March 22, 2018

Tim Mullin
Voluntary Cleanup Program Site Manager
Southwest Region – Toxics Cleanup Program
Washington State Department of Ecology
300 Desmond Drive Southeast
Lacey, Washington 98503

Re: Submittal of Remedial Investigation Report
Today's Family Dentistry
2616 NE 112th Avenue
Vancouver, Washington 98684

Dear Mr. Mullin:

On behalf of Dr. J. Blake Perkins, Alpha Environmental Services is pleased to provide you with the results of our Remedial Investigation report for the property located at 2616 NE 112th Avenue, Vancouver, Washington. Alpha completed the Remedial Investigation of the property in March 2018, in conformance the Washington Administrative Code (WAC). The report presents the results of the past sampling events, the current sampling events, and the resulting data produced from the installation and testing of the monitoring wells.

Based on the results on the investigation, Alpha requests that the Washington State Department of Ecology (DOE) issue a No Further Action (NFA) determination for the site. The site meets the cleanup requirements established in WAC 173-340-360 and the onsite soils and groundwater are protective of human health and the environment.

We appreciate the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact us at (503) 292-5346.

Sincerely,

Alpha Environmental Services, Inc.

Jim Cooper, L.G.
Senior Geologist

Phillip Brewer
Principal

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REMEDIAL INVESTIGATION REPORT

Prepared For:

WASHINGTON STATE DEPARTMENT OF ECOLOGY
300 DESMOND DRIVE SOUTHEAST
LACEY, WASHINGTON 98503

On Behalf of:

J BLAKE PERKINS
PERKINS NW LEASING & FINANCING, LLC
811 NE 112TH AVENUE, STE 100
VANCOUVER, WASHINGTON 98684

Property Identification:

TODAY'S FAMILY DENTISTRY
2616 NE 112TH AVENUE
VANCOUVER, WASHINGTON 98684

Prepared By:

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Date Issued: March 22, 2018
Alpha Project Number: 17-16167

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Alpha Environmental Services (Alpha) completed a Remedial Investigation (RI) report at the property located at 2616 NE 112th Avenue, Vancouver, Washington (the Property). The report was prepared in general accordance with the requirements defined by the Model Toxics Control Act (MTCA) Regulation (Washington Administrative Code [WAC] 173-340-350) for submittal to Washington Department of Ecology (DOE). The purpose of this RI was to collect and evaluate sufficient soil and groundwater data to determine if the site meets the cleanup criteria for unrestricted land use pursuant to MTCA.

Introduction

The Property is located at 2616 NE 112th Avenue, Vancouver, Clark County, Washington. The Property parcel consists of a rectangular-shaped lot approximately 0.82 acre in size. The Property is zoned Community Commercial (CC) and is occupied by one commercial building. The proposed future use will be retail or service business.

The Property is relatively flat and at an approximate elevation of 212 feet above mean sea level. The vicinity of the Property can generally be described as commercial and residential. Current usage of the adjoining properties includes: north – ARCO station and small strip mall with NE Burton Road beyond; south – residential dwellings; east – NE 112th Avenue with a Safeway Shopping Center beyond; and west – residential development.

Previous Findings

The site has had a long history as a dental office and during a routine septic inspection, a crack was discovered in the septic tank. The DOE collected samples of the tank sludge and the analytical results showed high levels of mercury, silver, copper and zinc. The Clark County Public Health (CCPH) department issued a Notice of Violation and required the decommissioning of the septic system and connection to the sanitary sewer. The DOE conducted a follow-up site visit and confirmed the pumping of the sludge and the removal of the septic tank. Based on the high concentrations of heavy metals detected in the sludge, the DOE determined there may be a potential impact to soil and groundwater. The site was added to the DOE's list of suspected and confirmed sites.

In 2013, subsurface soil and groundwater sampling were conducted at the site under the direction of the CCPH. The only metal that was detected in the soil samples above the cleanup and natural background levels was chromium. Heavy metals detected in the groundwater that had concentrations above cleanup levels were arsenic, chromium and lead. Based on the CCPH sampling, the site Contaminants of Concern (COCs) include arsenic, chromium and lead, none of which were found at significantly elevated levels inside the septic sludge.

Scope of Services

The subsurface soil assessment consisted of sampling three of the four soil borings advanced by Cascade Drilling with a GeoProbe direct-push drill rig. The borings were advanced and sampled in 5-foot intervals to approximately 20 feet below surface grade (bsg). The soil samples were shipped to Apex Laboratory in Tigard, Oregon under chain-of-custody protocol and analyzed by EPA Test Method 6020 – heavy metals.

As part of the scope of services for the project, four monitoring wells were installed at the Property. The wells were placed to assess the groundwater conditions and help delineate the groundwater flow direction. All of the monitoring wells were installed using a direct-push method and wells were constructed of 2-inch schedule-40 PVC threaded casing with a 10-foot screened interval. Monitoring wells were completed with aboveground lockable steel security casings and surrounded by concrete.

As directed by the Ecology project manager, the wells were allowed to stabilize a minimum of two weeks after installation and prior to sampling. After sufficient time had elapsed, wells were purged and samples were collected using a peristaltic pump. The wells were purged and sampled using low-flow/minimal drawdown methodology.

Findings

Septic Tank

The initial laboratory testing of the septic tank showed high levels of mercury, silver, copper and zinc in the septic sludge. Since the septic tank was found to be cracked and contained elevated levels of these metals, it was anticipated that the samples of soil and groundwater samples collected near the former tank and leach lines, would likewise have elevated levels. This was not the case and as the laboratory results for the CCPH samples had detected concentrations of these substances in soil and groundwater well below cleanup levels. Based on these results, copper, mercury, silver and zinc were ruled out as COCs for the site.

CCPH Initial Soil and Groundwater Sample Results

The only metal from the initial CCPH soil sampling that had detected concentrations above cleanup and natural background levels was chromium. Two of the samples, B2-SS1 (28 ppm) and B3-SS2 (31 ppm), contained slightly elevated concentrations above the natural background level of 27 ppm. A footnote in the Site Hazard Assessment worksheet indicates "subsurface soils were very poor for the collection and analysis of chemical constituents".

Heavy metals detected in the groundwater that had concentrations above cleanup levels were arsenic, chromium and lead. The disturbance of the subsurface environment during the temporary well construction and sampling procedures appears to have adversely affected the quality of the initial sampling results. It is Alpha's opinion that unfavorable conditions existed during the initial groundwater sample collection and the high results were an artifact of the well installation.

Therefore, based on the evaluation of the sample methodology and results, the apparent contamination identified above, may not be reliable for risk evaluation. The hazard ranking score was based entirely on these initial results and caused the site to receive a ranking of 2. If the site were reevaluated using the current sample data that did not exceed cleanup levels, the site would not be ranked and considered a risk.

It may not have significantly affected the sample quality; however, it also should be noted that according to the Test America sample log sheet, the initial samples were received with a cooler temperature outside required temperature criteria. The client was contacted at that time regarding this issue.

Current Soil and Groundwater Sample Results

The laboratory results for the soil samples indicate that the COCs (arsenic, chromium and lead) were detected at low concentrations in all of the borings. The detected concentrations were compared to the MTCA Method A Cleanup Levels and the background levels for Clark County. The results indicate the concentrations detected are below the natural background levels.

The laboratory results for the groundwater samples indicate that the only one sample (MW-3, July 24, 2017) had a detected concentration of chromium above the laboratory reporting limit. The detected concentration is well below MTCA Method A Cleanup Levels. The laboratory results for all other samples did not detect COCs above the laboratory reporting limits. The laboratory reporting limits were noted to be below respective cleanup levels.

Comparison of Groundwater Results

At the direction of the Ecology manager, Alpha installed MW-4 in the same location as the temporary well B3-GWS1 placed in 2013. The well location is between the drain field laterals approximately 27 feet south of the former septic tank. The detection of chromium in sample B3-GWS1 is 240 ppb and was sampled from a temporary well the same day it was installed. The result for sample MW-4 is U < 1.00 ppb and sampled from a monitoring well approximately two weeks after installation. As discussed above, it is Alpha's opinion that turbid conditions likely existed during the initial groundwater sample collection and resulted in the detected concentrations for metals to be artificially high.

Groundwater Flow Direction and Well Zone of Influence

Based on the groundwater measurements from the monitoring well sampling events, the shallow groundwater beneath the site is flowing in a general northwest direction.

The City of Vancouver Water Station 7 is located approximately 3,100 feet southeast of the Property in upgradient groundwater flow direction. The Clark County Wellhead Protection Zones Comprehensive Plan indicates the Property is outside the zone of influence from the Water Station.

Site characterization and Delineation

In accordance with WAC 173-340-350, the site has been adequately characterized for the COCs. Alpha has collected sufficient soil and groundwater samples to adequately characterize the possible distribution of heavy metals present at the site.

Conclusions

The soil and groundwater cleanup levels have been established at the site using MTCA Method A Cleanup Levels.

Risk Evaluation

For soil, the risk evaluation was based on the protection of human health from direct contact with the soil and soil-to-groundwater pathways. The data collected during the investigation demonstrates that no adverse effects are likely occurring and the COCs are either below cleanup levels or expected background concentrations.

For groundwater, the risk evaluation was based on protection of human health from ingesting drinking water, assuming extraction from municipal supply wells. At this time, there is no existing or identified potential groundwater risk as the COCs were not detected above cleanup levels.

Based on the analytical results of representative samples, compliance with the soil and groundwater cleanup levels has been achieved.

The site meets the cleanup requirements established in WAC 173-340-360, as the potential source of the release has been removed and the COCs are below either the cleanup levels or expected background levels. The onsite soils and groundwater are protective of human health and the environment.

Recommendations

Alpha does not recommend further assessment of the Property at this time.

Based on the results on the investigation, Alpha requests that the DOE issue a No Further Action (NFA) determination for the site. The site meets the cleanup requirements established in WAC 173-340-360 and the onsite soils and groundwater are protective of human health and the environment.

1.0 INTRODUCTION

Alpha Environmental Services (Alpha) completed a Remedial Investigation (RI) report for the property located at 2616 NE 112th Avenue, Vancouver, Washington (the Property). The report was prepared in general accordance with the requirements defined by the Model Toxics Control Act (MTCA) Regulation (Washington Administrative Code [WAC] 173-340-350) for submittal to the DOE. The purpose of this RI was to collect and evaluate sufficient soil and groundwater data to determine if the site meets the cleanup criteria for unrestricted land use pursuant to MTCA.

The site has had a long history as a dental office and during a routine septic inspection, a crack was discovered in the septic tank. The DOE collected samples of the tank sludge and the analytical results showed high levels of mercury, silver, copper and zinc. The Clark County Public Health (CCPH) department issued a Notice of Violation and required the decommissioning of the septic system and connection to the sanitary sewer. Soil and groundwater sampling was conducted under the direction of the CCPH and based on the initial analytical results, there is a possibility that heavy metals may have seeped from the former septic system and impacted the subsurface soils and groundwater. This report summarizes the current scope of work, field investigation activities and laboratory analyses, and provides conclusions and recommendations.

1.1 Site Information

Site Name – Today's Family Dentistry

Potentially Liable Persons – J. Blake Perkins

Current Owner – J. Blake Perkins

Previous Owner – Steven J Sorenson, DDS (sold March 8, 2004)

Consultant – Alpha Environmental Services, Jim Cooper, L.G.

Ecology Site Manager – Tim Mullin

Cleanup Site ID – 11461

Facility/Site ID – 10775

VCP Project ID – SW1581

1.2 Site Description

The Property is located at 2616 NE 112th Avenue, Vancouver, Clark County, Washington. The Property identification numbers are 162643000, located in Southeast quarter of Township 2 North, Range 2 East, Section 21, Willamette Meridian. The Property and vicinity are depicted in Figures 1 and 2.

The Property parcel consists of a rectangular-shaped lot approximately 0.82 acre in size. The Property is zoned Community Commercial (CC) and is occupied by one commercial building. The proposed future use will be retail or service business.

The Property is relatively flat and at an approximate elevation of 212 feet above mean sea level. The vicinity of the Property can generally be described as commercial and residential. Current usage of the adjoining properties includes: north – ARCO station and small strip mall with NE Burton Road beyond; south – residential dwellings; east – NE 112th Avenue with a Safeway Shopping Center beyond; and west – residential development.

1.3 Project Background

The site was vacant until the 1950s when a rural residential dwelling was constructed. The residential dwelling was removed in the early 1980s and the current commercial building was constructed in 1983. The Property appears to have been used for a dental office since it was built.

The source of potential contamination was heavy metals released from the onsite septic system. The releases may have occurred between 1983 and 2004 when the Property was occupied by Steven Sorenson. Little is known about his use of filters or traps to limit the deposition of metals in the water that could enter the septic system.

On March 8, 2004, the Property was acquired by J. Blake Perkins. In an email to the DOE, dated March 10, 2010, Mr. Perkins indicated that from the time of his occupancy, his x-rays were developed in an enclosed system, recovered metals were recycled through a hazardous waste company, and their practice used chairside large particle traps and smaller particulate traps at the vacuum pumps. They had also installed an amalgam separator (Model DRNA BU-10) to screen ultrafine particles.

Since April 2017, the Property is vacant and is involved in a pending property transaction.

1.4 Drinking Water Wells

The City of Vancouver Water Station 7 is located approximately 3,100 feet southeast of the Property in an relative upgradient groundwater direction. Based on the information available from the DOE well report search, two wells (Well Report ID 239007 and 239012) are located at the water station. According to the well logs, both of the wells screened intervals start below 800 feet below ground surface and have a total depth of greater than 1,000 feet (Carollo, 2015).

The Clark County Wellhead Protection Zones Comprehensive Plan (Figure 7) indicates the Property is just outside the zone of influence from Water Station 7 (Clark County, 2016). Based on the monitoring well data collected, the shallow groundwater beneath the site flows to the northwest.

