (1002-01)	313	
			RP-20-97 (1003-01)	809	
			RP-20-25 (1004-01)	644	
			RP-22-151 (1005-01)	377	
			RP-22-75 (1006-01)	646	
			RP-22-29 (1007-01)	604	
			RP-22-29 (1007-02)	570	
MB PBS101806A	Zinc	0.745 mg/Kg	MW-03-141 (1000-01)	46.3	Zinc concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			MW-03-137 (1001-01)	45.4	
			RP-20-110 (1002-01)	33.9	
			RP-20-97 (1003-01)	29.3	
			RP-20-25 (1004-01)	63.8	
			RP-22-151 (1005-01)	146	
			RP-22-75 (1006-01)	54.4	
			RP-22-29 (1007-01)	64.7	
			RP-22-29 (1007-02)	49.2	
MB PBS101806A	Cadmium	-0.046 mg/Kg	MW-03-141 (1000-01)	ND	AMEC UJ qualified the nondetected cadmium results from the associated samples because of possible low bias induced by the instrument suppression. (**UJ-MB**)
			MW-03-137 (1001-01)	ND	
			RP-20-110 (1002-01)	ND	
			RP-20-97 (1003-01)	ND	
			RP-20-25 (1004-01)	ND	
			RP-22-151 (1005-01)	ND	
			RP-22-75 (1006-01)	ND	
			RP-22-29 (1007-01)	ND	
			RP-22-29 (1007-02)	ND	

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
MB PBS102406B	Chromium	0.197 mg/Kg	RP-23-125 (1008-01)	25.5	Chromium, copper and zinc concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			RP-23-100 (1009-01)	6.6	
			RP-23-85 (1010-01)	13.5	
			RP-23-30 (1011-01)	18.6	
	Copper	0.324 mg/Kg	RP-23-125 (1008-01)	27	
			RP-23-100 (1009-01)	15.4	
			RP-23-85 (1010-01)	21.9	
			RP-23-30 (1011-01)	21.1	
	Zinc	0.847 mg/Kg	RP-23-125 (1008-01)	132	
			RP-23-100 (1009-01)	34.5	
			RP-23-85 (1010-01)	58.1	
			RP-23-30 (1011-01)	71	
MB PBS103006C	Copper	0.279 mg/Kg	RP-21-150 (1012-01)	23.7	Copper, iron, and zinc concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			RP-21-150 (1013-01)	8.2	
			RP-21-125 (1014-01)	14.2	
			RP-21-28 (1015-01)	15.9	
	Iron	4.699 mg/Kg	RP-21-150 (1012-01)	34,000	
			RP-21-150 (1013-01)	51,500	
			RP-21-125 (1014-01)	24,100	
			RP-21-28 (1015-01)	26,400	
	Zinc	0.796 mg/Kg	RP-21-150 (1012-01)	80.3	
			RP-21-150 (1013-01)	43.5	
			RP-21-125 (1014-01)	45.5	
			RP-21-28 (1015-01)	48.8	

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
MB PBS111006C	Chromium	0.079 mg/Kg	RP-06-105 (1016-01)	25.4	Chromium, potassium, and zinc concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			RP-06-95 (1017-01)	11	
			RP-24-85 (1018-01)	8.8	
			RP-24-85 (1019-01)	9.3	
			RP-24-85 (1020-01)	28	
	Potassium	-29.590 mg/Kg	RP-06-105 (1016-01)	875	
			RP-06-95 (1017-01)	729	
			RP-24-85 (1018-01)	474	
			RP-24-85 (1019-01)	1,100	
			RP-24-85 (1020-01)	726	
	Zinc	0.814 mg/Kg	RP-06-105 (1016-01)	272	
			RP-06-95 (1017-01)	35.5	
			RP-24-85 (1018-01)	61.9	
			RP-24-85 (1019-01)	40.6	
			RP-24-85 (1020-01)	79.6	
MB PBW111706A	Iron	78.48 µg/L	RP-22-29 (1024-01)	195,000 / 191,000	Total and dissolved iron concentration in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			RP-22-75 (1025-01)	45,600 / 45,100	
			RP-22-151 (1026-01)	1,100 / 1,160	
			RP-23-30 (1027-01)	168,000 / 160,000	
			RP-23-85 (1028-01)	20,800 / 20,300	
			RP-23-100 (1029-01)	28,400 / 27,900	
	Manganese	1.401 µg/L	RP-22-29 (1024-01)	6,280 / 6,200	Total and dissolved manganese concentration in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
			RP-22-75 (1025-01)	2,090 / 2,070	
			RP-22-151 (1026-01)	1,270 / 1,260	
			RP-23-30 (1027-01)	11,900 / 11,500	
			RP-23-85 (1028-01)	10,000 / 9,940	
			RP-23-100 (1029-01)	8,940 / 8,870	

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
	Potassium	-755.4 µg/L	RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01)	3,200 / 3,230 4,850 / 4,840 6,230 / 5,930 5,380 / 5,240	AMEC J qualified the detected total and dissolved potassium results from the associated samples because of possible low bias induced by the instrument suppression. (**J-MB**)
			RP-22-29 (1024-01) RP-23-100 (1029-01)	8,490 / 8,360 11,900 / 11,900	Total and dissolved potassium concentrations in the associated samples were more than 10 times the concentration detected in the blank; data usability is not adversely affected.
	Zinc	4.584 µg/L	RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01)	ND / 1.9 42.8 / 8.7 7.0 / 8.5 8.9 / ND 6.1 / 6.1 6.4 / 5.4	AMEC U qualified the total and dissolved zinc results from sample RP-22-151 (1026-01), RP-23-85 (1028-01) and RP-23-100 (1029-01), the dissolved zinc results from samples RP-22-29 (1024-01) and RP-22-75 (1025-01) and total zinc result from sample RP-23-30 (1027-01) because the concentrations detected in the samples were less than 5 times the concentration detected in the blank. (**U-MB**)
MB PBW111506B	Mercury	0.072 µg/L	RP-22-29 (1024-01) RP-22-75 (1025-01) RP-22-151 (1026-01) RP-23-30 (1027-01) RP-23-85 (1028-01) RP-23-100 (1029-01)	ND / ND 0.061 / ND ND / ND ND / 0.11 0.069 / ND ND / ND	AMEC U qualified the total mercury results from samples RP-22-75 (1025-01) and RP-23-85 (1028-01) and the dissolved mercury result from sample RP-23-30 (1027-01) because the concentrations in the associated samples were less than 5 times the concentrations detected in the blank. (**U-MB**)
MB PBS112106C	Chromium	0.178 mg/Kg	RP-24-73 (1021-01) RP-24-60 (1022-01) RP-24-30 (1023-01)	6.8 8.4 19	Total chromium and zinc concentrations in the associated samples were more than five times the concentration detected in the blank; data usability is not adversely affected.
MB PBS112106C	Zinc	0.890 mg/Kg	RP-24-73 (1021-01) RP-24-60 (1022-01) RP-24-30 (1023-01)	32.6 39.5 164	

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
MB PBW112006A CCBs 112006	Mercury	-0.110 µg/L -0.2 µg/L	RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01) RP-20-110 (1033-01)	ND / ND ND / ND ND / ND ND / ND	AMEC UJ qualified the nondetected total and dissolved mercury results from the associated samples because of possible low bias induced by the instrument suppression. (**UJ-MB**)
MB PBW112106A	Mercury	-0.069 µg/L	RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01)	ND / ND ND / ND ND / ND ND / ND ND / ND ND / ND ND / ND	
MB PBW112106A	Zinc	3.802 µg/L	RP-23-125 (1030-01) RP-20-97 (1031-01) RP-20-25 (1032-01)	9.2 / 10.3 8.2 / 7.7 6.6 / 3.8	AMEC U qualified the total and dissolved zinc results from all of the associated samples, except for MW-03-S (1037-01), because the concentrations in the associated samples were less than five times the concentrations detected in the blank. (U-MB)
MB PBW112106B	Zinc	4.275 µg/L	RP-20-110 (1033-01) RP-21-125 (1034-01) RP-21-28 (1035-01) RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01) MW-03-81 (1041-01) MW-03-I (1042-01)	4.4 / 5.3 13.6 / 10.1 3.3 / 3.8 6.3 / 4.4 7.8 / 7.4 ND / ND 18.9 / 2.1 3.4 / 4.1	
MB PBW112406A	Mercury	-0.053 µg/L	ME-03-137 (1043-01) MW-03-141 (1044-01)	ND / ND ND / ND	AMEC UJ qualified the nondetected total and dissolved mercury results from associated samples because of possible low bias induced by the instrument suppression. (**UJ-MB**)

TABLE 8a
Laboratory Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Blank ID	Detected Analytes	Analyte Concentration in Blank (mg/Kg or µg/L)*	Affected Samples	Analyte Concentration in Samples T/ D **	Effects on Data Usability
MB PBW112906A	Zinc	4.336 µg/L	ME-03-137 (1043-01) MW-03-141 (1044-01) RP-24-31 (1046-01) RP-24-61 (1047-01) RP-24-85 (1048-01) RP-24-85 (1048-02) RP-24-73 (1049-01)	5.3 / 4.8 5.0 / 5.8 25.67 / 7.8 103 / 9.4 6.6 / 7.2 7.7 / 5.7 6.4 / 7.5	AMEC U qualified the total and dissolved zinc results from samples MW-03-136 (1043-01), MW-03-141 (1044-01), RP-24-85 (1048-01), RP-24-85 (1048-02) and RP-24-73 (1049-01) and the dissolved zinc results from samples RP-24-31 (1046-01) and RP-24-61 (1047-01) because the concentrations in the associated samples were less than 5 times the concentrations detected in the blank. (U-MB)
MB PBW120406A	Zinc	3.497 µg/L	RP-06-30 (1050-01) RP-06-87 (1051-01) RP-06-95 (1052-01) RP-06-105 (1053-01)	4.3 / 6.9 5.8 / 5.8 4.3 / 4.9 11.3 / 8.7	AMEC U qualified the total and dissolved zinc results from associated sample because the concentrations in the associated samples were less than five times the concentration detected in the blank. (**U-MB**)