1.5 Report Organization

Section 2.0 of this report describes the septic tank, sewer connection, previous soil and groundwater sampling, site characterization, and groundwater disturbance and bias. Section 3.0 describes the preliminary field work, well placement rationale and installation details, well level measurement, drilling and sampling activities, soil boring details, field and sample quality control, groundwater sampling methods and investigation derived waste. Section 4.0. describes sample results evaluation and cleanup standards, soil findings, groundwater findings, conceptual site model risk summary and terrestrial ecological evaluation. Section 5.0 describes the findings, conclusions and recommendations. Section 6.0 has signatures of environmental professionals. Section 7.0 presents the references. Section 8.0 presents the acronyms found in the report.

2.0 PREVIOUS SITE WORK

2.1 Septic Tank

The septic system was inspected on August 13, 2009, and a crack was discovered in the septic tank. The DOE collected samples of the tank sludge on February 18, 2010 to profile for waste designation. The analytical results showed high levels of mercury, silver, copper and zinc in the septic sludge. On March 19, 2010, the CCPH department issued a Notice of Violation and required the decommissioning of the septic system and connection to the sanitary sewer. On April 21, 2010, the DOE conducted a follow-up site visit and confirmed the pumping of the sludge with eventual disposal with Waste Watch, Inc., and the removal of the septic tank. Based on the high concentrations of heavy metals detected in the sludge, the DOE determined there may be a potential impact to soil and groundwater. The site was added to the DOE's list of suspected and confirmed sites. The analytical results of the septic tank sludge are presented below in Table 1.

Table 1 – Septic Tank Sludge Sample Analytical Results

	Sludge
Location	Sampled from Septic Tank Interior
EPA Method 6020 - Metals	
	Result mg/kg
Arsenic	5.38
Barium	372
Cadmium	U < 4.76
Chromium	28.1
Copper	3,210
Lead	107
Mercury	4,410
Nickel	35.4
Selenium	U < 4.76
Silver	6,940
Zinc	2,330

ND = Analyte Not Detected at or above laboratory reporting limit.
mg/kg = milligram per kilogram or parts per million (ppm)

2.2 Sewer Connection

The following information was obtained from the Clark County Building Permit History and documents the sewer connection to the municipal system.

Permit	Type	Name	Date	Status
PLB2010-00131	Mechanical,Plumbing,Electrical	Pacific Star Excavating, Inc	04/06/2010	Closed
RUS2009-00100	Prelim Information Request	Justin Perkins	1/03/2009	Closed
ROW2010-00087	Right of Way Permit	Pacific Star Excavating, Inc	04/06/2010	Closed
SWC2010-00067	Sewer Connection	Justin Perkins	03/29/2010	Closed

2.3 Previous Soil and Groundwater Sampling

On February 14, 2013, soil and groundwater sampling was conducted at the site under the direction of the CCPH. All samples were analyzed for Priority Pollutant Metals. The summarized soil results are presented below in Table 2 and the groundwater results in Table 3. A footnote in the Site Hazard Assessment worksheet indicates "subsurface soils were very poor for the collection and analysis of chemical constituents".

Table 2 –Previous Soil Sample Analytical Results

Boring	Sample ID	Depth	Arsenic	Chromium	Copper	Lead	Silver	Mercury	Zinc
EPA Method 6020 - Metals									
		Feet	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg
B1	B1-SS1	9.5	5.9	18	37	5.2	*2.1*	*U < 0.11*	74
	B1-SS2	13.0	2.9	17	35	4.7	*U < 1.1*	*U < 0.096*	73
B2	B2-SS1	4.5	3.5	**28**	65	8.5	12	0.47	110
	B2-SS2	8.0	2.6	17	31	5.3	2.2	0.13	88
	B2-SS3	13.0	2.8	16	27	4.1	U < 1.1	U < 0.11	67
B3	B3-SS1	7.0	2.8	24	37	5.5	U < 1.2	U < 0.11	84
	B3-SS2	10.5	4.1	**31**	45	6.2	U < 1.4	U < 0.14	84
	B3-SS3	15.5	5.0	23	40	5.3	U < 1.2	U < 0.10	78
B4	B4-SS1	7.0	1.9	18	30	4.1	U < 1.1	U < 0.11	62
	B4-SS2	10.5	2.2	14	28	5.0	U < 1.2	U < 0.11	86
	B4-SS3	15.5	3.6	20	34	5.2	U < 1.2	U < 0.11	81
MTCA Method A Cleanup Levels (mg/kg)			20	19	-	250	-	2.0	-
MTCA Method B Cleanup Levels (mg/kg)			-	-	3,200	-	400	-	24,000
Natural Background Concentrations – Clark Co			6	27	34	17	-	0.04	96

mg/kg = milligram per kilogram or parts per million (ppm)
Bold Type indicates the analyte exceeds both cleanup level and background level.

Table 3 – Previous Groundwater Sample Analytical Results

Boring	Sample ID	Approx. Depth	Arsenic	Chromium	Copper	Lead	Silver	Mercury	Zinc
EPA Method 200.8 - Metals									
		Feet	Result µg/L	Result µg/L	Result µg/L	Result µg/L	Result µg/L	Result µg/L	Result µg/L
B1	B1-GWS1	13.5	**19**	**86**	120	**23**	*5.5*	*0.98*	190
B2	B2-GWS1	13.5	**6.4**	30	48	7.9	*1.8*	*0.21*	83
B3	B3-GWS1	18.5	**42**	**240**	330	**60**	*1.8*	*1.3*	530
B4	B4-GWS1	18.5	**21**	**100**	160	**26**	*U < 1.0*	*0.23*	240
MTCA Method A Cleanup Level (µg/L)			5	50	-	15	-	2.0	-
MTCA Method B Cleanup Level (µg/L)			-	-	640	-	80	-	4,800
EPA Drinking Water Standards			10	100	1,300	15	-	2.0	-

µg/L = microgram per kilogram or parts per billion (ppb)
Bold Type indicates the analyte exceeds cleanup level.

2.4 Site Characterization

The sludge analyzed from the interior of the septic tank contained elevated levels of copper, mercury, silver and zinc. It was anticipated that the soil and groundwater samples analyzed in the vicinity of the former septic tank and leach lines would also have elevated levels of these heavy metals. This was not the case. The detected concentrations of these substances in the soil and groundwater samples were well below MTCA Method A Cleanup Levels. Based on these results, copper, mercury, silver and zinc are not considered Contaminants of Concern (COC) in the soil and groundwater for the site. Even though these are not considered COCs, all sample analysis included these constituents.

The only metal that was detected in the previous sampling, above cleanup and natural background levels in the soils, was chromium. Two of the samples B2-SS1 (28 ppm) and B3-SS2 (31 ppm) contained concentrations slightly elevated above the natural background level of 27 ppm (Ecology, 1994).

The only heavy metals detected in the groundwater that had concentrations above cleanup levels were arsenic, chromium and lead. Observations regarding the elevated detections are discussed further in Section 2.5.

Based on the previous sampling discussed above, the site COCs include arsenic, chromium and lead. None of these metals were found at significantly elevated levels inside the septic sludge.

2.5 Groundwater Sample Disturbance

As is commonly done with initial site investigations, the CCPH groundwater samples were collected shortly after installation of the temporary wells. The disturbance of the subsurface environment during the temporary well construction and sampling procedures may have adversely affected the quality of the initial sampling results.

It is well documented (EPA, 1989) that some degree of disturbance of natural conditions is inevitable during drilling and sufficient time should be given between the installation of wells and groundwater sampling. In most cases, well installation (temporary or permanent) procedures disturb the existing aquifer conditions and can result in increased turbidity. Constituents such as metals have a propensity for attaching themselves to suspended solids and these particulates can create analytical results that misrepresent the actual groundwater conditions. Alpha discussed the installation and sampling of the new monitoring wells for this site with Ecology, who recommended waiting a minimum of two weeks for the wells to stabilize prior to sampling.

It is Alpha's opinion that unfavorable conditions existed during the initial groundwater sample collection and the high results were an artifact of the well installation. Observations for this opinion include the timing of the groundwater sampling and the detected soil concentrations (roughly background levels) do not correlate to the elevated groundwater concentrations, unless turbidity was a factor. Additionally, the suspected source (the septic tank sludge) did not contain significantly elevated levels of arsenic, chromium or lead.

3.0 FIELD AND SAMPLING PROCEDURES

3.1 Preliminary Field Work

Prior to installing the monitoring wells, Alpha filed a public utility locate request with One Call Washington and utilities were marked by respective utility companies where they entered the Property.

3.2 Well Placement Rationale and Installation Details

The wells were placed to assess the groundwater conditions and help delineate the groundwater flow direction. On July 7, 2017, monitoring well MW-1 was placed along the south edge of the property, MW-2 was placed in the parking lot east of the former septic and MW-3 was placed just west of the former septic tank. On October 11, 2017, monitoring well MW-4 was placed in the center of the former septic drain field in the approximate location of Boring B3 (from drilling event conducted by Clark County Public Health on February 14, 2013).

All of the monitoring wells were installed by Cascade Drilling, using a direct-push drilling rig. Materials encountered during drilling were logged under the direction of a licensed geologist who supervised the construction of the monitoring wells. Monitoring wells are constructed of 2-inch schedule-40 PVC threaded casing. The 10-foot screened interval in each of the wells is constructed with two 5-foot pre-packed well screens consisting of 0.010-inch slotted PVC and an end cap on the bottom screen. The area just above the pre-packed screen was filled #10-20 silica sand and bentonite pellets to construct the seal to just below surface grade. Monitoring wells were completed with aboveground lockable steel security casings and surrounded by concrete.

3.3 Well Level Measurement

The elevation at the top of the well casing of each monitoring wells was surveyed by Minister-Glaeser Surveying, Inc. on August 17, 2017 and January 20, 2018 (Appendix D). Water levels were measured in MW-1, MW-2 and MW-3 were measured on July 24, 2017 and the water levels measured in all four wells on October 31, 2017. Depth to water was measured to the nearest 0.01 foot using an electric water level indicator. Groundwater elevations at monitoring wells were calculated by subtracting the measured depth to water from surveyed measuring point elevations. Table 4 presents the depth-to-water and water level elevations measured during these two monitoring periods, and field records are included in Appendix C.

Table 4 –Groundwater Measurement and Levels

	MW1	***MW2***	***MW3***	***MW4***
Well Elevation (Top of Casing)	211.14	207.63	211.56	206.83
DATE:	Measured Water Level Below Top of Casing (ft)			
7/27/17	8.67	8.86	11.16	-
10/31/17	8.42	8.16	10.61	6.34
DATE:	Static Water Level (ft)			
7/24/17	202.47	198.77	200.40	-
10/31/17	202.72	199.47	200.95	200.49

3.4 Drilling and Soil Sampling Activities

Field investigation, drilling and sampling activities were conducted under the supervision of Mr. Jim Cooper, senior geologist for Alpha.

The subsurface soil assessment consisted of sampling three of the four soil borings advanced by Cascade Drilling with a GeoProbe direct-push drill rig. The DOE project manager indicated that no soil sample collection was recommended for MW-4 during well installation.

The borings were advanced and sampled in 5-foot intervals to approximately 20 feet below surface grade (bsg). Soil samples were collected using a single-use thin-walled polyethylene tube inserted inside a stainless-steel sampling tube. In between each boring, the push probe sampler, the outer tubing and inner sampling rods were decontaminated.

Soil lithology was observed and logged by slicing the disposable sample tube along the longitudinal axis. The soil samples were placed in laboratory-provided glass jars, capped with Teflon®-lined lids and placed in a cooler on ice. The soil samples were shipped to Apex Laboratory in Tigard, Oregon under chain-of-custody protocol and analyzed by test EPA Test Method 6020 – heavy metals.

3.5 Soil Boring Details

The soil lithology generally consists of silty sand and fine to medium grained sand with occasional gravel lenses extending down to the bottom depth of the boreholes. Very moist to wet soils were noted in the borings between 10 and 15 feet below ground surface. Complete boring logs can be found in Appendix A.

3.6 Field and Sample Quality Control

Site activities were conducted by Alpha personnel that followed the site-specific health and safety operating procedures. Prior to beginning field work, a safety meeting was held to ensure Alpha personnel and subcontractors understood health and safety protocol associated with the project. The borehole logging, soil sampling and quality controls were performed under the supervision of Mr. Jim Cooper, a Washington Licensed Geologist.

Sample containers were labeled with the project name and number, the time of sampling, sampler's initials, sample designation and date. Containers were placed upright in the coolers and cushioned by foam inserts and/or bubble wrap. Ice packets and/or loose ice were placed around and on top of the sample containers. The cooler was sealed at the site and transported to Alpha's office pending transport to the laboratory. A representative of Alpha delivered the coolers to Apex Laboratories in Tigard, Oregon. Delivery occurred within 24 hours of sampling and samples were kept on ice during storage and transport.

Samples were handled under chain-of-custody protocol in which the custody form was signed and dated by the Alpha personnel. Upon receipt of the cooler, personnel at Apex Laboratories examined and recorded the condition of the sample containers, signed the custody form, and transferred the samples to their refrigerators. A completed copy of the chain-of-custody form is included at the end of the laboratory analytical report (Appendix B).

3.7 Groundwater Sampling Methods

As directed by the Ecology project manager, wells were allowed to stabilize a minimum of two weeks after installation. After sufficient time had elapsed, wells were purged and samples were collected using a peristaltic pump. The sample tubing was dedicated to each specific well to prevent cross contamination. Field parameters (volume purged, water depth, pH, conductivity, temperature, total dissolved solids, and oxidation-

reduction potential [ORP]) were measured using a flow through cell and recorded throughout the purging process. Water levels and field parameters were recorded on the Groundwater Sampling Form for each location sampled. The field documents are provided in Appendix C. The wells were purged and sampled using low-flow/minimal drawdown methodology (EPA, 2017). The monitoring wells were purged of approximately three well volumes of water and water in the wells was stabilized.

The groundwater flow direction and hydraulic gradient was calculated for each sampling event. The first sampling event (7/27/17) had a hydraulic gradient of 0.026 and the second sampling event (10/31/17) had a hydraulic gradient of 0.023. Both events showed groundwater flowing in a northwest direction.

3.8 Investigation Derived Waste

The investigation derived waste (IDW) for the project consisted of soil from drill cuttings, purge water from groundwater wells, decontamination water and disposable personal protective equipment (PPE). The soil, purge water and decontamination water were stored onsite in 55-gallons drums pending laboratory analysis. Disposable sampling and health and safety equipment was discarded in appropriate waste dumpsters. The disposal of the IDW was done in direction with EPA guidelines (EPA, 2014).

The laboratory results indicate the soil IDW contained concentrations below natural background levels and does not require offsite disposal as it is protective of human health and the environment. Soil IDW was spread and mixed with existing landscape soils on the Property.

The laboratory results indicate the groundwater IDW contained concentrations below MTCA Method A Cleanup Levels and EPA drinking water standards and does not require offsite disposal as it is protective of human health and the environment. Decontamination water consisted of potable water and Alconox. Groundwater purge water and decontamination water was poured on the ground near the point of generation.

4.0 SAMPLE ANALYTICAL RESULTS

4.1 Sample Results Evaluation and Cleanup Standards

In order to evaluate the current and future risks at the site, Alpha compared the data from the previous and current investigation to the Washington Administrative Code (WAC) MTCA Method A Cleanup Levels. For the previous sampling, MTCA Method B Cleanup Levels were used for metals that did not have Method A levels established. The cleanup standards selected consist of cleanup levels that are protective of human health and the environment. In accordance with MTCA guidelines, the selection of preliminary cleanup levels includes identifying potential exposure pathways and transportation mechanisms. Preliminary cleanup levels are given in the respective tables below.

4.2 Soil Findings

The laboratory results for the samples indicate that the COCs were detected at low concentrations in all of the borings. The detected concentrations were compared to the MTCA Method A Cleanup Levels and the Washington natural background levels for Clark County. The results indicate the concentrations detected in the soil are either below the cleanup levels or the natural background levels. Complete laboratory results can be found in Appendix B.

The DOE project manager Tim Mullin indicated that no soil sample collection was recommended for MW-4 during well installation.

Table 5 –Soil Sample Analytical Results (July 7, 2017)

Boring	Sample ID	Depth	Arsenic	Chromium	Lead
EPA Method 6020 - Metals					
		Feet	**Result** mg/kg	**Result** mg/kg	**Result** mg/kg
B1 (MW-1)	B1@13’	13.0	1.96	15.1	5.11
	B1@18’	18.0	2.55	16.8	4.39
B2 (MW-2)	B2@9’	9.0	3.47	22.7	6.92
	B2@17’	17.0	1.97	11.6	3.34
B3 (MW-3)	B3@15’	15.0	1.22	9.42	4.39
	B3@19’	19.0	3.63	20.9	6.82
MTCA Method A Cleanup Level (mg/kg)			*20*	*19*	*250*
Natural Background Concentrations – Clark Co			*6*	*27*	*17*

ND = Analyte Not Detected at or above laboratory reporting limit.
mg/kg = milligram per kilogram or parts per million (ppm)

4.3 Groundwater Findings

<u>July 24, 2107</u>

The laboratory results for the groundwater samples indicate that the only COC detected above the laboratory reporting limit for total metals was chromium. The detected concentration is well below MTCA Method A Cleanup Levels. The laboratory results for the dissolved samples did not detect COCs above the laboratory reporting limits.

<u>October 31, 2107</u>

The laboratory results for the samples did not detect COCs above the laboratory reporting limits. Complete laboratory results can be found in Appendix B.

Table 6a – Groundwater Sample Analytical Results – Total Metals (July 24, 2017)

Boring	Sample ID	Approx. Depth	Arsenic	Chromium	Lead
EPA Method 6020 - Metals					
		Feet	**Result** µg/L	**Result** µg/L	**Result** µg/L
MW-1	17-16167 MW-1	18	U < 1.00	U < 1.00	U < 0.200
MW-2	17-16167 MW-2	18	U < 1.00	U < 1.00	U < 0.200
MW-3	17-16167 MW-3	18	U < 1.00	**1.29**	U < 0.200
MTCA Method A Cleanup Level (µg/L)			*5*	*50*	*15*

µg/L = microgram per kilogram or parts per billion (ppb)
Bold Type indicates the analyte exceeds laboratory reporting limit

Table 6b – Groundwater Sample Analytical Results - Dissolved Metals (July 24, 2017)

Boring	Sample ID	Approx. Depth	Arsenic	Chromium	Lead
EPA Method 6020 - Metals					
		Feet	**Result** µg/L	**Result** µg/L	**Result** µg/L
MW-1	17-16167 MW-1	18	U < 1.00	U < 1.00	U < 0.200
MW-2	17-16167 MW-2	18	U < 1.00	U < 1.00	U < 0.200
MW-3	17-16167 MW-3	18	U < 1.00	U < 1.00	U < 0.200
MTCA Method A Cleanup Level (µg/L)			*5*	*50*	*15*

µg/L = microgram per kilogram or parts per billion (ppb)

Table 7 – Groundwater Sample Analytical Results – Total Metals (October 31, 2017)

Boring	Sample ID	Approx. Depth	Arsenic	Chromium	Lead
EPA Method 6020 - Metals					
		Feet	**Result** µg/L	**Result** µg/L	**Result** µg/L
MW-1	17-16167 MW-1	18	U < 1.00	U < 1.00	U < 0.200
MW-2	17-16167 MW-2	18	U < 1.00	U < 1.00	U < 0.200
MW-3	17-16167 MW-3	18	U < 1.00	U < 1.00	U < 0.200
MW-4	17-16167 MW-4	18	U < 1.00	U < 1.00	U < 0.200
MTCA Method A Cleanup Level (µg/L)			*5*	*50*	*15*

µg/L = microgram per kilogram or parts per billion (ppb)

4.3 Conceptual Site Model Risk Summary

The Conceptual Site Model (CSM) summary below was derived from the CSM schematic (Figure 6). The CSM is designed to provide a depiction of relevant site features and the surface/subsurface conditions. The model helps to define the transport mechanisms, exposure pathways and the risk the COCs may pose to potential receptors.

Table 8 - Conceptual Site Model Risk Table

Potentially Exposed Population	Exposure Route, Medium and Exposure Point	Pathway Selected?	Risk from This Pathway?	Reason for Selection or Exclusion
SOURCE: **SEPTIC TANK;** CURRENT AND FUTURE LAND USE: **COMMERCIAL;** IMPACTED MEDIUM: **SOIL**				
Adults (Occupational)	Soil Ingestion, Dermal Absorption or Inhalation from on-site soils above 15 feet	Yes	**No**	The pathway is complete for occupational; however, detected concentrations are below cleanup levels and/or background levels.
Adults (Construction Workers)	Soil Ingestion, Dermal Absorption or Inhalation from on-site soils below 15 feet	Yes	**No**	The pathway is complete; however, detected concentrations are below cleanup and/or background levels and work is not anticipated.
Adults (Occupational)	Volatilization to Outdoor Air	No	**No**	The COCs are non-volatile.
Adults (Occupational)	Vapor Intrusion into Buildings	No	**No**	The COCs are non-volatile.
Adults (Occupational & Residential)	Soil Leaching to Groundwater	Yes	**No**	Local groundwater is used for domestic drinking water purposes; however, COCs were not detected in soil samples above background levels.
SOURCE: **SEPTIC TANK;** CURRENT AND FUTURE LAND USE: **COMMERCIAL;** IMPACTED MEDIUM: **GROUNDWATER**				
Adults (Occupational and Residential)	Ingestion & Inhalation from Tapwater	Yes	**No**	Local groundwater is used for domestic drinking water purposes; however, COCs were not detected in groundwater samples above cleanup levels.
Adults (Occupational)	Volatilization to Outdoor Air	No	**No**	The COCs are non-volatile.
Adults (Occupational)	Vapor Intrusion into Buildings	No	**No**	The COCs are non-volatile.
Construction Workers	Groundwater encountered during excavation activities, dermal contact	Yes	**No**	The pathway is complete; however, detected concentrations are below the cleanup levels and work is not anticipated.

4.3 Terrestrial Ecological Evaluation

A Terrestrial Ecological Evaluation (TEE) was conducted for the Property. The Site qualifies for an exclusion from further evaluation because detected concentrations of hazardous substances in soil from this investigation do not exceed natural background levels. The completed TEE evaluation form can be found in Appendix E.

5.0 FINDINGS, CONCLUSION AND RECOMMENDATIONS

Alpha has conducted a Remedial Investigation at the Property located at 2611 NE 112th Avenue, Vancouver, Washington. The assessment was performed in accordance with the agreed-upon scope of services between Alpha and Mr. Perkins. The assessment followed the standard practice for conducting remedial investigations under MTCA guidelines. Based on the evaluation of the current findings of this assessment, the following findings, conclusions and recommendations have been developed.

5.1 Findings

Septic Tank

The initial laboratory testing of the septic tank showed high levels of mercury, silver, copper and zinc in the septic sludge. Since the septic tank was found to be cracked and contained elevated levels of these metals, it was anticipated that the samples of soil and groundwater samples collected near the former tank and leach lines, would likewise have elevated levels. This was not the case and as the laboratory results for the CCPH samples had detected concentrations of these substances in soil and groundwater well below cleanup levels. Based on these results, copper, mercury, silver and zinc were ruled out as COCs for the site.

CCPH Initial Soil and Groundwater Sample Results

The only metal from the initial CCPH soil sampling that had detected concentrations above cleanup and natural background levels was chromium. Two of the samples, B2-SS1 (28 ppm) and B3-SS2 (31 ppm), contained slightly elevated concentrations above the natural background level of 27 ppm. A footnote in the Site Hazard Assessment worksheet indicates "subsurface soils were very poor for the collection and analysis of chemical constituents".

Heavy metals detected in the groundwater that had concentrations above cleanup levels were arsenic, chromium and lead. The disturbance of the subsurface environment during the temporary well construction and sampling procedures appears to have adversely affected the quality of the initial sampling results. It is Alpha's opinion that unfavorable conditions existed during the initial groundwater sample collection and the high results were an artifact of the well installation.

Therefore, based on the evaluation of the sample methodology and results, the apparent contamination identified above, may not be reliable for risk evaluation. The hazard ranking score was based entirely on these initial results and caused the site to receive a ranking of 2. If the site were reevaluated using the current sample data that did not exceed cleanup levels, the site would not be ranked and considered a risk.

It may not have significantly affected the sample quality; however, it also should be noted that according to the Test America sample log sheet, the initial samples were received with a cooler temperature outside required temperature criteria. The client was contacted at that time regarding this issue.

Current Soil and Groundwater Sample Results

The laboratory results for the soil samples indicate that the COCs (arsenic, chromium and lead) were detected at low concentrations in all of the borings. The detected concentrations were compared to the MTCA Method A Cleanup Levels and the background levels for Clark County. The results indicate the concentrations detected are below the natural background levels.

The laboratory results for the groundwater samples indicate that the only one sample (MW-3, July 24, 2017) had a detected concentration of chromium above the laboratory reporting limit. The detected concentration is well below MTCA Method A Cleanup Levels. The laboratory results for all other samples did not detect COCs above the laboratory reporting limits. The laboratory reporting limits were noted to be below respective cleanup levels.

Comparison of Groundwater Results

At the direction of the Ecology manager, Alpha installed MW-4 in the same location as the temporary well B3-GWS1 placed in 2013. The well location is between the drain field laterals approximately 27 feet south of the former septic tank. The detection of chromium in sample B3-GWS1 is 240 ppb and was sampled from a temporary well the same day it was installed. The result for sample MW-4 is U < 1.00 ppb and sampled from a monitoring well approximately two weeks after installation. As discussed above, it is Alpha's opinion that turbid conditions likely existed during the initial groundwater sample collection and resulted in the detected concentrations for metals to be artificially high.

Groundwater Flow Direction and Well Zone of Influence

Based on the groundwater measurements from the monitoring well sampling events, the shallow groundwater beneath the site is flowing in a general northwest direction.

The City of Vancouver Water Station 7 is located approximately 3,100 feet southeast of the Property in upgradient groundwater flow direction. The Clark County Wellhead Protection Zones Comprehensive Plan indicates the Property is outside the zone of influence from the Water Station.

Site characterization and Delineation

In accordance with WAC 173-340-350, the site has been adequately characterized for the COCs. Alpha has collected sufficient soil and groundwater samples to adequately characterize the possible distribution of heavy metals present at the site.

5.2 Conclusions

The soil and groundwater cleanup levels have been established at the site using MTCA Method A Cleanup Levels.

Risk Evaluation

For soil, the risk evaluation was based on the protection of human health from direct contact with the soil and soil-to-groundwater pathways. The data collected during the investigation demonstrates that no adverse effects are likely occurring and the COCs are either below cleanup levels or expected background concentrations.

For groundwater, the risk evaluation was based on protection of human health from ingesting drinking water, assuming extraction from municipal supply wells. At this time, there is no existing or identified potential groundwater risk as the COCs were not detected above cleanup levels.

Based on the analytical results of representative samples, compliance with the soil and groundwater cleanup levels has been achieved.

The site meets the cleanup requirements established in WAC 173-340-360 as the potential source of the release has been removed and the COCs are below either the cleanup levels or expected background levels. The onsite soils and groundwater are protective of human health and the environment.

5.3 Recommendations

Alpha does not recommend further assessment of the Property at this time.

Based on the results on the investigation, Alpha requests that the DOE issue a No Further Action (NFA) determination for the site. The site meets the cleanup requirements established in WAC 173-340-360 and the onsite soils and groundwater are protective of human health and the environment.