Notes:
µg/Kg = micrograms per Kilogram
µg/L = micrograms per Liter
mg/Kg = milligrams per Kilogram
ND = not detected at or above the Instrument Detection Limit (IDL)
* = units for blank concentrations are the same for sample concentrations
** = T/D total or dissolved analyte

TABLE 8b
Rinsate Blank Detections for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Rinsate Blank ID	Detected Analytes	Analyte Concentration (µg/L)*	Affected Samples	Analyte Concentration in Sample T/D	Effects on Data Usability
1037-04	Total Calcium	296	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	55,000 / 53,700 55,600 / 53,700 97,800 / 92,200	Calcium, iron and manganese concentrations in the associated samples were more than five times the concentrations detected in the rinse blank; data usability is not adversely affected.
	Total Iron	26.5	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	2,160 / 270 2,050 / 284 81,500 / 76,300	
	Total Manganese	0.96	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	3,210 / 3,130 3,240 / 3,130 5,890 / 5,560	
	Total Zinc	9.5	RP-21-150 (1036-01) RP-21-150 (1036-02) MW-03-S (1037-01)	6.3 / 4.4 7.8 / 7.4 ND / ND	Zinc was detected in the associated method blank. Data from the associated samples were previously qualified because of the method blank detections and further qualification is not necessary.
1053-04	Total Calcium	61.2	RP-06-105 (1053-01)	342,000 / 341,000	Calcium concentrations in the associated sample were more than five times the concentration detected in the rinse blank; data usability is not adversely affected.
	Total Zinc	4.9		11.3 / 8.7	Zinc was detected in the associated method blank. Data from the associated sample was previously qualified because of the method blank detections and further qualification is not necessary.

Notes:

µg/L = micrograms per Liter

D = Dissolved

T = Total

* = units for blank concentrations are the same for sample concentrations

TABLE 8c
MS Recovery and Precision for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Spiked Sample	Analytes with Recoveries Outside Acceptance Limits	MS Recoveries	Effect on Data Usability
RP-22-29 (1007-01)	Aluminum Iron Lead Manganese	837% -909% 289% 73%	The background total aluminum, iron, lead, and manganese concentrations in the unspiked sample were more the four times the spike concentration; data usability is not adversely affected.
RP-21-28 (1015-01)	Aluminum Iron Lead Manganese	1458% 3286% 214% 145%	The background total aluminum, iron, lead, and manganese concentrations in the unspiked sample were more the four times the spike concentrations; data usability is not adversely affected.
RP-24-85 (1020-01)	Aluminum Iron Manganese	2883% -4925% -331%	The background total aluminum, iron, and manganese concentrations in the unspiked sample were more the four times the spike concentrations; data usability is not adversely affected.
	Arsenic Cadmium Copper Zinc	30% 75% 72% 62%	AMEC J qualified the detected arsenic, cadmium, copper, and zinc results from the spiked sample because of a possible low bias in the analytical results. (**J-LM**)
RP-21-28 (1035-01)	Dissolved Iron	63%	The background dissolved iron concentration in the unspiked sample was more the four times the spike concentration; data usability is not adversely affected.
RP-06-87 (1051-01)	Total Manganese Dissolved Manganese	146% -40%	The background total and dissolved manganese concentrations in the unspiked sample was more the four times the spike concentration; data usability is not adversely affected.

Notes:

MS = matrix spike

Table 8d
Serial Dilutions Precision for Metals
Stage 2 Source Control Evaluation
RP - Portland Site

Affected Sample	Affected analyte	% Difference	Effect on Data Usability
RP-23-125 (1008-01)	Aluminum Calcium Chromium Iron Manganese Vanadium Zinc	27% 32% 33% 22% 31% 30% 35%	AMEC J qualified the detected aluminum, calcium, chromium, iron, manganese, vanadium, and zinc results from the associated sample because of potential matrix interference. (**J-MI)**.
RP-21-28 (1015-01)	Zinc	14%	AMEC J qualified the detected zinc concentration from the associated sample because of high percent differences between dilutions induced by potential matrix interference. (**J-MI**)
RP-24-85 (1020-01)	Aluminum Calcium Chromium Copper Iron Manganese Vanadium Zinc	26% 26% 24% 24% 23% 24% 26% 31%	AMEC J qualified the detected results for the associated analyte concentrations from the associated sample because of high percent differences between dilutions induced by potential matrix interference. (**J-MI**)
RP-22-29 (1024-01)	Total Arsenic Total Potassium	91% 32%	AMEC J qualified the total arsenic and potassium results from the associated sample because of high percent difference between dilutions induced by potential matrix interference. (**J-MI**)
RP-24-73 (1021-01)	Aluminum Calcium Chromium Copper Iron Manganese Zinc	23% 14% 15% 12% 19% 16% 30%	AMEC J qualified the detected results for the associated analyte concentrations from the associated sample because of high percent differences between dilutions induced by potential matrix interference. (**J-MI**)
RP-21-28 (1035-01)	Total Zinc Dissolved Zinc	1005% 821%	The total and dissolved zinc concentrations in the associated sample were less than 50 times the MDL. Data usability is not adversely affected.
RP-24-85 (1048-01)	Total Iron Total Zinc	32% 664%	The total iron and zinc concentrations in the associated sample were less than 50 times the MDL. Data usability is not adversely affected.
RP-06-87 (1051-01)	Dissolved Iron	12%	AMEC J qualified the dissolved iron result from the associated sample because of high percent difference between dilutions induced by potential matrix interference. (**J-MI**)

TABLE 9
Summary of Data Validation Findings
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte Class	Qualified Analyte(s)	Affected Sample(s)		Qualifier	Reason	Table and/or Section Reference
		Sample ID	Blind ID			
VOCs	Isobutyl alcohol Chloroethane	RP-20-97 RP-21-15	(1003-01) (1012-01)	UJ	Unacceptable ICAL	Table 4a Section 6.1.2
VOCs	Bromomethane Chloroethane Acetone Iodomethane 2-Butanone 2-Hexanone 1,2,3-Trichloropropane 1,2-Dibromo-3-Chloropropane Naphthalene	RP-21-150 RP-24-85	(1012-01DL) (1018-01)	J/UJ	Unacceptable ICAL	Table 4a Section 6.1.2
VOCs	Isobutyl Alcohol	RP-24-85 RP-22-29 RP-22-75 RP-22-151 RP-23-30 RP-23-85 RP-23-100 RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I MW-03-137 MW-03-141 RP-24-30 RP-24-60 RP-24-85 RP-24-85 RP-24-73 RP-06-30 RP-06-87 RP-06-95 RP-06-105	(1018-01) (1024-01) (1025-01) (1026-01) (1027-01) (1028-01) (1029-01) (1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01) (1043-01) (1044-01) (1046-01) (1047-01) (1048-01) (1048-02) (1049-01) (1050-01) (1051-01) (1052-01) (1053-01)	UJ	Unacceptable ICAL	Table 4a Section 6.1.2
VOCs	Bromomethane	RP-22-29 RP-22-75 RP-22-151 RP-23-30 RP-23-85 RP-23-100 RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I	(1024-01) (1025-01) (1026-01) (1027-01) (1028-01) (1029-01) (1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01)	UJ	Unacceptable ICAL	Table 4a Section 6.1.2
VOCs	Iodomethane	MW-03-137 MW-03-141 RP-24-30 RP-24-60 RP-24-85 RP-24-85 RP-24-73	(1043-01) (1044-01) (1046-01) (1047-01) (1048-01) (1048-02) (1049-01)	UJ	Unacceptable ICAL	Table 4a Section 6.1.2
VOCs	Bromomethane Chloroethane	RP-06-30 RP-06-87 RP-06-95 RP-06-105	(1050-01) (1051-01) (1052-01) (1053-01)	UJ	Unacceptable ICAL	Table 4a Section 6.1.2
VOCs	Iodomethane	RP-21-150	(1012-01)	UJ	Low CCAL recovery	Table 4b Section 6.1.3
VOCs	Naphthalene	RP-20-97	(1031-01)	J	High CCAL recovery	Table 4b Section 6.1.3
	Acetone	RP-20-25 RP-24-30 RP-24-73	(1032-01) (1046-01) (1049-01)			
VOCs	Acetone 2-Butanone 2-Methyl-2-pentanone 2-Hexanone Naphthalene	RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I	(1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01)	J	High CCAL recovery	Table 4b Section 6.1.3
VOCs	1,2,3-Trichlorobenzene Acetone	RP-24-85	(1018-01)	U	Analyte was detected in the method blank	Table 4c Section 6.1.4
VOCs	Naphthalene	RP-22-75	(1025-01)	U	Analyte was detected in the method blank	Table 4c Section 6.1.4
VOCs	Acetone	RP-20-25	(1032-01)	U	Analyte was detected in the trip blank	Table 4d Section 6.1.4