6.0 SIGNATURES OF ENVIROMENTAL PROFESSIONALS

Alpha is providing the client with the results of our RI for the Property located at 2616 NE 112th Avenue, Vancouver, Oregon. Alpha completed the investigation of the Property in a professional manner according with generally accepted engineering practices, using the degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances and in general conformance with the scope and limitations of the WAC.

The environmental consultants listed below exercised professional judgment based on knowledge of the manner in which releases commonly occur in connection with commercial or industrial activities and operations similar to those currently or historically conducted on or adjacent to the Property.

The consultants also possess applicable education, professional training, licensing and relevant experience to conduct the environmental investigation and other activities in accordance with the relevant standards and to develop opinions and conclusions regarding target analytes in the environmental media.

Alpha appreciates the opportunity to provide environmental services to you. If you have any questions concerning this report, or if we can assist you in any other matter, please contact our office at 503-292-5346.

Jim Cooper, R.G.
Senior Geologist

State of Washington
2701
Licensed Geologist
JIM L. COOPER
Expires 5/6/18

Phillip Brewer
Principal

ALPHA ENVIRONMENTAL SERVICES, INC.

7.0 REFERENCES

Carollo. 2015. Comprehensive Water System Plan (Draft Report), Prepared for the City of Vancouver, Project Number 9290A00. June 2015

Clark County. 2016. *Wellhead Protection Zones – Comprehensive Plan*, Clark County Geographic Information System, Figure 6, 2016.

Ecology. 1994. *Natural Background Soil Metals Concentrations in Washington State*. Ecology Publication #94-115. Washington Department of Ecology. October 1994.

Ecology. 2013. *The Model Toxics Control Act Cleanup Regulation and Statute*, Chapter 173-340 WAC. Publication Number 94-06, Washington State Department of Ecology. Revised 2013.

United States Environmental Protection Agency. 1989. *Superfund Ground Water Issue, Ground Water Sampling for Metals Analyses, Publication Number 540/4-89/001, March 1989.*

United States Environmental Protection Agency. 2009. *National Primary Drinking Water Regulation Table*, Publication Number 816-F-09-004, May 2009.

United States Environmental Protection Agency. 2014. *Management of Investigation Derived Waste*, Publication Number SESDPROC-202-R3, July 3, 2014.

United States Environmental Protection Agency. 2017. *Low Stress (low flow) Purging and Sampling for the Collection of Groundwater Samples from Monitoring Wells*, Publication Number EQASOP-GW4, Revised September 19, 2017.

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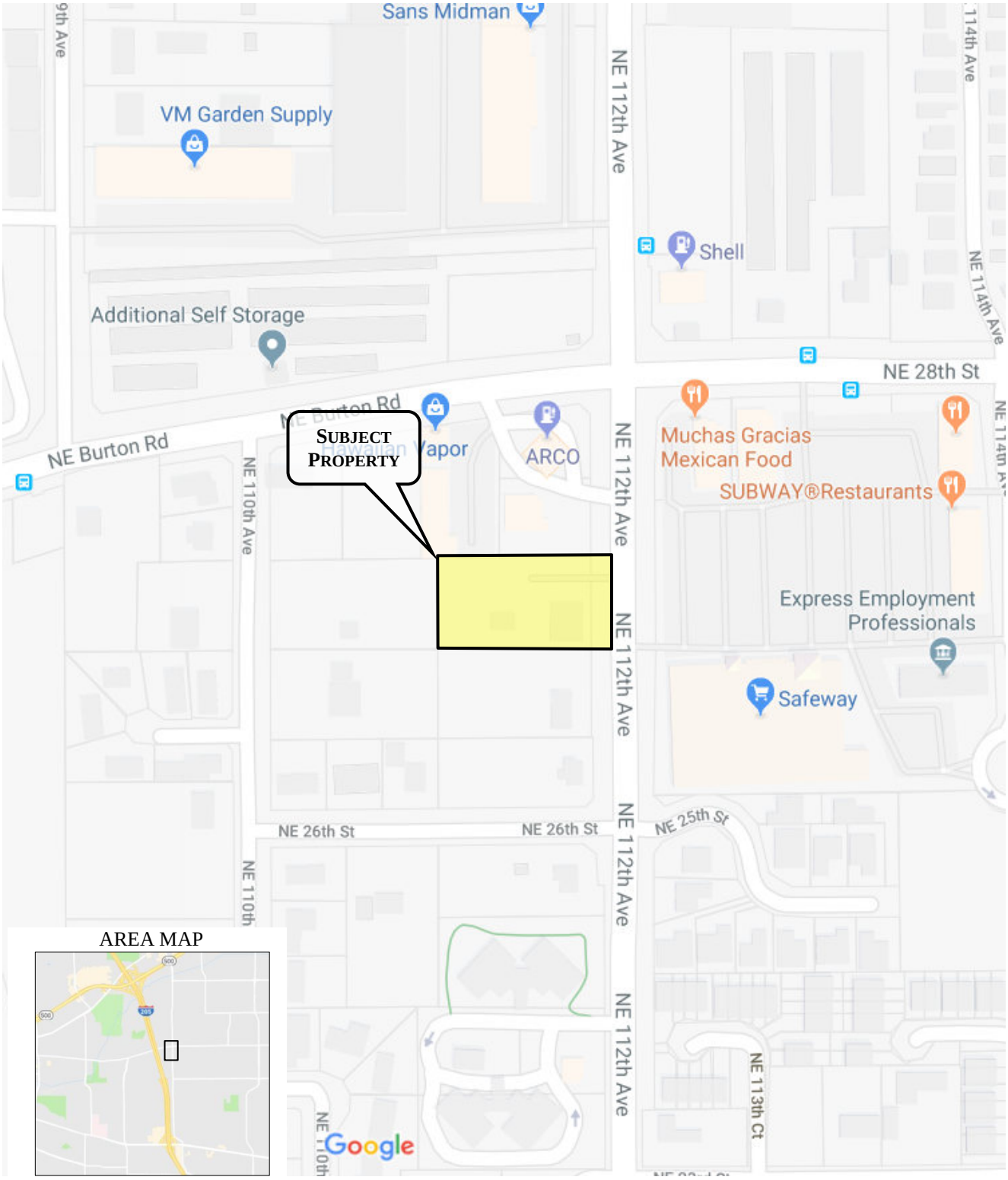
8.0 ACRONYMS

µg/L	microgram per liter
bsg	below surface grade
CCPH	Clark County Public Health
COC	Contaminant of Concern
DOE	Washington State Department of Ecology
EPA	Environmental Protection Agency
Ecology	Washington State Department of Ecology
Ft	feet
IDW	Investigation Derived Waste
mg/kg	milligram per kilogram
MTCA	Model Toxics Control Act
MW	Monitoring Well
ND	Not Detected At or Above Laboratory Reporting Limits
ORP	Oxidation Reduction Potential
PVC	Poly Vinyl Chloride
ppb	parts per billion
ppm	parts per million
RCRA	Resource Conservation & Recovery Act
TEE	Terrestrial Ecological Evaluation
WAC	Washington Administrative Code

FIGURES:

SITE VICINITY MAP
TOPOGRAPHIC MAP
SITE PLAN
3rd QUARTER GROUNDWATER
4th QUARTER GROUNDWATER
CONCEPTUAL SITE MODEL SCHEMATIC
WELLHEAD PROTECTION AREA



SOURCE: Google Maps

DRAWING NOT TO SCALE

Alpha environmental

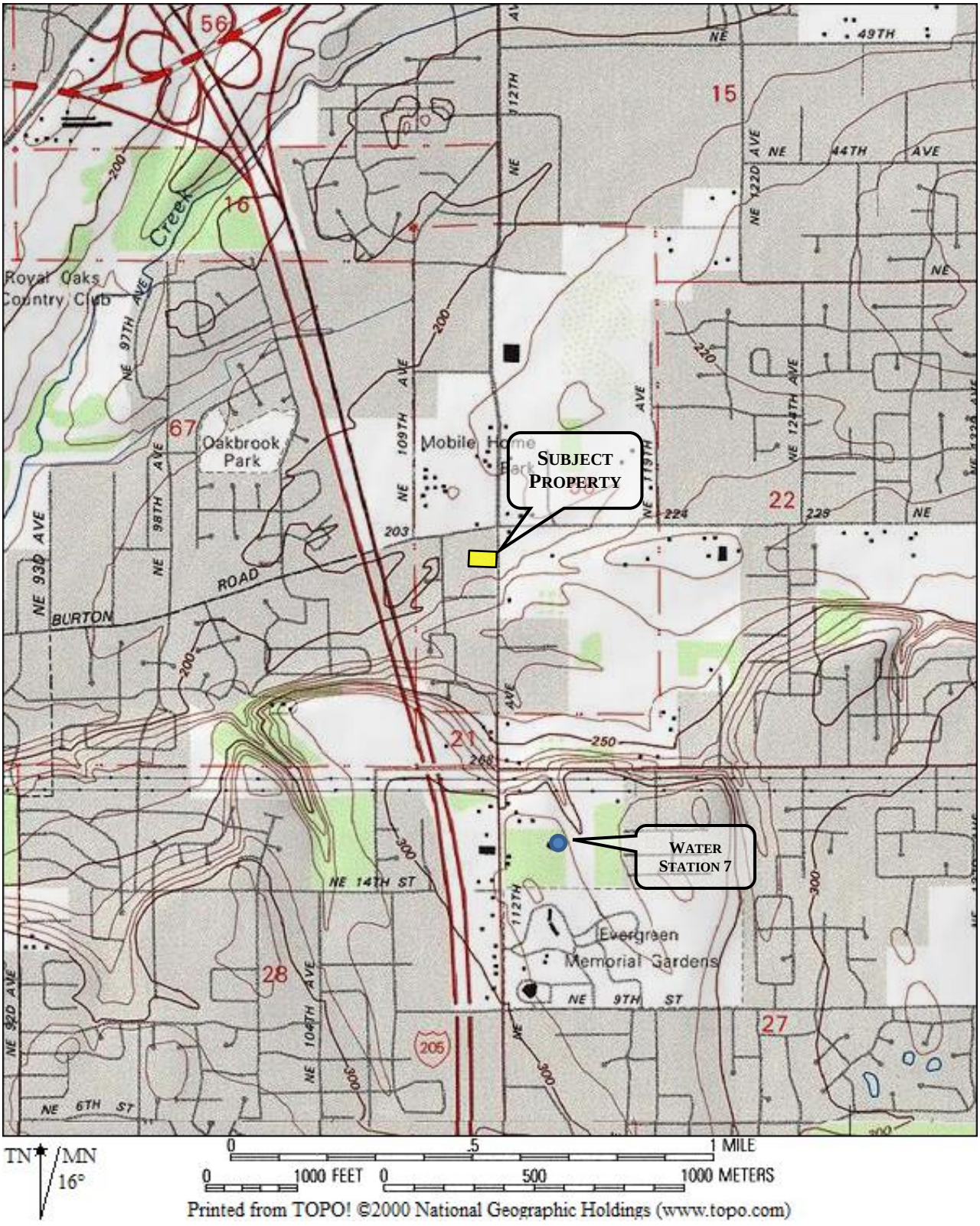
11080 SW ALLEN BLVD, STE 100
BEAVERTON, OREGON 97005
(503) 292-5346

FIGURE 1: SITE VICINITY MAP

Project Name: 2616 NE 112th Avenue
Vancouver, Washington 98684

Project Number: 17-16167

N



SOURCE: USGS 7.5 Minute Topographic Map – Orchards, WA Quadrangle, 1990

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BEAVERTON, OREGON 97005
(503) 292-5346

FIGURE 2: TOPOGRAPHIC MAP

Project Name: 2616 NE 112th Avenue
Vancouver, Washington 98684

Project Number: 17-16167

N

APPROXIMATE SCALE IN FEET

0 30 60 90

LEGEND

Monitoring Well Locations

MW-1 Monitoring Well Numbers

Alpha environmental

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BEAVERTON, OREGON 97005
(503) 292-5346

FIGURE 3: SITE PLAN

Project Name: 2616 NE 112th Avenue
Vancouver, Washington 98684

Project Number: 17-16167

N

APPROXIMATE SCALE IN FEET

0 30 60 90

LEGEND

Monitoring Well Locations

MW-1 (202.47) Monitoring Well Numbers and GW Elevation in Feet

Groundwater Contour

Alpha environmental

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BEAVERTON, OREGON 97005
(503) 292-5346