TABLE 9
Summary of Data Validation Findings
Stage 2 Source Control Evaluation
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Analyte Class	Qualified Analyte(s)	Affected Sample(s)		Qualifier	Reason	Table and/or Section Reference
		Sample ID	Blind ID			
VOCs	m,p-Xylene	MW-03-S	(1037-01)	U	Analyte was detected in the rinsate blank	Table 4e Section 6.1.4
VOCs	Dichlorodifluoromethane Chloromethane	RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I	(1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01)	UJ	Low LCS recovery	Table 4f Section 6.1.5
VOCs	Dichlorodifluoromethane	RP-21-28	(1035-01)	UJ	Low MS/MSD recovery	Section 6.1.8
Herbicides	MCPA	RP-21-150 RP-21-150	(1036-01) (1036-02)	UJ	Low CCAL recovery	Table 5a Section 6.2.3
Herbicides	2,4,5 - TP (Silvex)	RP-23-125	(1030-01)	J	High CCAL recovery	Table 5a Section 6.2.3
Herbicides	Dalapon Dinoseb Bromoxynil	MW-03-81 MW-03-I MW-03-137 MW-03-141 RP-24-30 RP-24-60 RP-24-85 RP-24-85 RP-24-73 RP-06-30 RP-06-87 RP-06-95 RP-06-105	(1041-01) (1042-01) (1043-01) (1044-01) (1046-01) (1047-01) (1048-01) (1048-02) (1049-01) (1050-01) (1051-01) (1052-01) (1053-01)	UJ	Low LCS recovery	Table 5b Section 6.2.5
Herbicides	Dinoseb	RP-22-29 RP-22-75	(1024-01) (1025-01)	UJ	Low LCS recovery	Table 5b
Herbicides	Dalapon Dinoseb	RP-22-151 RP-23-30 RP-23-85 RP-23-100 RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S	(1026-01) (1027-01) (1028-01) (1029-01) (1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01)	UJ	Low LCS recovery	Table 5b Section 6.2.5
Herbicides	2,4,5 - TP (Silvex)	RP-22-151 RP-23-100	(1026-01) (1029-01)	J	High LCS recovery	Table 5b Section 6.2.5
Herbicides	Dalapon Dinoseb	RP-24-85	(1018-01)	UJ	Low MS/MSD recovery	Table 5d Section 6.2.7
Herbicides	Dalapon 2,4,5 - TP (Silvex) Dinoseb	RP-21-28	(1035-01)	J/UJ	Low MS/MSD recovery	Table 5d Section 6.2.7
Herbicides	All All All	RP-20-97 RP-21-150 RP-24-85	(1003-01) (1012-01) (1018-01)	R R R	Hydrocarbon Interference	Section 6.2.8
SVOCs	Hexachloroethane N-Nitroso-di-n-propylamine 4-Methylphenol Fluorene Diethylphthalate Benzo (k) fluoranthene	RP-20-97 RP-24-85 RP-22-29 RP-22-75 RP-22-151 RP-23-30 RP-23-85 RP-23-100	(1003-01) (1018-01) (1024-01) (1025-01) (1026-01) (1027-01) (1028-01) (1029-01)	J/UJ	Unacceptable ICAL	Table 6a Section 6.3.2

TABLE 9
Summary of Data Validation Findings
Stage 2 Source Control Evaluation
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Analyte Class	Qualified Analyte(s)	Affected Sample(s)		Qualifier	Reason	Table and/or Section Reference
		Sample ID	Blind ID			
SVOCs	Benzoic Acid Di-n-octylphthalate	RP-21-150 RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I MW-03-137 MW-03-141 RP-24-30 RP-24-60 RP-24-85 RP-24-85 RP-24-73 RP-06-30 RP-06-87 RP-06-95	(1012-01) (1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01) (1043-01) (1044-01) (1046-01) (1047-01) (1048-01) (1048-02) (1049-01) (1050-01) (1051-01) (1052-01)	UJ	Unacceptable ICAL	Table 6a Section 6.3.2
SVOCs	Hexachlorocyclopentadiene Benzo (k) fluoranthene	RP-06-105	(1053-01)	UJ	Unacceptable ICAL	Table 6a Section 6.3.2
SVOCs	Benzoic Acid 2,4-Dinitrophenol 4-Nitrophenol	RP-20-97	(1003-01)	UJ	Low CCAL recovery	Table 6b Section 6.3.3
SVOCs	Benzo(k)fluoranthene			J	High CCAL recovery	Table 6b Section 6.3.3
SVOCs	N-Nitrosodimethylamine Dimethylphthalate Benzo (k) fluoranthene	RP-24-85	(1018-01)	UJ	Low CCAL recovery	Table 6b Section 6.3.3
SVOCs	Benzoic Acid 2-Nitroaniline Dimethylphthalate 2,4-Dinitrophenol	RP-22-29 RP-22-75 RP-22-151 RP-23-30 RP-23-85 RP-23-100	(1024-01) (1025-01) (1026-01) (1027-01) (1028-01) (1029-01)	J/UJ	Low CCAL recovery	Table 6b Section 6.3.3
SVOCs	Benzo(k)fluoranthene	RP-23-30	(1027-01)	J	High CCAL recovery	Table 6b Section 6.3.3
SVOCs	2,4-Dinitrophenol	RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 MW-03-81 MW-03-I	(1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1041-01) (1042-01)	UJ	Low CCAL recovery	Table 6b Section 6.3.3
SVOCs	2,4-Dinitrophenol Indeno (1,2,3-cd) pyrene Benzo (g,h,i) perylene	RP-21-150 RP-21-150 MW-03-S MW-03-141 RP-24-73	(1036-01) (1036-02) (1037-01) (1044-01) (1049-01)	UJ	Low CCAL recovery	Table 6b Section 6.3.3
SVOCs	1,2-Dichlorobenzene Isophorone Benzoic Acid 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4,6-Dinitro-2-methylphenol Hexachlorobenzene Pentachlorophenol 3,3'-Dichlorobenzidine	RP-20-97	(1003-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	N-Nitrosodimethylamine Benzoic Acid 4-Chloroaniline 3-Nitroaniline 2,4-Dinitrophenol Pentachlorophenol 3,3'-Dichlorobenzidine	RP-21-150 RP-24-85	(1012-01) (1018-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-22-29 RP-22-75	(1024-01) (1025-01)	R	No LCS recovery	Table 6c Section 6.3.5
SVOCs	N-Nitrosodimethylamine Phenol 4-Chloroaniline 3-Nitroaniline	RP-22-29 RP-22-75	(1024-01) (1025-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
	2,4-Dinitrophenol 4-Nitrophenol 3,3'-Dichlorobenzidine					
SVOCs	Benzoic Acid	RP-22-151 RP-23-30	(1026-01) (1027-01)	R	No LCS recovery	Table 6c Section 6.3.5
	N-Nitrosodimethylamine Phenol 4-Chloroaniline 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 3,3'-Dichlorobenzidine	RP-23-85 RP-23-100	(1028-01) (1029-01)	UJ	Low LCS recovery	Table 6e Section 6.3.5

TABLE 9
Summary of Data Validation Findings
Stage 2 Source Control Evaluation
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Analyte Class	Qualified Analyte(s)	Affected Sample(s)		Qualifier	Reason	Table and/or Section Reference
		Sample ID	Blind ID			
SVOCs	Fluoranthene benzo(g,h,i)perylene	RP-23-30	(1027-01)	J	High LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-23-125 RP-20-97	(1030-01) (1031-01)	R	Very low LCS recovery	Table 6c Section 6.3.5
		RP-20-25	(1032-01)	J		
SVOCs	Phenol 4-Chloroaniline 3-Nitroaniline 4-Nitrophenol 3,3'-Dichlorobenzidine	RP-23-125 RP-20-97 RP-20-25	(1030-01) (1031-01) (1032-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-20-110	(1033-01)	J	No LCS recovery	Table 6c Section 6.3.5
	N-Nitrosodimethylamine Phenol 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 2-methyl-4,6-dinitrophenol 3,3'-Dichlorobenzidine			UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-21-125 RP-21-28 MW-03-I	(1034-01) (1035-01) (1042-01)	J	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-21-150 RP-21-150 MW-03-S MW-03-81	(1036-01) (1036-02) (1037-01) (1041-01)	R	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	N-Nitrosodimethylamine Phenol 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 3,3'-Dichlorobenzidine	RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I	(1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	MW-03-137 MW-03-141	(1043-01) (1044-01)	R	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	N-Nitrosodimethylamine Phenol 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 3,3'-Dichlorobenzidine	MW-03-137 MW-03-141	(1043-01) (1044-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	N-Nitrosodimethylamine Phenol Benzoic Acid 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 2-Methyl-4,6-dinitrophenol 3,3'-Dichlorobenzidine	RP-24-30 RP-24-60 RP-24-85 RP-24-85 RP-24-73	(1046-01) (1047-01) (1048-01) (1048-02) (1049-01)	J/UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-06-30 RP-06-87 RP-06-95	(1050-01) (1051-01) (1052-01)	R	No LCS recovery	Table 6c Section 6.3.5
SVOCs	Phenol 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 3,3'-Dichlorobenzidine	RP-06-30 RP-06-87 RP-06-95	(1050-01) (1051-01) (1052-01)	UJ	Lo LCS recovery	Table 6c Section 6.3.5
SVOCs	Benzoic Acid	RP-06-105	(1053-01)	R	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	N-Nitrosodimethylamine Phenol Benzyl Alcohol 4-Chloroaniline 3-Nitroaniline 3,3'-Dichlorobenzidine	RP-06-105	(1053-01)	UJ	Low LCS recovery	Table 6c Section 6.3.5
SVOCs	Phenol Benzoic Acid 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 4-Nitrophenol 3,3'-Dichlorobenzidine	RP-21-28	(1035-01)	J/UJ	Low MS/MSD recoveries	Table 6d Section 6.3.6