FIGURE 4: 3rd QUARTER GROUNDWATER

Project Name: 2616 NE 112th Avenue
Vancouver, Washington 98684

Project Number: 17-16167

Sampling Date: 7/24/17

N

APPROXIMATE SCALE IN FEET

0 30 60 90

LEGEND

Monitoring Well Locations

MW-1 (202.72) Monitoring Well Numbers and GW Elevation in Feet

Groundwater Contour

Alpha environmental

11080 SW ALLEN BLVD, STE 100
BEAVERTON, OREGON 97005
(503) 292-5346

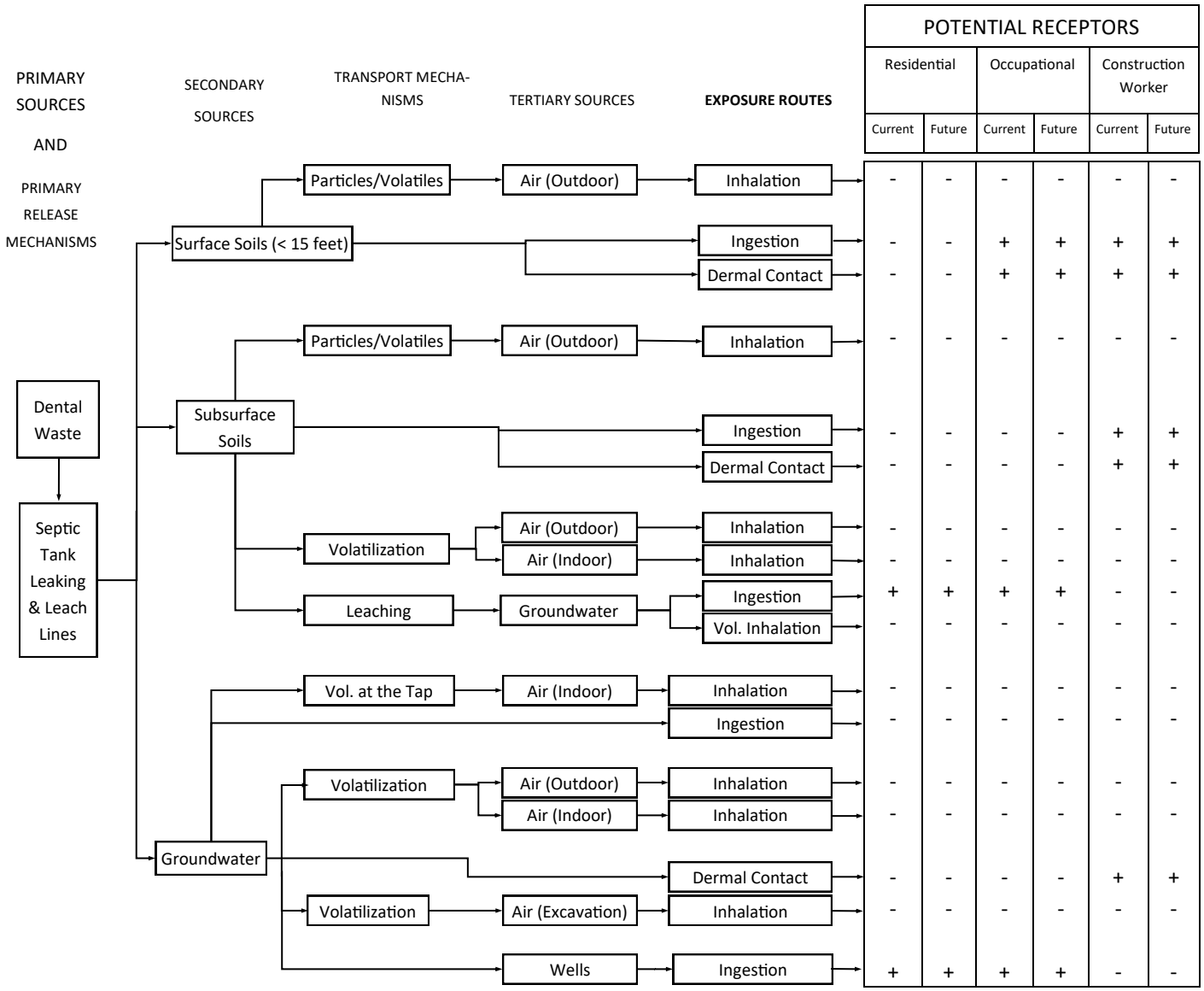
FIGURE 5: 4th QUARTER GROUNDWATER

Project Name: 2616 NE 112th Avenue
Vancouver, Washington 98684

Project Number: 17-16167

Sampling Date: 10/31/17

N



NOTES:

\+ This route is a source of exposure.

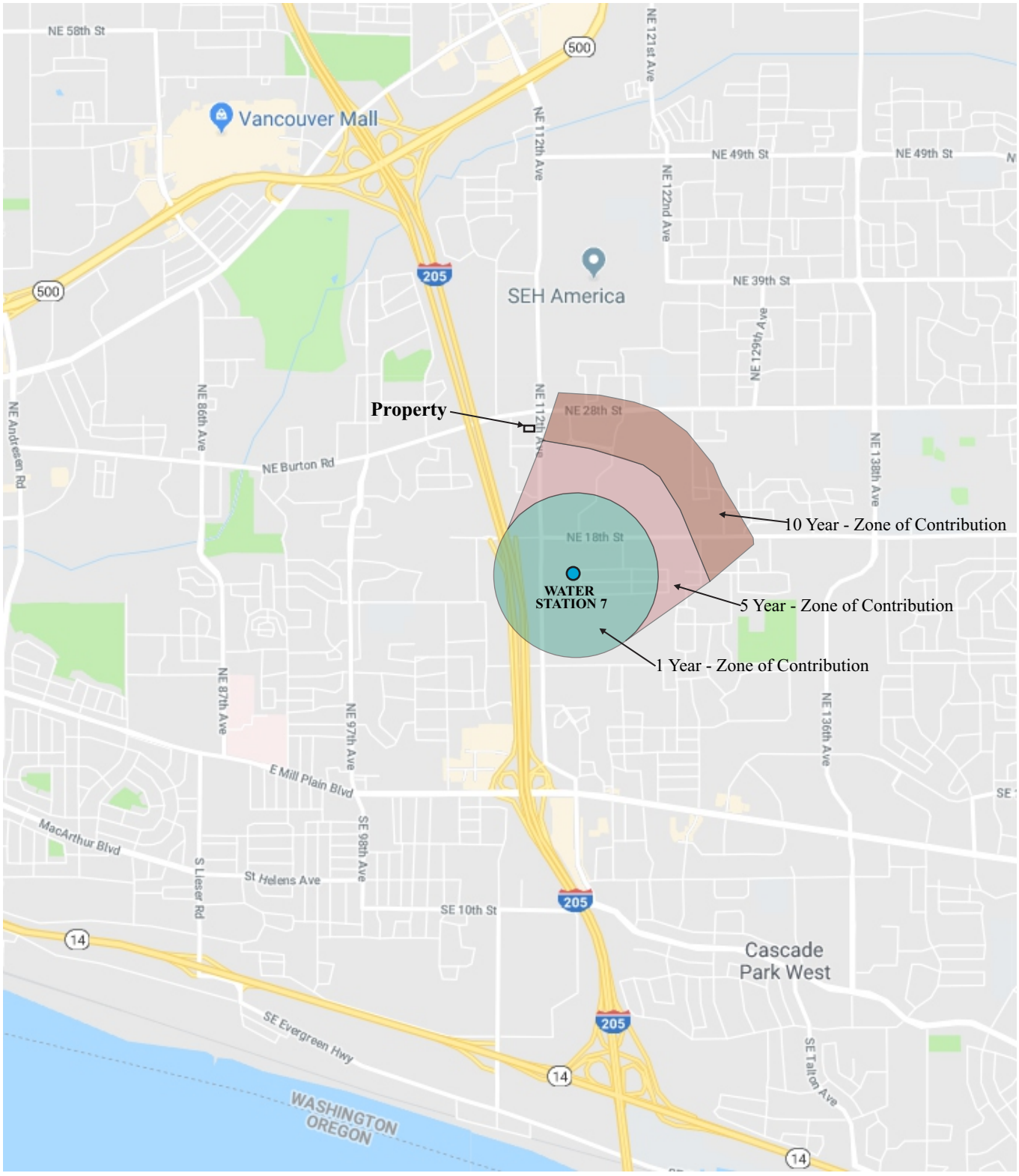
\- There is no exposure by this route.

11080 SW ALLEN BLVD, STE 100
BEAVERTON, OREGON 97009
(503) 292-5346

FIGURE 6: CONCEPTUAL SITE MODEL SCHAMATIC

Project Name: 2616 NE 112th Avenue
Vancouver, Wa 98684

Project Number: 17-16167



APPROXIMATE SCALE IN MILES

0 0.25 0.50 0.75 1.0

Source: Clark County Wellhead Protection Zones Comprehensive Plan

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BEAVERTON, OREGON 97005
(503) 292-5346

FIGURE 7: WELL PROTECTION AREA

Project Name: 2616 NE 112th Avenue
Vancouver, Washington 98684

Project Number: 17-16167

N

APPENDIX A:

BORING LOGS

BOREHOLE LITHOLOGIC LOG

BORING # MW-1	PROJECT # 17-16167	SHEET 1 of 1

PROJECT NAME: 2616 NE 112th Avenue
Vancouver, Washington
LOGGED BY: J. Cooper
DRILLED BY: Cascade Drilling

START/END DATE: 7/7/2017
BORING METHOD: Direct-Push Sampler
BORING DEPTH: 20'
BORING DIAMETER: 4"

DEPTH (ft.)	WELL DETAILS	SAMPLING INTERVAL 2.5 feet	PID (ppm)	SAMPLE #	~ % RECOVERY	APPARENT MOISTURE CONDITIONS	SOIL DESCRIPTION
1						Dry	**Topsoil**
					43	Damp	
5							**Brown Silty SAND**
					98	Very Moist	**Brown fine-grained SAND**
10							***grading to***
					95	Wet	**Medium to coarse-grained SAND**
				B1@13'			
						Very Moist	**Brown fine-grained SAND (13-14')**
15							**Dark Brown Medium-grained SAND**
				B1@18'	100		
20							**Light brown Silty fine-grained SAND w/trace clay**
						Bottom of boring at 20'	

Placed 2" PVC well to 20', screened 10-20'.
Static groundwater observed at 8.27 feet.

Boreholes are continuously sampled at 5 ft. intervals. Samples are collected and field checked for soil discoloration/odors.

BOREHOLE LITHOLOGIC LOG

BORING # MW-2 | **PROJECT #** 17-16167 | **SHEET** 1 of 1

PROJECT NAME: 2616 NE 112th Avenue
Vancouver, Washington
LOGGED BY: J. Cooper
DRILLED BY: Cascade Drilling

START/END DATE: 7/7/2017
BORING METHOD: Direct-Push Sampler
BORING DEPTH: 20'
BORING DIAMETER: 4"

DEPTH (ft.)	WELL DETAILS	SAMPLING INTERVAL 2.5 feet	PID (ppm)	SAMPLE #	~ % RECOVERY	APPARENT MOISTURE CONDITIONS	SOIL DESCRIPTION
1						Dry	**Topsoil**
							Red brown Silty SAND
					90	Dry	
5							
						Damp	**Brown fine to medium-grained SAND**
					63		
	▼					Moist	***w/ gravel @ 8 '***
10				B2@9'			
						Wet	**Dark Brown medium to coarse-grained SAND**
					65		
						Very Moist	**Dark brown fine-grained SAND**
15							
				B2@17'			
					100		**Light brown fine-grained SAND w/trace clay**
20							
						Bottom of boring at 20'	***Placed 2" PVC well to 20', screened 10-20'. Static groundwater observed at 7.92 feet.***

Boreholes are continuously sampled at 5 ft. intervals. Samples are collected and field checked for soil discoloration/odors.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN ONLY APPLIES AT THE SPECIFIC BORING LOCATION AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BOREHOLE LITHOLOGIC LOG

BORING # MW-3	PROJECT # 17-16167	SHEET 1 of 1

PROJECT NAME: 2616 NE 112th Avenue
Vancouver, Washington
LOGGED BY: J. Cooper
DRILLED BY: Cascade Drilling

START/END DATE: 7/7/2017
BORING METHOD: Direct-Push Sampler
BORING DEPTH: 20'
BORING DIAMETER: 4"

DEPTH (ft.)	WELL DETAILS	SAMPLING INTERVAL 2.5 feet	PID (ppm)	SAMPLE #	~ % RECOVERY	APPARENT MOISTURE CONDITIONS	SOIL DESCRIPTION
1						Dry	**Concrete** **Sandy Gravel Fill**
							Brown Silty SAND (Fill?)
					53	Damp	
5							
						Damp	**Dark Brown Sandy Gravel (Fill?)**
					58		**Brown fine to medium-grained SAND**
10						Damp	
						Moist	
					30		**Grey Sandy GRAVEL (13-14')**
15				B3@15'		Very Moist	
						Wet	**Brown fine to medium-grained SAND**
					77		**w/gravel @ 17'** **fine sand @18'**
20				B3@19'			**Light brown fine-grained SAND** **w/trace clay**
						Bottom of boring at 20'	

Placed 2" PVC well to 20', screened 10-20'.
Static groundwater observed at 10.14 feet.

Boreholes are continuously sampled at 5 ft. intervals. Samples are collected and field checked for soil discoloration/odors.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN ONLY APPLIES AT THE SPECIFIC BORING LOCATION AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

BOREHOLE LITHOLOGIC LOG

BORING # MW-4	PROJECT # 17-16167	SHEET 1 of 1

PROJECT NAME: 2616 NE 112th Avenue
Vancouver, Washington
LOGGED BY: J. Cooper
DRILLED BY: Cascade Drilling

START/END DATE: 10/11/2017
BORING METHOD: Direct-Push Sampler
BORING DEPTH: 20'
BORING DIAMETER: 4"

DEPTH (ft.)	WELL DETAILS	SAMPLING INTERVAL 2.5 feet	PID (ppm)	SAMPLE #	~ % RECOVERY	APPARENT MOISTURE CONDITIONS	SOIL DESCRIPTION
1						Damp	**Topsoil**
					55		**Brown Silty SAND**
5						Damp	**Brown fine-grained SAND**
					68		**grades to**
10						Moist	**Brown fine to medium-grained SAND**
					70	Very Moist	***w/ gravel @ 11 '***
15						Wet	**Dark Brown medium to coarse-grained SAND**
					93		**Light brown fine-grained SAND w/trace clay**
20							
						Bottom of boring at 20'	

Placed 2" PVC well to 20', screened 10-20'.
Static groundwater observed at 7.52 feet.

Boreholes are continuously sampled at 5 ft. intervals. Samples are collected and field checked for soil discoloration/odors.

NOTE: THE LOG OF SUBSURFACE CONDITIONS SHOWN ONLY APPLIES AT THE SPECIFIC BORING LOCATION AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES.

APPENDIX B:

ANALYTICAL LABORATORY REPORTS

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, July 25, 2017

Jim Cooper
Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

RE: 2616 NE 112th Ave/17-16167

Enclosed are the results of analyses for work order A7G0183, which was received by the laboratory on 7/10/2017 at 3:43:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: KFriscia@apex-labs.com, or by phone at 503-718-2323.