TABLE 9
Summary of Data Validation Findings
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Analyte Class	Qualified Analyte(s)	Affected Sample(s)		Qualifier	Reason	Table and/or Section Reference
		Sample ID	Blind ID			
SVOCs	Phenol 1,2-Dichlorobenzene Benzoic Acid 4-Chloroaniline Hexachlorocyclopentadiene 3-Nitroaniline 2,4-Dinitrophenol 4-Nitrophenol 2-Methyl-4,6-dinitrophenol Pentachlorophenol 3,3'-Dichlorobenzidine Di-n-octylphthalate Benzo (b) fluoranthene Indeno(1,2,3-cd)pyrene Dibenz (a,h) anthracene	RP-06-87	(1051-01)	J/UJ	Low MS/MSD recoveries	Table 6d Section 6.3.6
SVOCs	All Phenols (acid extractables)	RP-22-29 RP-22-75 RP-22-151 RP-23-30 RP-23-85 RP-23-100 RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I MW-03-137 MW-03-141 RP-24-30 RP-24-60 RP-24-85 RP-24-85 RP-24-73 RP-06-30 RP-06-87	(1024-01) (1025-01) (1026-01) (1027-01) (1028-01) (1029-01) (1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01) (1043-01) (1044-01) (1046-01) (1047-01) (1048-01) (1048-02) (1049-01) (1050-01) (1051-01)	J/UJ	Low surrogate recoveries	Table 6e Section 6.3.8
OCPs	Endrin aldehyde	RP-20-97	(1003-01)	UJ	Low LCS recovery	Table 7.2 Section 6.4.6
OCPs	All analytes	RP-23-30 RP-23-85 RP-23-100 RP-20-25 RP-21-125 MW-03-S RP-24-30 RP-24-60 RP-06-95	(1027-01) (1028-01) (1029-01) (1032-01) (1034-01) (1037-01) (1046-01) (1047-01) (1052-01)	UJ	Low surrogate recovery	Table 7.3 Section 6.4.7
OCPs	Heptachlor epoxide	RP-21-150	(1012-01)	N	Second column confirmation results >40%D	Table 7.5 Section 6.4.9
OCP	All	RP-24-85	(1018-10)	R	Hydrocarbon Interference	Section 6.4.9
OCP	gamma-Chlordane	RP-22-29	(1024-01)	N	Second column confirmation results >40%D	Table 7.5 Section 6.4.9
Metals	Cadmium	MW-03-141 MW-03-137 RP-20-110 RP-20-97 RP-20-25 RP-22-151 RP-22-75 RP-22-29 RP-22-29	(1000-01) (1001-01) (1002-01) (1003-01) (1004-01) (1005-01) (1006-01) (1007-01) (1007-02)	UJ	Analyte detected in associated method blank at a negative concentration	Table 8a Section 6.5.6
Metals	Potassium	RP-22-29 RP-22-75 RP-22-151 RP-23-30 RP-23-85 RP-23-100	(1024-01) (1025-01) (1026-01) (1027-01) (1028-01) (1029-01)	J	Analyte detected in associated method blank at a negative concentration	Table 8a Section 6.5.6
Metals	Total and Dissolved Zinc	RP-22-151 RP-23-85 RP-23-100	(1026-01) (1028-01) (1029-01)	U	Analyte was detected in associated method CCB blank	Table 8a Section 6.5.6
	Dissolved Zinc	RP-22-29 RP-22-75	(1024-01) (1025-01)			
	Total Zinc	RP-23-30	(1027-01)			
Metals	Total Mercury	RP-22-75 RP-23-85	(1025-01) (1028-01)	U	Analyte detected in associated method blank	Table 8a Section 6.5.6
	Dissolved Mercury	RP-23-30	(1027-01)			

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Summary of Data Validation Findings
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Analyte Class	Qualified Analyte(s)	Affected Sample(s)		Qualifier	Reason	Table and/or Section Reference
		Sample ID	Blind ID			
Metals	Total and Dissolved Mercury	RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I	(1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01)	UJ	Analyte detected in associated method blank at a negative concentration	Table 8a Section 6.5.6
Metals	Total and Dissolved Zinc	RP-23-125 RP-20-97 RP-20-25 RP-20-110 RP-21-125 RP-21-28 RP-21-150 RP-21-150 MW-03-S MW-03-81 MW-03-I	(1030-01) (1031-01) (1032-01) (1033-01) (1034-01) (1035-01) (1036-01) (1036-02) (1037-01) (1041-01) (1042-01)	U	Analyte detected in associated method blank and/or CCB	Table 8a Section 6.5.6
Metals	Total and Dissolved Mercury	MW-03-137 MW-03-141	(1043-01) (1044-01)	UJ	Analyte detected in associated method blank at a negative concentration	Table 8a Section 6.5.6
Metals	Total and Dissolved Zinc	MW-03-137 MW-03-141 RP-24-85 RP-24-85 RP-24-73	(1043-01) (1044-01) (1048-01) (1048-02) (1049-01)	U	Analyte detected in associated method blank	Table 8a Section 6.5.6
	Dissolved Zinc	RP-24-30 RP-24-60	(1046-01) (1047-01)			
Metals	Total and Dissolved Zinc	RP-06-30 RP-06-87 RP-06-95 RP-06-105	(1050-01) (1051-01) (1052-01) (1053-01)	U	Analyte detected in associated method blank	Table 8a Section 6.5.6
Metals	Total Arsenic Total Cadmium Total Copper Total Zinc	RP-24-85	(1020-01)	J	Low MS recovery	Table 8c Section 6.5.8
Metals	Total Aluminum Total Calcium Total Chromium Total Iron Total Manganese Total Vanadium Total Zinc	RP-23-125	(1008-01)	J/UJ	High %Difference between serial dilutions	Table 8d Section 6.5.9
Metals	Total Zinc	RP-21-28	(1015-01)	J	High %Difference between serial dilutions	Table 8d Section 6.5.9
Metals	Total Aluminum Total Calcium Total Chromium Total Copper Total Iron Total Manganese Total Vanadium Total Zinc	RP-24-85	(1020-01)	J	High %Difference between serial dilutions	Table 8d Section 6.5.9
Metals	Total Arsenic Total Potassium	RP-22-29	(1024-01)	J	High %Difference between serial dilutions	Table 8d Section 6.5.9
Metals	Total Aluminum Total Calcium Total Chromium Total Copper Total Iron Total Manganese Total Zinc	RP-24-73	(1021-01)	J	High %Difference between serial dilutions	Table 8d Section 6.5.9
Metals	Dissolved Iron	RP-06-87	(1051-01)	J	High %Difference between serial dilutions	Table 8d Section 6.5.9

Notes:
CCAL = continuing calibration
CCB = continuing calibration blank
ICAL = initial calibration
ID = identification
LCS = laboratory control sample
MS = matrix spike
MSD = matrix spike duplicate
OCP = organochlorine insecticides
SVOC = semivolatile organic compound
VOC = volatile organic compound

C-2

Data Validation Report for the Stage 2 Source Control Evaluation, PCDD/PCDF

APPENDIX C-2

DATA VALIDATION REPORT FOR THE STAGE 2 SOURCE CONTROL EVALUATION PCDD/PCDF RESULTS RP - Portland Site

June 6, 2007

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ACRONYMS

%D	percent deviation or percent drift in relative response
°C	centigrade
COC	chain of custody
DEQ	Oregon Department of Environmental Quality
EMPC	estimated maximum possible concentration
EPA	U.S. Environmental Protection Agency
GC/MS	gas chromatography/mass spectrometry
HpCDD	heptachlorodibenzo-p-dioxin
HpCDF	heptachlorodibenzofuran
HxCDD	hexachlorodibenzo-p-dioxin
HxCDF	hexachlorodibenzofuran
ICAL	initial calibration
ID	identification
IS	internal standard
MDL	method detection limit
MS	matrix spike
OCDD	octachlorodibenzo-p-dioxin
OCDF	octachlorodibenzofuran
OPR	ongoing precision and recovery
PCDD	polychlorinated dioxins
PCDF	dibenzofurans
PeCDD	pentachlorodibenzo-p-dioxin
PeCDF	pentachlorodibenzofuran
pg/g	picograms per gram
pg/L	picograms per Liter
QAPP	quality assurance project plan
QC	quality control
RL	reporting limit

RP	Rhône-Poulenc
RPD	relative percent difference
SOP	standard operating procedure
SGS	SGS/Paradigm Analytical Laboratories, Inc.
STL	Severn Trent Laboratories, Inc.
TCDD	tetrachlorodibenzo-p-dioxin
TCDF	tetrachlorodibenzofuran
VER	verification standards

1.0 INTRODUCTION

A total of thirty-five soil and groundwater samples from the Rhône-Poulenc (RP) Portland Site Stage 2 Source Control Evaluation were submitted to SGS/Paradigm Analytical Laboratories, Inc. (SGS) in Wilmington, North Carolina or Severn Trent Laboratories, Inc. (STL) in Sacramento, California, for analysis of polychlorinated dioxins (PCDD) and dibenzofurans (PCDF) using United States Environmental Protection Agency (EPA) Method 1613B. The samples consisted of three primary soil samples, twenty-six primary aqueous samples, two aqueous field duplicates, and two rinsate blanks. Aliquots of two of the primary aqueous samples were also submitted to STL as interlaboratory split samples. A list of all samples by sample location, field sample identification (ID), sample collection date, sample matrix, SGS sample ID, and STL sample ID may be found in Table 1.

2.0 DATA VALIDATION METHODOLOGY

Validation of these data followed the EPA Region 10 Standard Operating Procedure (SOP) for the Validation of PCDD and PCDF Data (EPA, 1996) and the National Functional Guidelines for Chlorinated Dioxin/Furan Data Review (EPA, 2002), with reference to EPA Method 1613B (EPA, 1997) and EPA Method 8290 (EPA, 1994). The review exceeded the level of validation specified in the Oregon Department of Environmental Quality (DEQ)-approved Revised Quality Assurance Project Plan (QAPP) dated June 13, 2001 (AMEC, 2001).

In general, it is important to recognize that no analytical data are guaranteed to be correct, even if all quality control (QC) audits are passed. Strict QC serves to increase confidence in data, but any reported value may potentially contain error.

Qualifiers added to the data during validation are summarized in Table 2.

3.0 DEFINITIONS OF QUALIFIERS THAT MAY BE ADDED DURING DATA VALIDATION

The **U** qualifier indicates that an analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detection of target analytes in blanks.

The **J** qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation may indicate a concentration between the method detection limit (MDL) and the reporting limit (RL), or a data limitation related to a QC element that exceeds required acceptance limits.