Kevin J. Friscia For Darwin Thomas, Business Development Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
17-16167 B1@13'	A7G0183-01	Soil	07/07/17 08:54	07/10/17 15:43
17-16167 B1@18'	A7G0183-02	Soil	07/07/17 08:57	07/10/17 15:43
17-16167 B2@9'	A7G0183-03	Soil	07/07/17 10:03	07/10/17 15:43
17-16167 B2@17'	A7G0183-04	Soil	07/07/17 10:05	07/10/17 15:43
17-16167 B3@15'	A7G0183-05	Soil	07/07/17 11:43	07/10/17 15:43
17-16167 B3@19'	A7G0183-06	Soil	07/07/17 11:46	07/10/17 15:43

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Kevin J. Friscia For Darwin Thomas, Business Development Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
07/25/17 10:01

ANALYTICAL SAMPLE RESULTS

Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 B1@13' (A7G0183-01)			**Matrix: Soil**		**Batch: 7070405**			
Hexavalent Chromium	ND	---	0.569	mg/kg dry	1	07/11/17 14:48	EPA 7196A	
17-16167 B1@18' (A7G0183-02)			**Matrix: Soil**		**Batch: 7070405**			
Hexavalent Chromium	ND	---	0.570	mg/kg dry	1	07/11/17 14:52	EPA 7196A	
17-16167 B2@9' (A7G0183-03)			**Matrix: Soil**		**Batch: 7070405**			
Hexavalent Chromium	ND	---	0.541	mg/kg dry	1	07/11/17 14:52	EPA 7196A	
17-16167 B2@17' (A7G0183-04)			**Matrix: Soil**		**Batch: 7070405**			
Hexavalent Chromium	ND	---	0.538	mg/kg dry	1	07/11/17 14:53	EPA 7196A	
17-16167 B3@15' (A7G0183-05)			**Matrix: Soil**		**Batch: 7070405**			
Hexavalent Chromium	ND	---	0.494	mg/kg dry	1	07/11/17 14:54	EPA 7196A	
17-16167 B3@19' (A7G0183-06)			**Matrix: Soil**		**Batch: 7070405**			
Hexavalent Chromium	ND	---	0.559	mg/kg dry	1	07/11/17 14:55	EPA 7196A	

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Kevin J. Friscia For Darwin Thomas, Business Development Director

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 B1@13' (A7G0183-01)			**Matrix: Soil**					
Batch: 7070450								
Arsenic	**1.96**	---	1.42	mg/kg dry	10	07/12/17 13:04	EPA 6020A	
Barium	**212**	---	1.42	"	"	"	"	
Cadmium	**0.440**	---	0.284	"	"	"	"	
Chromium	**15.1**	---	1.42	"	"	"	"	
Lead	**5.11**	---	0.284	"	"	"	"	
Mercury	ND	---	0.114	"	"	"	"	
Selenium	ND	---	1.42	"	"	"	"	
Silver	ND	---	0.284	"	"	"	"	
17-16167 B1@18' (A7G0183-02)			**Matrix: Soil**					
Batch: 7070450								
Arsenic	**2.55**	---	1.41	mg/kg dry	10	07/12/17 13:08	EPA 6020A	
Barium	**114**	---	1.41	"	"	"	"	Q-42
Cadmium	**0.352**	---	0.281	"	"	"	"	
Chromium	**16.8**	---	1.41	"	"	"	"	
Lead	**4.39**	---	0.281	"	"	"	"	
Mercury	ND	---	0.113	"	"	"	"	
Selenium	ND	---	1.41	"	"	"	"	
Silver	ND	---	0.281	"	"	"	"	
17-16167 B2@9' (A7G0183-03)			**Matrix: Soil**					
Batch: 7070450								
Arsenic	**3.47**	---	1.18	mg/kg dry	10	07/12/17 13:26	EPA 6020A	
Barium	**157**	---	1.18	"	"	"	"	
Cadmium	**0.495**	---	0.236	"	"	"	"	
Chromium	**22.7**	---	1.18	"	"	"	"	
Lead	**6.92**	---	0.236	"	"	"	"	
Mercury	ND	---	0.0942	"	"	"	"	
Selenium	ND	---	1.18	"	"	"	"	
Silver	**1.20**	---	0.236	"	"	"	"	
17-16167 B2@17' (A7G0183-04)			**Matrix: Soil**					
Batch: 7070450								
Arsenic	**1.97**	---	1.26	mg/kg dry	10	07/12/17 13:30	EPA 6020A	
Barium	**225**	---	1.26	"	"	"	"	
Cadmium	**0.340**	---	0.252	"	"	"	"	
Chromium	**11.6**	---	1.26	"	"	"	"	

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 B2@17' (A7G0183-04)			**Matrix: Soil**					
Lead	**3.34**	---	0.252	mg/kg dry	10	"	EPA 6020A	
Mercury	ND	---	0.101	"	"	"	"	
Selenium	ND	---	1.26	"	"	"	"	
Silver	ND	---	0.252	"	"	"	"	
17-16167 B3@15' (A7G0183-05)			**Matrix: Soil**					
Batch: 7070450								
Arsenic	**1.22**	---	1.18	mg/kg dry	10	07/12/17 13:33	EPA 6020A	
Barium	**152**	---	1.18	"	"	"	"	
Cadmium	**0.495**	---	0.236	"	"	"	"	
Chromium	**9.42**	---	1.18	"	"	"	"	
Lead	**4.39**	---	0.236	"	"	"	"	
Mercury	ND	---	0.0942	"	"	"	"	
Selenium	ND	---	1.18	"	"	"	"	
Silver	ND	---	0.236	"	"	"	"	
17-16167 B3@19' (A7G0183-06)			**Matrix: Soil**					
Batch: 7070450								
Arsenic	**3.63**	---	1.28	mg/kg dry	10	07/12/17 13:36	EPA 6020A	
Barium	**72.8**	---	1.28	"	"	"	"	
Cadmium	ND	---	0.256	"	"	"	"	
Chromium	**20.9**	---	1.28	"	"	"	"	
Lead	**6.82**	---	0.256	"	"	"	"	
Mercury	ND	---	0.103	"	"	"	"	
Selenium	ND	---	1.28	"	"	"	"	
Silver	ND	---	0.256	"	"	"	"	

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Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
07/25/17 10:01

ANALYTICAL SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 B1@13' (A7G0183-01)			**Matrix: Soil**		**Batch: 7070388**			
% Solids	**76.8**	---	1.00	% by Weight	1	07/11/17 07:42	EPA 8000C	
17-16167 B1@18' (A7G0183-02)			**Matrix: Soil**		**Batch: 7070388**			
% Solids	**78.3**	---	1.00	% by Weight	1	07/11/17 07:42	EPA 8000C	
17-16167 B2@9' (A7G0183-03)			**Matrix: Soil**		**Batch: 7070388**			
% Solids	**82.3**	---	1.00	% by Weight	1	07/11/17 07:42	EPA 8000C	
17-16167 B2@17' (A7G0183-04)			**Matrix: Soil**		**Batch: 7070388**			
% Solids	**83.0**	---	1.00	% by Weight	1	07/11/17 07:42	EPA 8000C	
17-16167 B3@15' (A7G0183-05)			**Matrix: Soil**		**Batch: 7070388**			
% Solids	**90.5**	---	1.00	% by Weight	1	07/11/17 07:42	EPA 8000C	
17-16167 B3@19' (A7G0183-06)			**Matrix: Soil**		**Batch: 7070388**			
% Solids	**78.6**	---	1.00	% by Weight	1	07/11/17 07:42	EPA 8000C	

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Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
07/25/17 10:01

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Hexavalent Chromium by EPA 7196A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070405 - Method Prep: Non-Aq									Soil			
Blank (7070405-BLK1)					Prepared: 07/11/17 07:10		Analyzed: 07/11/17 14:46					
EPA 7196A												
Hexavalent Chromium	ND	---	0.450	mg/kg wet	1	---	---	---	---	---	---	
LCS (7070405-BS1)					Prepared: 07/11/17 07:10		Analyzed: 07/11/17 14:47					
EPA 7196A												
Hexavalent Chromium	21.7	---	0.450	mg/kg wet	1	20.0	---	108	80-120%	---	---	
Duplicate (7070405-DUP1)					Prepared: 07/11/17 07:10		Analyzed: 07/11/17 14:49					
QC Source Sample: 17-16167 B1@13' (A7G0183-01)												
EPA 7196A												
Hexavalent Chromium	ND	---	0.575	mg/kg dry	1	---	ND	---	---	---	20%	
Matrix Spike (7070405-MS1)					Prepared: 07/11/17 07:10		Analyzed: 07/11/17 14:50					
QC Source Sample: 17-16167 B1@13' (A7G0183-01)												
EPA 7196A												
Hexavalent Chromium	24.5	---	0.570	mg/kg dry	1	25.3	ND	97	75-125%	---	---	
Matrix Spike (7070405-MS2)					Prepared: 07/11/17 07:10		Analyzed: 07/11/17 14:50					
QC Source Sample: 17-16167 B1@13' (A7G0183-01)												
EPA 7196A												
Hexavalent Chromium	2130	---	58.1	mg/kg dry	100	2100	ND	102	75-125%	---	---	
Post Spike (7070405-PS1)					Prepared: 07/11/17 07:10		Analyzed: 07/11/17 14:51					
QC Source Sample: 17-16167 B1@13' (A7G0183-01)												
EPA 7196A												
Hexavalent Chromium	28.6	---	0.571	mg/kg dry	1	22.4	ND	127	85-115%		---	A-01

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Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
07/25/17 10:01

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070450 - EPA 3051A									Soil			
Blank (7070450-BLK1)					Prepared: 07/12/17 07:55 Analyzed: 07/12/17 12:52							
EPA 6020A												
Arsenic	ND	---	1.00	mg/kg wet	10	---	---	---	---	---	---	
Barium	ND	---	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
LCS (7070450-BS1)					Prepared: 07/12/17 07:55 Analyzed: 07/12/17 12:55							
EPA 6020A												
Arsenic	51.1	---	1.00	mg/kg wet	10	50.0	---	102	80-120%	---	---	
Barium	53.5	---	1.00	"	"	"	---	107	"	---	---	
Cadmium	51.8	---	0.200	"	"	"	---	104	"	---	---	
Chromium	52.5	---	1.00	"	"	"	---	105	"	---	---	
Lead	56.9	---	0.200	"	"	"	---	114	"	---	---	
Mercury	1.04	---	0.0800	"	"	1.00	---	104	"	---	---	
Selenium	26.0	---	1.00	"	"	25.0	---	104	"	---	---	
Silver	27.3	---	0.200	"	"	"	---	109	"	---	---	
Duplicate (7070450-DUP1)					Prepared: 07/12/17 07:55 Analyzed: 07/12/17 13:11							
QC Source Sample: 17-16167 B1@18' (A7G0183-02)												
EPA 6020A												
Arsenic	**2.30**	---	1.34	mg/kg dry	10	---	2.55	---	---	10	40%	
Barium	**134**	---	1.34	"	"	---	114	---	---	16	40%	
Cadmium	**0.309**	---	0.268	"	"	---	0.352	---	---	13	40%	
Chromium	**12.5**	---	1.34	"	"	---	16.8	---	---	29	40%	
Lead	**4.82**	---	0.268	"	"	---	4.39	---	---	9	40%	
Mercury	ND	---	0.107	"	"	---	ND	---	---	---	40%	
Selenium	ND	---	1.34	"	"	---	ND	---	---	---	40%	
Silver	ND	---	0.268	"	"	---	ND	---	---	---	40%	
Matrix Spike (7070450-MS1)					Prepared: 07/12/17 07:55 Analyzed: 07/12/17 13:14							
QC Source Sample: 17-16167 B1@18' (A7G0183-02)												
EPA 6020A												

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070450 - EPA 3051A							**Soil**					
Matrix Spike (7070450-MS1)					Prepared: 07/12/17 07:55 Analyzed: 07/12/17 13:14							
QC Source Sample: 17-16167 B1@18' (A7G0183-02)												
EPA 6020A												
Arsenic	66.6	---	1.24	mg/kg dry	10	61.8	2.55	104	75-125%	---	---	
Barium	208	---	1.24	"	"	"	114	153	"	---	---	Q-03
Cadmium	65.6	---	0.247	"	"	"	0.352	105	"	---	---	
Chromium	85.2	---	1.24	"	"	"	16.8	111	"	---	---	
Lead	73.2	---	0.247	"	"	"	4.39	111	"	---	---	
Mercury	1.30	---	0.0989	"	"	1.24	ND	105	"	---	---	
Selenium	32.1	---	1.24	"	"	30.9	ND	104	"	---	---	
Silver	34.3	---	0.247	"	"	"	ND	111	"	---	---	

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11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

QUALITY CONTROL (QC) SAMPLE RESULTS

Percent Dry Weight

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070388 - Total Solids (Dry Weight)												**Soil**

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Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
07/25/17 10:01

SAMPLE PREPARATION INFORMATION

Total Hexavalent Chromium by EPA 7196A

Prep: Method Prep: Non-Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070405							
A7G0183-01	Soil	EPA 7196A	07/07/17 08:54	07/11/17 07:10	2.5767g/111mL	2.5g/111mL	0.97
A7G0183-02	Soil	EPA 7196A	07/07/17 08:57	07/11/17 07:10	2.523g/111mL	2.5g/111mL	0.99
A7G0183-03	Soil	EPA 7196A	07/07/17 10:03	07/11/17 07:10	2.5292g/111mL	2.5g/111mL	0.99
A7G0183-04	Soil	EPA 7196A	07/07/17 10:05	07/11/17 07:10	2.5195g/111mL	2.5g/111mL	0.99
A7G0183-05	Soil	EPA 7196A	07/07/17 11:43	07/11/17 07:10	2.5165g/111mL	2.5g/111mL	0.99
A7G0183-06	Soil	EPA 7196A	07/07/17 11:46	07/11/17 07:10	2.5577g/111mL	2.5g/111mL	0.98