The **UJ** qualifier indicates the RL is estimated. UJ qualifiers added during validation may indicate a high or low bias related to a QC element that exceeds required acceptance limits.

The **N** qualifier indicates an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte, but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

The **R** qualifier indicates that a result has been rejected due to serious QC problems. It is not possible to definitively determine whether the analyte is present or absent in the sample.

4.0 CHAIN OF CUSTODY AND SAMPLE RECEIPT CONDITION DOCUMENTATION

4.1 Sample Receipt at SGS

Samples were received at SGS with acceptable chain of custody (COC) documentation, intact, and within the EPA-recommended 4 degrees centigrade (°C) +/- 2°C temperature range, except as described below:

- According to SGS' sample receipt documentation, sample RP-24-30 (1046-01) was labeled 1046-01, but was listed as 1046-01A on the COC. This small discrepancy does not affect data usability.
- One liter of sample RP-06-95 (1052-01) broke in transit to the lab. There was sufficient sample volume received in intact bottles to perform all analyses and data usability is not adversely affected.

4.2 Sample Receipt at STL

Samples were received at STL with acceptable COC documentation, intact, and within the EPA-recommended 4°C +/- 2°C temperature range.

5.0 EPA METHOD 1613B

5.1 Holding Times

All samples were extracted within the method-specified holding time of one year from sample collection until extraction. All extracts were analyzed within the method-specified time of one year from extraction until analysis.

5.2 GC/MS Performance Checks and Initial Calibration

Analysis of PCDD/PCDF in these samples on the primary analytical column was conducted under internal calibration (ICAL) m1613-071006e. 2,3,7,8-Tetrachlorodibenzofuran (TCDF) detections were confirmed on a DB-225 column under ICAL mCF-c28jun06 and ICAL mcf-b112505a. Ion abundance ratios and percent relative standard deviation for all target compounds met EPA Method 1613B requirements.

5.3 Calibration Verification

All compounds in the calibration verification standards (VER) met method requirements for percent drift in relative response (%D) and ion abundance ratios.

5.4 Laboratory Blanks

Target analytes were not detected in the laboratory blanks associated with the analysis of these samples, except as described in Table 3.

Individual dioxin and furan congeners were generally not detected in any of the method blanks at concentrations greater than the method-specified minimum levels of:

- 10 picograms per liter (pg/L) or 1 picogram per gram (pg/g) for 2,3,7,8-tetrachlorodibenzo-p-dioxin (TCDD) and 2,3,7,8-TCDF;
- 100 pg/L or 10 pg/g for octachlorodibenzo-p-dioxin (OCDD) and octachlorodibenzofuran (OCDF); or
- 50 pg/L or 5 pg/g for all other individual dioxin and furan congeners, except as described below:

OCDD was detected in method blank WG14008 at a concentration of 299 pg/L. No OCDD detections greater than the minimum level of 100 pg/L were U qualified by AMEC Earth & Environmental, Inc. (AMEC) due to the detection in the method blank.

A full list of results that were qualified because of detections in laboratory blanks may be found in Table 5.

5.5 Rinsate Blank

Target analytes were not detected in the rinsate blanks associated with the analysis of these samples, except as described below:

OCDD and OCDF were detected in rinsate blank 1037-04 at concentrations of 17.1 and 2.09 pg/L, respectively. These analytes were detected in the associated laboratory blank at concentrations higher than those detected in the rinsate blank. Since the data were already qualified because of analyte detections in the laboratory blank, qualification based on analyte detections in the rinsate blank was not warranted.

OCDD and total HpCDD were detected in rinsate blank 1053-04 at concentrations of 30.0 and 4.44 pg/L, respectively. These analytes were detected in the associated laboratory blank at concentrations higher than those detected in the rinsate blank. Since the data were already qualified because of analyte detections in the laboratory blank, qualification based on analyte detections in the rinsate blank was not warranted.

5.6 Recovery of C-13 Labeled Isotope Dilution Standards Used as Internal Standards

EPA Method 1613B uses an isotope dilution procedure for calculation of analyte concentrations. A total of 18 carbon or chlorine labeled PCDD and PCDF isomers are added to the sample or extract to monitor different aspects of the procedure. Of the 18 labeled isomers added, 15 are used as internal standards (ISs) for calculation of analytical results. IS recovery problems affect all analytical results that are calculated using the affected IS, and not just the corresponding nonlabeled isomer.

Qualification of data based on IS results can seem counterintuitive in that low IS recovery implies a possible high bias in the calculated result, and high IS recovery can imply a possible low bias. The reason for this is that low recovery implies lower than expected area counts for the IS, and high recovery implies higher than expected area counts. The area of the IS appears in the denominator of the equation for calculation of results using the IS technique. Therefore, low IS area counts lead to high results for any calculation based on that IS, and high IS area counts lead to low results for any calculation based on that IS.

Recovery and performance of carbon labeled isotope dilution standards used as IS in all field and QC samples were within method-specified limits, except as described below:

- Recovery of the internal standard $^{13}C_{12}$-2,3,7,8-TCDF was below the method-specified 24 to 169% acceptance limits at 22.7% on the primary analytical column, but just barely outside acceptance limits at 23.9% on the DB-225 analytical column in sample RP-21-150 (1012-01). The 2,3,7,8-TCDF concentration from this sample should be taken from the DB-225 analytical column, and in AMEC's professional opinion data usability is not adversely affected.

5.7 Instrument Recovery Internal Standards

The instrument recovery standards $^{13}C_{12}$-1,2,3,4-TCDD (DB-5 and DB-225 analyses) and $^{13}C_{12}$-1,2,3,7,8,9-hexachlorodibenzo-p-dioxin (HxCDD) (DB-5 analysis only) are added to sample extracts and standards before injection into the gas chromatography/mass spectrometry (GC/MS). The instrument recovery standards are used to determine the recovery efficiency of the extraction and cleanup procedures, to determine if the GC/MS sensitivity and response are stable during the analytical run, and to determine if the same amount of extract was injected into the GC/MS (EPA, 1996). The $^{13}C_{12}$-1,2,3,4-TCDD recovery standard is used to calculate recoveries of the TCDD, TCDF, pentachlorodibenzo-p-dioxin (PeCDD), and pentachlorodibenzofuran (PeCDF). The $^{13}C_{12}$-1,2,3,7,8,9-HxCDD recovery standard is used to calculate recoveries of the HxCDD, hexachlorodibenzofuran (HxCDF), heptachlorodibenzo-p-dioxin (HpCDD), heptachlorodibenzofuran (HpCDF), OCDD, and OCDF IS.

Recovery of the sums of the instrument recovery standards in all field and QC samples were within method requirements of 25 to 400% of initial area counts.

According to the case narrative, SGS double spiked samples RP-22-S (1024-01) and RP-23-125 (1030-01) with the instrument recovery internal standards. Recoveries were acceptable and data usability is not adversely affected.

5.8 Ongoing Precision and Recovery Samples

SGS extracted and analyzed a minimum of one ongoing precision and recovery sample (OPR) with each extraction batch. This equates to a total of eight OPR results for twenty-nine primary samples, or approximately 28%, exceeding the 5% rate specified in the DEQ-approved QAPP. Recovery and precision in OPR samples associated with this project were acceptable.

5.9 Surrogate Recovery

SGS includes the cleanup standard $^{37}Cl_4$-2,3,7,8-TCDD in the spiking solution added to samples; this isomer can be used in a manner analogous to a surrogate compound in order to monitor cleanup efficiency. No data are qualified based on recovery of the $^{37}Cl_4$-2,3,7,8-TCDD cleanup standard unless recoveries of other labeled compounds are also outside acceptance limits.

5.10 Matrix Spikes

Matrix spikes (MSs) are not required for EPA Method 1613B. In order to evaluate MS recoveries, AMEC compared them against method-specified OPR acceptance limits.

SGS performed MSs on samples RP-21-28 (1035-01) and RP-06-87 (1051-01). All analyte recoveries were acceptable.

5.11 Data Reporting

SGS J qualified data when the individual congener concentration was less than the instrument's lowest calibration level. All of SGS's J qualifiers are appropriate and should be applied to the final data. (**J**-DL)

SGS Q qualified data when there was evidence of quantitative matrix interference, generally resulting in a low analytical bias. AMEC J qualified all of SGS's detected Q qualified data and UJ qualified all of SGS's nondetected Q qualified data. (**J/UJ**-MI)

AMEC N qualified the 1,2,3,4,7,8-HxCDD, 1,2,3,6,7,8-HxCDD, 1,2,3,7,8,9-HxCDD, and total HxCDD results from sample RP-06-87 (1051-01) because the signal to noise ratios for these compounds did not meet the method-specified minimum levels of 2.5. The reported concentrations should be considered estimated maximum possible concentrations (EMPCs). (**N**-EM)

6.0 FIELD DUPLICATES

AMEC collected sample RP-21-150 (1036-01 and 1036-02) and RP-24-85 (1048-01 and 1048-02) in duplicate. Relative percent differences (RPDs) between the primary and duplicate concentrations were less than the QAPP-recommended maximum of 30% for concentrations greater than 5 times the RL, or the difference between concentrations was less than the RL for concentrations less than 5 times the RL.

Field duplicate detections are summarized in Table 4.

7.0 INTERLABORATORY SPLIT SAMPLES

AMEC submitted sample MW-03-137 (1043-01 and 1043-05) and RP-06-95 (1052-01 and 1052-05) to both SGS and STL for analysis. The samples were labeled blindly, so that the primary laboratory (i.e., SGS) was not aware which sample was also submitted to the QC laboratory (i.e., STL). Primary samples were coded with -01 appended to the blind sample ID, and split samples were coded with -05 appended to the blind sample ID.

Target analytes were not detected in sample MW-03-137 (1043-01 and 1043-05) by either lab.

SGS detected total TCDF in sample RP-06-95 (1052-01) at a concentration of 18.2 pg/L. STL detected total TCDF in the split sample at a concentration of 24 pg/L, for a RPD of 27%, exhibiting acceptable analytical precision.

8.0 SUMMARY

PCDD/PCDF data generated for the Stage 2 Source Control Evaluation are of acceptable quality and are usable with the addition of the qualifiers listed in Table 2. No data were rejected based on analytical issues.

See Table 5 for a summary of the qualified data with references to the pertinent sections in this report.

The following statistics reflect percentages of data from field samples submitted to SGS:

- 11.4% of the data were U qualified because of detections in laboratory blanks.
- 2.06% of the data were J or UJ qualified because of quantitative matrix interference.
- 0.52% of the data were N qualified because the signal to noise ratios did not meet method-specified acceptance limits.

The remainder of the data were either fully usable, without qualification, or J qualified because of detections between the MDL and MRL.

REFERENCES

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EPA, 1997. *Method 1613, Revision B. Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS*. Federal Register, Volume 62, Number 178. September 15, 1997.

EPA, 2002. *National Functional Guidelines for Chlorinated Dioxin/Furan Data Review*, Draft Final, EPA 540-R-02-003, March 2002.

LIMITATIONS

This report was prepared exclusively for SLLI by AMEC Earth & Environmental, Inc. (AMEC). The quality of information, conclusions, and estimates contained herein is consistent with the level of effort involved in AMEC services and based on:
i) information available at the time of preparation, ii) data supplied by outside sources, and iii) the assumptions, conditions, and qualifications set forth in this report. This Data Validation Report for the Stage 2 Source Control Evaluation, PCDD/PCDF Results is intended to be used by SLLI for the RP - Portland Site, 6200 N.W. St. Helens Road, Portland, Oregon only, subject to the terms and conditions of its contract with AMEC. Any other use of, or reliance on, this report by any third party is at that party's sole risk.

TABLES

TABLE 1
Field Samples Submitted to
SGS/Paradigm Analytical Laboratories and Severn Trent Laboratories
with Corresponding Laboratory IDs
Stage 2 Source Control Evaluation
RP - Portland Site

Sample Location	Field Sample ID	Sample Matrix	Sample Date	SGS Sample ID	SGS Extraction Batch	STL Sample ID	Notes
RP-20-97	1003-01	Soil	10/06/2006	G185-225-1	WG13265	-	
RP-21-150	1012-01	Soil	10/20/2006	G185-230-1	WG13315	-	
RP-24-85	1018-01	Soil	10/27/2006	G185-231-1	WG13315	-	
RP-22-S	1024-01	Water	11/07/2006	G185-232-1	WG13332	-	
RP-22-75	1025-01	Water	11/07/2006	G185-232-2	WG13332	-	
RP-22-151	1026-01	Water	11/08/2006	G185-233-1	WG13332	-	
RP-23-30	1027-01	Water	11/08/2006	G185-233-2	WG13332	-	
RP-23-85	1028-01	Water	11/09/2006	G185-234-1	WG13332	-	
RP-23-100	1029-01	Water	01/09/2006	G185-234-2	WG13332	-	
RP-23-125	1030-01	Water	11/10/2006	G185-235-1	WG13332	-	
RP-20-97	1031-01	Water	11/10/2006	G185-235-2	WG13332	-	
RP-20-25	1032-01	Water	11/10/2006	G185-235-3	WG13332	-	
RP-20-110	1033-01	Water	11/13/2006	G185-237-1	WG13354	-	
RP-21-125	1034-01	Water	11/14/2006	G185-238-1	WG13354	-	
RP-21-28	1035-01	Water	11/14/2006	G185-238-2	WG13354	-	
RP-21-150	1036-01	Water	11/15/2006	G185-236-1	WG13354	-	
RP-21-150	1036-02	Water	11/15/2006	G185-236-2	WG13354	-	Field duplicate
MW-03-S	1037-01	Water	11/15/2006	G185-236-3	WG13354	-	
Rinsate blank	1037-04	Water	11/16/2006	G185-236-4	WG13354	-	Rinsate blank
MW-03-81	1041-01	Water	11/16/2006	G185-240-1	WG14002	-	
MW-03-I	1042-01	Water	11/16/2006	G185-240-2	WG14002	-	
MW-03-137	1043-01	Water	11/17/2006	G185-239-1	WG13354	-	
MW-03-137	1043-05	Water	11/17/2006	-	-	G6K290220-001	Interlaboratory split
MW-03-141	1044-01	Water	11/17/2006	G185-231-2	WG13354	-	
RP-24-30	1046-01	Water	11/20/2006	G185-244-1	WG14002	-	
RP-24-60	1047-01	Water	11/20/2006	G185-244-2	WG14002	-	
RP-24-85	1048-01	Water	11/21/2006	G185-241-1	WG14002	-	
RP-24-85	1048-02	Water	11/21/2006	G185-241-2	WG14002	-	Field duplicate
RP-24-73	1049-01	Water	11/21/2006	G185-241-3	WG14002	-	
RP-06-30	1050-01	Water	11/27/2006	G185-245-1	WG14008	-	
RP-06-87	1051-01	Water	11/27/2006	G185-245-2	WG14008	-	MS/MSD
RP-06-95	1052-01	Water	11/27/2006	G185-245-3	WG14008	-	
RP-06-95	1052-05	Water	11/27/2006	-	-	G6K290220-002	Interlaboratory split
RP-06-105	1053-01	Water	11/28/2006	G185-247-1	WG14008	-	
Rinsate blank	1053-04	Water	11/28/2006		WG14008	-	Rinsate blank

Notes:

ID = identification

MS/MSD = matrix spike/matrix spike duplicate

SGS = SGS/Paradigm Analytical Laboratories, Inc.

STL = Severn Trent Laboratories, Inc.

TABLE 2
Summary of Data Qualifiers for PCDD/PCDF Congeners
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	RP-20-97 1003-01	RP-21-150 1012-01	RP-24-85 1018-01	RP-22-S 1024-01	RP-22-75 1025-01	RP-22-151 1026-01	RP-23-30 1027-01	RP-23-85 1028-01	RP-23-100 1029-01
2,3,7,8-TCDD	none	none	none	none	none	none	none	**J**-DL	none
1,2,3,7,8-PeCDD	none	none	none	none	none	**U**-MB	none	**U**-MB	none
1,2,3,4,7,8-HxCDD	none	none	none	none	none	none	none	**U**-MB	none
1,2,3,6,7,8-HxCDD	none	**J**-DL	none	none	none	none	none	**U**-MB	none
1,2,3,7,8,9-HxCDD	none	none	none	none	none	none	none	**U**-MB	none
1,2,3,4,6,7,8-HpCDD	none	none	none	**U**-MB	none	none	**U**-MB	**U**-MB	none
OCDD	**J**-MI	none	none	**J**-DL	none	none	**J**-DL	none	none
2,3,7,8-TCDF	**J**-DL	none	none	none	none	none	none	none	none
1,2,3,7,8-PeCDF	**J**-DL	**J**-DL	**J**-DL	none	none	**U**-MB	none	**U**-MB	**U**-MB
2,3,4,7,8-PeCDF	none	**J**-DL	**J**-DL	none	none	**U**-MB	none	**U**-MB	**U**-MB
1,2,3,4,7,8-HxCDF	**J**-DL	none	**J**-DL	**U**-MB	none	**U**-MB	**U**-MB	**U**-MB	none
1,2,3,6,7,8-HxCDF	**J**-DL	**J**-DL	**J**-DL	none	none	**U**-MB	none	**U**-MB	**U**-MB
1,2,3,7,8,9-HxCDF	**UJ**-MI	**J**-DL/MI	**J**-DL	none	none	none	none	none	none
2,3,4,6,7,8-HxCDF	none	**J**-DL	none	none	none	none	none	**U**-MB	none
1,2,3,4,6,7,8-HpCDF	**J**-DL	**J**-MI	**J**-DL	none	none	none	**J**-DL	none	none
1,2,3,4,7,8,9-HpCDF	none	**J**-DL	**J**-DL	none	none	none	none	none	none
OCDF	**J**-DL	none	**J**-DL	**U**-MB	none	none	**U**-MB	**U**-MB	none
Total TCDD	**J**-DL/MI	none	**J**-DL	none	none	none	none	**J**-DL	none
Total PeCDD	**UJ**-MI	**UJ**-MI	**UJ**-MI	none	none	**U**-MB	none	**U**-MB	none
Total HxCDD	**J**-DL	**J**-DL	**J**-DL	none	none	none	none	**U**-MB	none
Total HpCDD	none	none	none	**U**-MB	none	none	**U**-MB	**U**-MB	none
Total TCDF	**J**-MI	none	none	none	**U**-MB	**U**-MB	**U**-MB	**U**-MB	none
Total PeCDF	**J**-DL/MI	**J**-MI	none	none	none	**U**-MB	none	**U**-MB	**U**-MB
Total HxCDF	**J**-DL/MI	**J**-MI	none	**U**-MB	none	**U**-MB	**U**-MB	**U**-MB	**U**-MB
Total HpCDF	**J**-DL	**J**-MI	none	none	none	none	**J**-DL	none	none