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3051A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070450							
A7G0183-01	Soil	EPA 6020A	07/07/17 08:54	07/12/17 07:55	0.459g/50mL	0.5g/50mL	1.09
A7G0183-02	Soil	EPA 6020A	07/07/17 08:57	07/12/17 07:55	0.454g/50mL	0.5g/50mL	1.10
A7G0183-03	Soil	EPA 6020A	07/07/17 10:03	07/12/17 07:55	0.516g/50mL	0.5g/50mL	0.97
A7G0183-04	Soil	EPA 6020A	07/07/17 10:05	07/12/17 07:55	0.478g/50mL	0.5g/50mL	1.05
A7G0183-05	Soil	EPA 6020A	07/07/17 11:43	07/12/17 07:55	0.469g/50mL	0.5g/50mL	1.07
A7G0183-06	Soil	EPA 6020A	07/07/17 11:46	07/12/17 07:55	0.496g/50mL	0.5g/50mL	1.01

Percent Dry Weight

Prep: Total Solids (Dry Weight)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070388							
A7G0183-01	Soil	EPA 8000C	07/07/17 08:54	07/10/17 17:37	1N/A/1N/A	1N/A/1N/A	NA
A7G0183-02	Soil	EPA 8000C	07/07/17 08:57	07/10/17 17:37	1N/A/1N/A	1N/A/1N/A	NA
A7G0183-03	Soil	EPA 8000C	07/07/17 10:03	07/10/17 17:37	1N/A/1N/A	1N/A/1N/A	NA
A7G0183-04	Soil	EPA 8000C	07/07/17 10:05	07/10/17 17:37	1N/A/1N/A	1N/A/1N/A	NA
A7G0183-05	Soil	EPA 8000C	07/07/17 11:43	07/10/17 17:37	1N/A/1N/A	1N/A/1N/A	NA
A7G0183-06	Soil	EPA 8000C	07/07/17 11:46	07/10/17 17:37	1N/A/1N/A	1N/A/1N/A	NA

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

Notes and Definitions

Qualifiers:

A-01	Post spike failed high. Possible high bias. Samples ND. Results not affected.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Kevin J. Friscia For Darwin Thomas, Business Development Director

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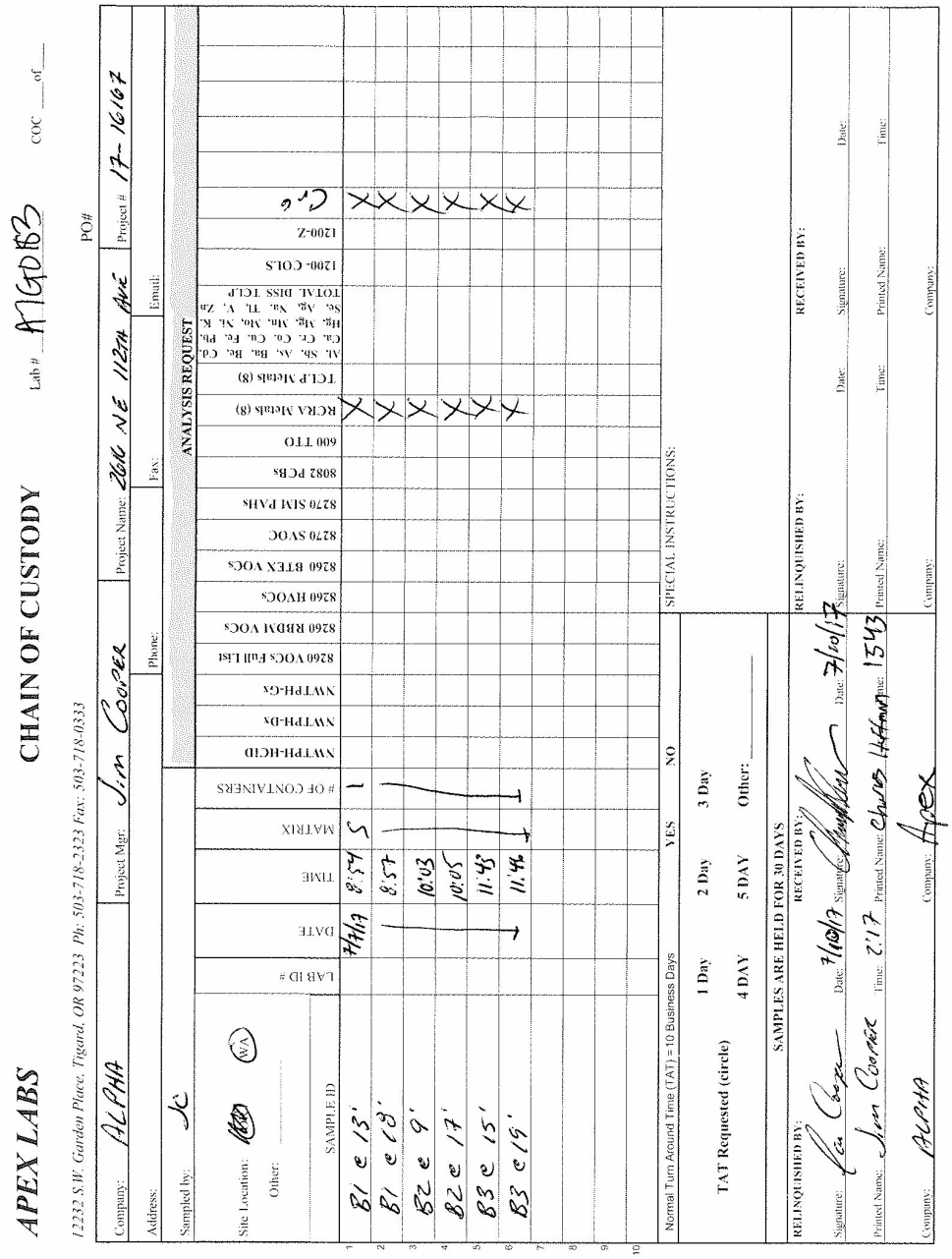
Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01



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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	07/25/17 10:01

APEX LABS COOLER RECEIPT FORM

Client: Alpha Element WO#: A7 G0183

Project/Project #: 2616 NE 112th Ave 17-16167

Delivery info:

Date/Time Received: 7/10/17 @ 1543 By: CFH

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: JS : 7/10/17 @ 1625

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.9						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	11.1						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why: temp blank away from samples

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: AKK : 7/10/17 @ 1634

All Samples Intact? Yes X No ___ Comments: ___

Bottle Labels/COCs agree? Yes X No ___ Comments: NoT/D on Cont

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA X

Comments ___

Water Samples: pH Checked and Appropriate (except VOAs): Yes ___ No ___ NA X

Comments: ___

Additional Information: ___

Labeled by: KAM Witness: AKK Cooler Inspected by: JS See Project Contact Form: Y

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Wednesday, August 30, 2017

Jim Cooper
Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

RE: 17-16167

Enclosed are the results of analyses for work order A7G0643, which was received by the laboratory on 7/24/2017 at 4:34:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: KFriscia@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Kevin J. Friscia For Darwin Thomas, Business Development Director

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Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **17-16167**

Project Manager: Jim Cooper

Reported:
08/30/17 10:28

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
17-16167 MW-1	A7G0643-01	Water	07/24/17 10:23	07/24/17 16:34
17-16167 MW-2	A7G0643-02	Water	07/24/17 11:24	07/24/17 16:34
17-16167 MW-3	A7G0643-03	Water	07/24/17 12:20	07/24/17 16:34

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Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **17-16167**
Project Manager: Jim Cooper

Reported:
08/30/17 10:28

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 MW-1 (A7G0643-01)			**Matrix: Water**					
Batch: 7070854								
Barium	**15.7**	---	1.00	ug/L	1	07/26/17 20:39	EPA 200.8	
Cadmium	ND	---	0.200	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Silver	ND	---	0.200	"	"	"	EPA 200.8	
17-16167 MW-1 (A7G0643-01RE1)			**Matrix: Water**					
Batch: 7070854								
Arsenic	ND	---	1.00	ug/L	1	07/28/17 18:20	EPA 200.8	
Chromium	ND	---	1.00	"	"	"	"	
Selenium	ND	---	1.00	"	"	"	"	
17-16167 MW-2 (A7G0643-02)			**Matrix: Water**					
Batch: 7070854								
Barium	**10.4**	---	1.00	ug/L	1	07/26/17 20:42	EPA 200.8	
Cadmium	ND	---	0.200	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Silver	ND	---	0.200	"	"	"	EPA 200.8	
17-16167 MW-2 (A7G0643-02RE1)			**Matrix: Water**					
Batch: 7070854								
Arsenic	ND	---	1.00	ug/L	1	07/28/17 18:23	EPA 200.8	
Chromium	ND	---	1.00	"	"	"	"	
Selenium	ND	---	1.00	"	"	"	"	
17-16167 MW-3 (A7G0643-03)			**Matrix: Water**					
Batch: 7070854								
Arsenic	ND	---	1.00	ug/L	1	07/26/17 20:55	EPA 200.8	
Barium	**15.3**	---	1.00	"	"	"	"	
Cadmium	ND	---	0.200	"	"	"	"	
Chromium	**1.29**	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Selenium	ND	---	1.00	"	"	"	EPA 200.8	
Silver	ND	---	0.200	"	"	"	"	

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11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **17-16167**

Project Manager: Jim Cooper

Reported:
08/30/17 10:28

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 MW-1 (A7G0643-01)			**Matrix: Water**					
Batch: 7070900								
Arsenic	ND	---	1.00	ug/L	1	07/27/17 19:35	EPA 200.8 (Diss)	FILT1
Barium	**13.4**	---	1.00	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Selenium	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1
17-16167 MW-2 (A7G0643-02)			**Matrix: Water**					
Batch: 7070900								
Arsenic	ND	---	1.00	ug/L	1	07/27/17 19:38	EPA 200.8 (Diss)	FILT1
Barium	**8.13**	---	1.00	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Selenium	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1
17-16167 MW-3 (A7G0643-03)			**Matrix: Water**					
Batch: 7070900								
Arsenic	ND	---	1.00	ug/L	1	07/27/17 19:42	EPA 200.8 (Diss)	FILT1
Barium	**11.9**	---	1.00	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Selenium	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1

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Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **17-16167**
Project Manager: Jim Cooper

Reported:
08/30/17 10:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070854 - EPA 3015A									Water			
Blank (7070854-BLK1)					Prepared: 07/25/17 09:29 Analyzed: 07/26/17 16:25							
EPA 200.8												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Barium	ND	---	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
EPA 200.8 (Hg)												
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
LCS (7070854-BS1)					Prepared: 07/25/17 09:29 Analyzed: 07/26/17 16:28							
EPA 200.8												
Arsenic	57.1	---	1.00	ug/L	1	55.6	---	103	85-115%	---	---	
Barium	55.5	---	1.00	"	"	"	---	100	"	---	---	
Cadmium	56.3	---	0.200	"	"	"	---	101	"	---	---	
Chromium	56.4	---	1.00	"	"	"	---	101	"	---	---	
Lead	58.1	---	0.200	"	"	"	---	105	"	---	---	
Selenium	29.2	---	1.00	"	"	27.8	---	105	"	---	---	
Silver	28.3	---	0.200	"	"	"	---	102	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.15	---	0.0800	"	"	1.11	---	103	"	---	---	
Matrix Spike (7070854-MS2)					Prepared: 07/25/17 09:29 Analyzed: 07/26/17 20:58							
QC Source Sample: 17-16167 MW-3 (A7G0643-03)												
EPA 200.8												
Arsenic	57.7	---	1.00	ug/L	1	55.6	0.778	102	70-130%	---	---	
Barium	72.1	---	1.00	"	"	"	15.3	102	"	---	---	
Cadmium	55.9	---	0.200	"	"	"	ND	101	"	---	---	
Chromium	58.6	---	1.00	"	"	"	1.29	103	"	---	---	
Lead	57.5	---	0.200	"	"	"	0.189	103	"	---	---	
Selenium	28.4	---	1.00	"	"	27.8	ND	102	"	---	---	
Silver	28.9	---	0.200	"	"	"	ND	104	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.10	---	0.0800	"	"	1.11	ND	99	"	---	---	

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Alpha Environmental
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Beaverton, OR 97005

Project/#: **17-16167**
Project Manager: Jim Cooper

Reported:
08/30/17 10:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070900 - Matrix Matched Direct Inject									Water			
Blank (7070900-BLK1)					Prepared: 07/26/17 11:12 Analyzed: 07/27/17 19:32							
EPA 200.8 (Diss)												
Arsenic	ND	---	1.00	ug/L	1	---	---	---	---	---	---	FILT3
Barium	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
EPA 200.8 (Hg)												
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	FILT3
LCS (7070900-BS1)					Prepared: 07/26/17 11:12 Analyzed: 07/27/17 19:49							
EPA 200.8 (Diss)												
Arsenic	52.6	---	1.00	ug/L	1	55.6	---	95	85-115%	---	---	
Barium	55.5	---	1.00	"	"	"	---	100	"	---	---	
Cadmium	54.5	---	0.200	"	"	"	---	98	"	---	---	
Chromium	55.2	---	1.00	"	"	"	---	99	"	---	---	
Lead	56.6	---	0.200	"	"	"	---	102	"	---	---	
Selenium	28.4	---	1.00	"	"	27.8	---	102	"	---	---	
Silver	28.6	---	0.200	"	"	"	---	103	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.06	---	0.0800	"	"	1.11	---	96	"	---	---	
Duplicate (7070900-DUP1)					Prepared: 07/26/17 11:12 Analyzed: 07/27/17 19:46							
QC Source Sample: 17-16167 MW-3 (A7G0643-03)												
EPA 200.8 (Diss)												
Arsenic	ND	---	1.00	ug/L	1	---	0.544	---	---	12	20%	
Barium	**11.9**	---	1.00	"	"	---	11.9	---	---	0.4	20%	
Cadmium	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Chromium	ND	---	1.00	"	"	---	0.933	---	---	0	20%	
Lead	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Selenium	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Silver	ND	---	0.200	"	"	---	ND	---	---	---	20%	
EPA 200.8 (Hg)												
Mercury	ND	---	0.0800	"	"	---	ND	---	---	---	20%	