TABLE 2
Summary of Data Qualifiers for PCDD/PCDF Congeners
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	RP-23-125 1030-01	RP-20-97 1031-01	RP-20-25 1032-01	RP-20-110 1033-01	RP-21-125 1034-01	RP-21-28 1035-01	RP-21-150 1036-01	RP-21-150 1036-02	MW-03-S 1037-01
2,3,7,8-TCDD	**J**-DL	none	none	none	none	none	none	none	none
1,2,3,7,8-PeCDD	**U**-MB	none	**U**-MB	none	none	none	none	none	none
1,2,3,4,7,8-HxCDD	**U**-MB	none	none	none	none	none	none	none	none
1,2,3,6,7,8-HxCDD	none	none	**U**-MB	none	none	none	none	none	none
1,2,3,7,8,9-HxCDD	**U**-MB	none	**U**-MB	none	none	none	none	none	none
1,2,3,4,6,7,8-HpCDD	**U**-MB	none	none	none	none	none	none	none	none
OCDD	none	none	**J**-DL	none	none	none	none	none	none
2,3,7,8-TCDF	none	none	**J**-DL	none	none	none	none	none	none
1,2,3,7,8-PeCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
2,3,4,7,8-PeCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
1,2,3,4,7,8-HxCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
1,2,3,6,7,8-HxCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
1,2,3,7,8,9-HxCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
2,3,4,6,7,8-HxCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
1,2,3,4,6,7,8-HpCDF	**J**-DL	none	none	none	none	none	none	none	none
1,2,3,4,7,8,9-HpCDF	none	none	none	none	none	none	none	none	none
OCDF	**U**-MB	none	**U**-MB	none	none	none	**U**-MB	none	none
Total TCDD	**J**-DL	none	none	none	none	none	none	none	none
Total PeCDD	**U**-MB	none	**U**-MB	none	none	none	none	none	none
Total HxCDD	**U**-MB	none	**U**-MB	none	none	none	none	none	none
Total HpCDD	**U**-MB	none	**U**-MB	none	none	none	none	none	none
Total TCDF	none	none	**U**-MB	none	none	none	**J**-DL	**J**-DL	none
Total PeCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
Total HxCDF	**U**-MB	none	**U**-MB	none	none	none	none	none	none
Total HpCDF	**J**-DL	none	**J**-DL	none	none	none	none	none	none

TABLE 2
Summary of Data Qualifiers for PCDD/PCDF Congeners
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	MW-03-81 1041-01	MW-03-I 1042-01	MW-03-137 1043-01	MW-03-141 1044-01	RP-24-30 1046-01	RP-24-60 1047-01	RP-24-85 1048-01	RP-24-85 1048-02	RP-24-73 1049-01
2,3,7,8-TCDD	none	none	none	none	none	none	none	none	none
1,2,3,7,8-PeCDD	none	none	none	none	none	none	none	none	none
1,2,3,4,7,8-HxCDD	none	none	none	none	**J**-DL	none	none	none	none
1,2,3,6,7,8-HxCDD	none	none	none	none	**J**-DL	none	none	none	none
1,2,3,7,8,9-HxCDD	none	none	none	none	**J**-DL	none	none	none	none
1,2,3,4,6,7,8-HpCDD	none	none	none	none	none	none	none	**J**-DL	**J**-DL
OCDD	none	none	**U**-MB	none	none	none	**J**-DL	**J**-DL	**J**-DL
2,3,7,8-TCDF	none	none	none	none	none	none	none	none	none
1,2,3,7,8-PeCDF	none	none	none	none	**J**-DL	none	none	none	none
2,3,4,7,8-PeCDF	none	none	none	none	**J**-DL	none	none	none	none
1,2,3,4,7,8-HxCDF	none	none	none	none	none	none	none	none	none
1,2,3,6,7,8-HxCDF	none	none	none	none	**J**-DL	none	none	none	none
1,2,3,7,8,9-HxCDF	none	none	none	none	**J**-DL	none	none	none	none
2,3,4,6,7,8-HxCDF	none	none	none	none	**J**-DL	none	none	none	none
1,2,3,4,6,7,8-HpCDF	none	none	none	none	none	none	none	none	none
1,2,3,4,7,8,9-HpCDF	none	none	none	none	**J**-DL	none	none	none	none
OCDF	none	none	none	none	none	none	**J**-DL	**J**-DL	**J**-DL
Total TCDD	none	none	none	none	**J**-DL	none	none	none	none
Total PeCDD	none	none	none	none	**J**-DL/MI	none	none	none	none
Total HxCDD	none	none	none	none	none	none	none	none	none
Total HpCDD	none	none	none	none	none	none	none	**J**-DL	**J**-DL
Total TCDF	none	none	**J**-DL	**J**-DL	none	none	**J**-DL	**J**-DL	none
Total PeCDF	none	none	none	none	**J**-MI	none	none	none	none
Total HxCDF	none	none	none	none	none	none	none	none	none
Total HpCDF	none	none	none	none	none	none	none	none	none

TABLE 2
Summary of Data Qualifiers for PCDD/PCDF Congeners
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	RP-06-30 1050-01	RP-06-87 1051-01	RP-06-95 1052-01	RP-06-105 1053-01
2,3,7,8-TCDD	none	none	none	none
1,2,3,7,8-PeCDD	none	**J**-DL	none	none
1,2,3,4,7,8-HxCDD	none	**NJ**-EM/DL	none	none
1,2,3,6,7,8-HxCDD	none	**NJ**-EM/DL	none	none
1,2,3,7,8,9-HxCDD	none	**NJ**-EM/DL	none	none
1,2,3,4,6,7,8-HpCDD	none	**U**-MB	none	**U**-MB
OCDD	**U**-MB	**U**-MB	**U**-MB	**U**-MB
2,3,7,8-TCDF	none	none	none	none
1,2,3,7,8-PeCDF	none	**J**-DL	none	none
2,3,4,7,8-PeCDF	none	**J**-DL	none	none
1,2,3,4,7,8-HxCDF	none	**J**-DL	none	none
1,2,3,6,7,8-HxCDF	none	**J**-DL	none	none
1,2,3,7,8,9-HxCDF	none	**J**-DL	none	none
2,3,4,6,7,8-HxCDF	none	**J**-DL	none	none
1,2,3,4,6,7,8-HpCDF	none	none	none	none
1,2,3,4,7,8,9-HpCDF	none	none	none	none
OCDF	none	**U**-MB	none	none
Total TCDD	none	none	none	none
Total PeCDD	none	**J**-DL	none	none
Total HxCDD	none	**NJ**-EM/DL	none	none
Total HpCDD	**U**-MB	**U**-MB	none	**U**-MB
Total TCDF	none	none	none	none
Total PeCDF	none	**J**-DL	none	none
Total HxCDF	none	**J**-DL	none	none
Total HpCDF	none	none	none	none

PCDD/PCDF = polychlorinated dioxins/dibenzofurans

TABLE 2
Summary of Data Qualifiers for PCDD/PCDF Congeners
Stage 2 Source Control Evaluation
RP - Portland Site

Data Qualifiers

U The U qualifier indicates that the analyte must be considered to be nondetected at the concentration listed. U qualifiers added during validation are typically a result of detections of target analytes in rinsate or laboratory blanks.

J The J qualifier indicates that the associated result is quantitatively uncertain. J qualifiers added during validation may indicate a data limitation related to a quality control element that exceeds required acceptance limits.

N The N qualifier indicates that an analyte has been presumptively identified. Presumptive detection means that a chromatographic peak was detected at the correct retention time for an analyte but that not all required identification criteria were met. The associated result is both qualitatively and quantitatively uncertain.

UJ The analyte was not detected at a concentration above the method reporting limit. However, the reporting limit is approximate and may be inaccurate or imprecise.

NJ The analysis indicates the presence of an analyte that has been tentatively identified and the associated numerical value represents its approximate concentration.

Qualification Rationale Abbreviations

DL Analyte concentration is between the MDL and RL.
EM Value is an estimated maximum possible concentration.
MB Analyte was detected in a method blank at a concentration greater than 10 or 20% of the concentration detected in the sample.
MI Quantitative interference due to matrix interference. The analytical result may be biased low.

TABLE 3
Analyte Detections in Laboratory Blanks
Stage 2 Source Control Evaluation
RP - Portland Site

Detected Analyte	Detected Concentration	5 x Rule	Qualified Samples (**U**-MB)
Laboratory Blank WG13265 (pg/g)			
OCDD	4.7	23.5	Analyte concentrations in the associated samples were more than 5 times the concentration detected in the blank and data usability is not adversely affected.
Laboratory Blank WG13315 (pg/g)			
OCDD	1.67	8.35	Analyte concentrations in the associated samples were more than 5 times the concentration detected in the blank and data usability is not adversely affected.
Laboratory Blank WG13332 (pg/L)			
1,2,3,7,8-PeCDD	4.26	21.3	RP-22-151 (1026-01), RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
1,2,3,4,7,8-HxCDD	2.72	13.6	RP-23-85 (1028-01), RP-23-125 (1030-01)
1,2,3,6,7,8-HxCDD	2.70	13.5	RP-23-85 (1028-01), RP-20-25 (1032-01)
1,2,3,7,8,9-HxCDD	2.62	13.1	RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
1,2,3,4,6,7,8-HpCDD	4.12	20.6	RP-22-S (1024-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-23-125 (1030-01)
2,3,7,8-TCDF	9.26	46.3	Samples not affected
1,2,3,7,8-PeCDF	5.90	29.5	RP-22-151 (1026-01), RP-23-85 (1028-01), RP-23-100 (1029-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
2,3,4,7,8-PeCDF	4.22	21.1	RP-22-151 (1026-01), RP-23-85 (1028-01), RP-23-100 (1029-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
1,2,3,4,7,8-HxCDF	3.14	15.7	RP-22-S (1024-01), RP-22-151 (1026-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
1,2,3,6,7,8-HxCDF	3.32	16.6	RP-22-151 (1026-01), RP-23-85 (1028-01), RP-23-100 (1029-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
2,3,4,6,7,8-HxCDF	2.28	11.4	RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
1,2,3,7,8,9-HxCDF	2.76	13.8	RP-23-125 (1030-01), RP-20-25 (1032-01)
OCDF	2.52	12.6	RP-22-S (1024-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
Total PeCDD	4.26	21.3	RP-22-151 (1026-01), RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
Total HxCDD	8.04	40.2	RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
Total HpCDD	4.12	20.6	RP-22-S (1024-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
Total TCDF	9.26	46.3	RP-22-75 (1025-01), RP-22-151 (1026-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-20-25 (1032-01)

TABLE 3
Analyte Detections in Laboratory Blanks
Stage 2 Source Control Evaluation
RP - Portland Site

Detected Analyte	Detected Concentration	5 x Rule	Qualified Samples (**U**-MB)
Laboratory Blank WG13332 (pg/L) continued			
Total PeCDF	10.1	50.5	RP-22-151 (1026-01), RP-23-85 (1028-01), RP-23-100 (1029-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
Total HxCDF	11.5	57.5	RP-22-S (1024-01), RP-22-151 (1026-01), RP-23-30 (1027-01), RP-23-85 (1028-01), RP-23-100 (1029-01), RP-23-125 (1030-01), RP-20-25 (1032-01)
Laboratory Blank WG13354 (pg/L)			
OCDD	22.3	112	MW-03-137 (1043-01)
OCDF	5.74	28.7	RP-21-150 (1036-01)
Laboratory Blank WG14008 (pg/L)			
1,2,3,4,6,7,8-HpCDD	21.0	105	RP-06-87 (1051-01), RP-06-105 (1053-01)
OCDD	299	1495	RP-06-30 (1050-01), RP-06-87 (1051-01), RP-06-95 (1052-01), RP-06-105 (1053-01)
OCDF	46.1	231	RP-06-87 (1051-01)
Total HpCDD	49.6	248	RP-06-30 (1050-01), RP-06-87 (1051-01), RP-06-105 (1053-01)
Total HpCDF	36.7	184	Samples not affected

Notes:

HpCDD	Heptachlorodibenzo-p-dioxin
HpCDF	Heptachlorodibenzofuran
HxCDD	Hexachlorodibenzo-p-dioxin
HxCDF	Hexachlorodibenzofuran
OCDD	Octachlorodibenzo-p-dioxin
OCDF	Octachlorodibenzofuran
PeCDD	Pentachlorodibenzo-p-dioxin
PeCDF	Pentachlorodibenzofuran
pg/g	picograms per gram
pg/L	picograms per liter
TCDF	Tetrachlorodibenzofuran

TABLE 4
Field Duplicate Results
Stage 2 Source Control Evaluation
RP - Portland Site

Analyte	Primary Conc. (pg/L)	Duplicate Conc. (pg/L)	RPD
Sample RP-21-150 (1036-01 and 1036-02)			
Total TCDF	2.93 J	2.85 J	3%
Sample RP-24-85 (1048-01 and 1048-02)			
1,2,3,4,6,7,8-HpCDD	2.72 U	5.05 J	NC
OCDD	37.0 J	34.9 J	6%
OCDF	7.15 J	6.07 J	16%
Total HpCDD	2.72 U	9.99 J	NC
Total TCDF	1.46 J	1.56 J	7%

Notes:

HpCDD	Heptachlorodibenzo-p-dioxin
NC	Not calculable
OCDD	Octachlorodibenzo-p-dioxin
OCDF	Octachlorodibenzofuran
pg/L	picograms per liter
RPD	relative percent difference
TCDF	Tetrachlorodibenzofuran

TABLE 5
Qualified Data Summary
Stage 2 Source Control Evaluation
RP - Portland Site

Reason for Qualification	Sample Location	Blind Sample ID	Qualified Data	Analyte Concentration (pg/L)
Analytes were U qualified because they were detected in both field samples and in their associated laboratory blanks. The concentrations detected in the samples were less than five times the concentrations detected in the blanks. (See Section 5.4)	RP-22-S	1024-01	1,2,3,4,6,7,8-HpCDD	6.95
			1,2,3,4,7,8-HxCDF	1.27
			OCDF	8.02
			Total HpCDD	15.3
			Total HxCDF	1.27
	RP-22-75	1025-01	Total TCDF	1.59
	RP-22-151	1026-01	1,2,3,7,8-PeCDD	3.49
			1,2,3,7,8-PeCDF	4.6
			2,3,4,7,8-PeCDF	3.74
			1,2,3,4,7,8-HxCDF	1.86
			1,2,3,6,7,8-HxCDF	1.7
			Total PeCDD	3.49
			Total TCDF	24.1
			Total PeCDF	8.34
			Total HxCDF	6.66
	RP-23-30	1027-01	1,2,3,4,6,7,8-HpCDD	9.74
			1,2,3,4,7,8-HxCDF	2.02
			OCDF	5.14
			Total HpCDD	19.8
			Total TCDF	2.83
			Total HxCDF	6.4
	RP-23-85	1028-01	1,2,3,7,8-PeCDD	8.89
			1,2,3,4,7,8-HxCDD	6.5
			1,2,3,6,7,8-HxCDD	5.22
			1,2,3,7,8,9-HxCDD	2.56
			1,2,3,4,6,7,8-HpCDD	3.93
			1,2,3,7,8-PeCDF	10.6
			2,3,4,7,8-PeCDF	7.94
			1,2,3,4,7,8-HxCDF	5.43
			1,2,3,6,7,8-HxCDF	5.39
			2,3,4,6,7,8-HxCDF	2.39
			OCDF	2.24
			Total PeCDD	8.89
			Total HxCDD	14.3
			Total HpCDD	3.93
			Total TCDF	6.72
			Total PeCDF	18.6
			Total HxCDF	15.6
	RP-23-100	1029-01	1,2,3,7,8-PeCDF	3.06
			2,3,4,7,8-PeCDF	2.55
			1,2,3,6,7,8-HxCDF	1.47
			Total PeCDF	5.61
			Total HxCDF	1.47

TABLE 5
Qualified Data Summary
Stage 2 Source Control Evaluation
RP - Portland Site

Reason for Qualification	Sample Location	Blind Sample ID	Qualified Data	Analyte Concentration (pg/L)
Analytes were U qualified because they were detected in both field samples and in their associated laboratory blanks. The concentrations detected in the samples were less than five times the concentrations detected in the blanks. (See Section 5.4)	RP-23-125	1030-01	1,2,3,7,8-PeCDD	7.28
			1,2,3,4,7,8-HxCDD	4.77
			1,2,3,7,8,9-HxCDD	3.98
			1,2,3,4,6,7,8-HpCDD	4.45
			1,2,3,7,8-PeCDF	7.99
			2,3,4,7,8-PeCDF	6.84
			1,2,3,4,7,8-HxCDF	5.43
			1,2,3,6,7,8-HxCDF	5.13
			2,3,4,6,7,8-HxCDF	4.14
			1,2,3,7,8,9-HxCDF	4.97
			OCDF	4.23
			Total PeCDD	7.28
			Total HxCDD	8.75
			Total HpCDD	4.45
			Total PeCDF	14.8
			Total HxCDF	22.1
			Total HpCDF	6.52
	RP-20-25	1032-01	1,2,3,7,8-PeCDD	1.88
			1,2,3,6,7,8-HxCDD	1.48
			1,2,3,7,8,9-HxCDD	2.32
			1,2,3,7,8-PeCDF	4.59
			2,3,4,7,8-PeCDF	3.46
			1,2,3,4,7,8-HxCDF	6.01
			1,2,3,6,7,8-HxCDF	2.87
			2,3,4,6,7,8-HxCDF	2.53
			1,2,3,7,8,9-HxCDF	3.77
			OCDF	9.02
			Total PeCDD	1.88
			Total HxCDD	5.69
			Total HpCDD	11.7
			Total TCDF	4.68
			Total PeCDF	10.2
			Total HxCDF	20
	RP-21-150	1036-01	OCDF	2.02
	MW-03-137	1043-01	OCDD	19.4
	RP-06-30	1050-01	OCDD	55.7
			Total HpCDD	8.9
	RP-06-87	1051-01	1,2,3,4,6,7,8-HpCDD	5.49
			OCDD	30.6
			OCDF	8.81
			Total HpCDD	5.49
	RP-06-95	1052-01	OCDD	16.9
	RP-06-105	1053-01	1,2,3,4,6,7,8-HpCDD	3.02
			OCDD	24
			Total HpCDD	3.02

TABLE 5
Qualified Data Summary
Stage 2 Source Control Evaluation
RP - Portland Site

Reason for Qualification	Sample Location	Blind Sample ID	Qualified Data	Analyte Concentration (pg/L)
Analytes were J or UJ qualified because there was evidence of quantitative matrix interference. Analytical results may be biased low. (See Section 5.11)	RP-20-97	1003-01	OCDD	64.2
			1,2,3,7,8,9-HxCDF	0.38 U
			Total TCDD	0.212
			Total PeCDD	0.38 U
			Total TCDF	0.861
			Total PeCDF	0.372
			Total HxCDF	1.89
	RP-21-150	1012-01	1,2,3,7,8,9-HxCDF	10.1
			1,2,3,4,6,7,8-HpCDF	73.6
			Total PeCDD	5.86 U
			Total PeCDF	134
			Total HxCDF	249
			Total HpCDF	177
	RP-24-85	1018-01	Total PeCDD	6.34 U
	RP-24-30	1046-01A	Total PeCDD	19.6
			Total PeCDF	207
Analytes were N qualified because the signal to noise ratios did not meet method-specified acceptance limits. The detections should be considered presumptive. (See Section 5.11)	RP-06-87	1051-01	1,2,3,4,7,8-HxCDD	4.94
			1,2,3,6,7,8-HxCDD	4.42
			1,2,3,7,8,9-HxCDD	4.96
			Total HxCDD	14.3

Notes:

pg/L	picograms per liter
HpCDD	Heptachlorodibenzo-p-dioxin
HpCDF	Heptachlorodibenzofuran
HxCDD	Hexachlorodibenzo-p-dioxin
HxCDF	Hexachlorodibenzofuran
OCDD	Octachlorodibenzo-p-dioxin
OCDF	Octachlorodibenzofuran
PeCDD	Pentachlorodibenzo-p-dioxin
PeCDF	Pentachlorodibenzofuran
TCDD	Tetrachlorodibenzo-p-dioxin
TCDF	Tetrachlorodibenzofuran

APPENDIX D

Laboratory Data Reports

(Provided on Attached Compact Disk)