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Alpha Environmental	Project/#: **17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	08/30/17 10:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7070900 - Matrix Matched Direct Inject								**Water**				
Matrix Spike (7070900-MS1)					Prepared: 07/26/17 11:12		Analyzed: 07/27/17 19:52					
QC Source Sample: 17-16167 MW-3 (A7G0643-03)												
EPA 200.8 (Diss)												
Arsenic	55.3	---	1.00	ug/L	1	55.6	0.544	99	70-130%	---	---	
Barium	67.7	---	1.00	"	"	"	11.9	100	"	---	---	
Cadmium	56.2	---	0.200	"	"	"	ND	101	"	---	---	
Chromium	57.5	---	1.00	"	"	"	0.933	102	"	---	---	
Lead	56.1	---	0.200	"	"	"	ND	101	"	---	---	
Selenium	29.3	---	1.00	"	"	27.8	ND	105	"	---	---	
Silver	29.2	---	0.200	"	"	"	ND	105	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.09	---	0.0800	"	"	1.11	ND	98	"	---	---	

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Beaverton, OR 97005

Project/#: **17-16167**

Project Manager: Jim Cooper

Reported:
08/30/17 10:28

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 200.8 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070854							
A7G0643-01	Water	EPA 200.8	07/24/17 10:23	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-01	Water	EPA 200.8 (Hg)	07/24/17 10:23	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-01RE1	Water	EPA 200.8	07/24/17 10:23	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-02	Water	EPA 200.8	07/24/17 11:24	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-02	Water	EPA 200.8 (Hg)	07/24/17 11:24	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-02RE1	Water	EPA 200.8	07/24/17 11:24	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-03	Water	EPA 200.8	07/24/17 12:20	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00
A7G0643-03	Water	EPA 200.8 (Hg)	07/24/17 12:20	07/25/17 09:29	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 200.8 (ICPMS)

Prep: Matrix Matched Direct Inject

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7070900							
A7G0643-01	Water	EPA 200.8 (Diss)	07/24/17 10:23	07/26/17 11:12	45mL/50mL	45mL/50mL	1.00
A7G0643-01	Water	EPA 200.8 (Hg)	07/24/17 10:23	07/26/17 11:12	45mL/50mL	45mL/50mL	1.00
A7G0643-02	Water	EPA 200.8 (Diss)	07/24/17 11:24	07/26/17 11:12	45mL/50mL	45mL/50mL	1.00
A7G0643-02	Water	EPA 200.8 (Hg)	07/24/17 11:24	07/26/17 11:12	45mL/50mL	45mL/50mL	1.00
A7G0643-03	Water	EPA 200.8 (Diss)	07/24/17 12:20	07/26/17 11:12	45mL/50mL	45mL/50mL	1.00
A7G0643-03	Water	EPA 200.8 (Hg)	07/24/17 12:20	07/26/17 11:12	45mL/50mL	45mL/50mL	1.00

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Alpha Environmental	Project/#: **17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	08/30/17 10:28

Notes and Definitions

Qualifiers:

FILT1	Sample was lab filtered and acid preserved prior to analysis. See sample preparation section of report for date and time of filtration.
FILT3	This is a laboratory filtration blank, associated with filtration batch 7070835. See Prep page of report for associated samples.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories

Kevin J. Friscia For Darwin Thomas, Business Development Director

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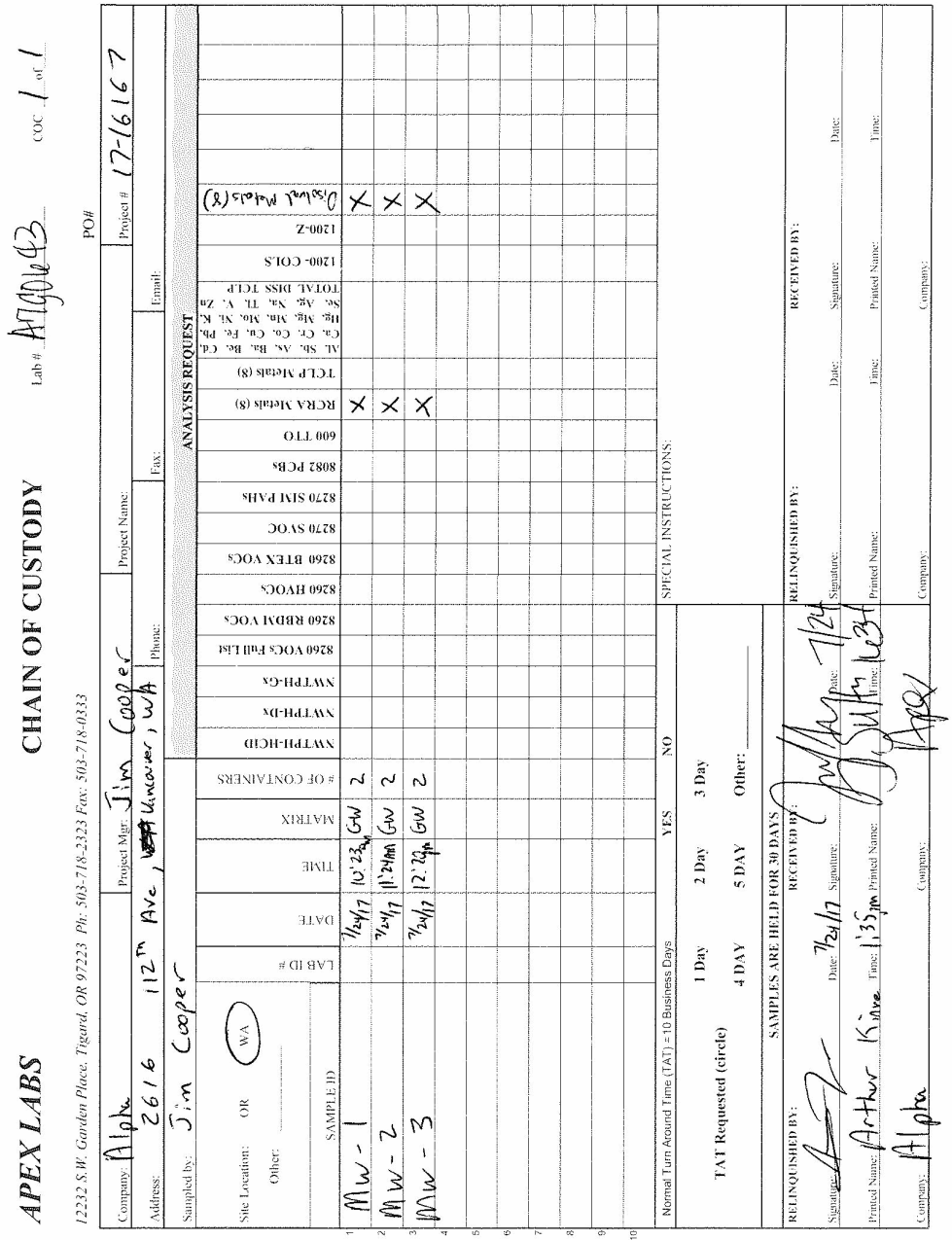
Alpha Environmental	Project/#: **17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	08/30/17 10:28



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Alpha Environmental	Project/#: **17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	08/30/17 10:28

APEX LABS COOLER RECEIPT FORM

Client: Alpha Element WO#: A7G0643

Project/Project #: 17-16167

Delivery info:

Date/Time Received: 7/24/17 @ 1634 By: JS

Delivered by: Apex___ Client___ ESS___ FedEx___ UPS___ Swift___ Senvoy___ SDS___ Other___

Cooler Inspection Inspected by: JS : 7/24/17 @ 1653

Chain of Custody Included? Yes X No ___ Custody Seals? Yes___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)							
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)	5.9						
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: (8) : 7/24/17 @ 1654 (8)

All Samples Intact? Yes ✓ No ___ Comments:

Bottle Labels/COCs agree? Yes ✓ No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes ✓ No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA ✓

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes ✓ No ___ NA ___

Comments:

Additional Information:

Labeled by: VAL Witness: CM Cooler Inspected by: KAL See Project Contact Form: Y

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Tuesday, November 21, 2017

Jim Cooper
Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

RE: 2616 NE 112th Ave/17-16167

Enclosed are the results of analyses for work order A7J0984, which was received by the laboratory on 10/31/2017 at 4:03:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: KFriscia@apex-labs.com, or by phone at 503-718-2323.

Kevin J. Friscia For Darwin Thomas, Business Development Director

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
17-16167 MW-1	A7J0984-01	Water	10/31/17 09:24	10/31/17 16:03
17-16167 MW-2	A7J0984-02	Water	10/31/17 10:24	10/31/17 16:03
17-16167 MW-3	A7J0984-03	Water	10/31/17 12:01	10/31/17 16:03
17-16167 MW-4	A7J0984-04	Water	10/31/17 11:11	10/31/17 16:03

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11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 MW-1 (A7J0984-01)			**Matrix: Water**					
Batch: 7110361								
Antimony	ND	---	1.00	ug/L	1	11/06/17 17:34	EPA 200.8	
Arsenic	ND	---	1.00	"	"	"	"	
Beryllium	ND	---	0.200	"	"	"	"	
Cadmium	ND	---	0.200	"	"	"	"	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Nickel	ND	---	1.00	"	"	"	EPA 200.8	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	0.200	"	"	"	"	
Thallium	ND	---	0.200	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	
17-16167 MW-2 (A7J0984-02)			**Matrix: Water**					
Batch: 7110361								
Antimony	ND	---	1.00	ug/L	1	11/06/17 17:37	EPA 200.8	
Arsenic	ND	---	1.00	"	"	"	"	
Beryllium	ND	---	0.200	"	"	"	"	
Cadmium	ND	---	0.200	"	"	"	"	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Nickel	ND	---	1.00	"	"	"	EPA 200.8	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	0.200	"	"	"	"	
Thallium	ND	---	0.200	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	
17-16167 MW-3 (A7J0984-03)			**Matrix: Water**					
Batch: 7110361								
Antimony	ND	---	1.00	ug/L	1	11/06/17 17:40	EPA 200.8	
Arsenic	ND	---	1.00	"	"	"	"	
Beryllium	ND	---	0.200	"	"	"	"	
Cadmium	ND	---	0.200	"	"	"	"	

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 MW-3 (A7J0984-03)			**Matrix: Water**					
Chromium	ND	---	1.00	ug/L	1	"	EPA 200.8	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Nickel	ND	---	1.00	"	"	"	EPA 200.8	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	0.200	"	"	"	"	
Thallium	ND	---	0.200	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	
17-16167 MW-4 (A7J0984-04)			**Matrix: Water**					
Batch: 7110361								
Antimony	ND	---	1.00	ug/L	1	11/06/17 17:44	EPA 200.8	
Arsenic	ND	---	1.00	"	"	"	"	
Beryllium	ND	---	0.200	"	"	"	"	
Cadmium	ND	---	0.200	"	"	"	"	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	
Nickel	**1.23**	---	1.00	"	"	"	EPA 200.8	
Selenium	ND	---	1.00	"	"	"	"	
Silver	ND	---	0.200	"	"	"	"	
Thallium	ND	---	0.200	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	

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Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 MW-1 (A7J0984-01)			**Matrix: Water**					
Batch: 7110354								
Antimony	ND	---	1.00	ug/L	1	11/05/17 17:32	EPA 200.8 (Diss)	FILT1
Arsenic	ND	---	1.00	"	"	"	"	FILT1
Beryllium	ND	---	0.200	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Nickel	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Selenium	ND	---	1.00	"	"	"	"	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1
Thallium	ND	---	0.200	"	"	"	"	FILT1
Zinc	ND	---	4.00	"	"	"	"	FILT1
17-16167 MW-1 (A7J0984-01RE1)			**Matrix: Water**					
Batch: 7110354								
Copper	ND	---	1.00	ug/L	1	11/07/17 18:25	EPA 200.8 (Diss)	FILT1
17-16167 MW-2 (A7J0984-02)			**Matrix: Water**					
Batch: 7110354								
Antimony	ND	---	1.00	ug/L	1	11/05/17 17:36	EPA 200.8 (Diss)	FILT1
Arsenic	ND	---	1.00	"	"	"	"	FILT1
Beryllium	ND	---	0.200	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Nickel	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Selenium	ND	---	1.00	"	"	"	"	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1
Thallium	ND	---	0.200	"	"	"	"	FILT1
Zinc	ND	---	4.00	"	"	"	"	FILT1
17-16167 MW-2 (A7J0984-02RE1)			**Matrix: Water**					
Batch: 7110354								
Copper	ND	---	1.00	ug/L	1	11/07/17 18:29	EPA 200.8 (Diss)	FILT1
17-16167 MW-3 (A7J0984-03)			**Matrix: Water**					
Batch: 7110354								

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11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
17-16167 MW-3 (A7J0984-03)			**Matrix: Water**					
Antimony	ND	---	1.00	ug/L	1	11/05/17 17:41	EPA 200.8 (Diss)	FILT1
Arsenic	ND	---	1.00	"	"	"	"	FILT1
Beryllium	ND	---	0.200	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Nickel	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Selenium	ND	---	1.00	"	"	"	"	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1
Thallium	ND	---	0.200	"	"	"	"	FILT1
Zinc	ND	---	4.00	"	"	"	"	FILT1
17-16167 MW-3 (A7J0984-03RE1)			**Matrix: Water**					
Batch: 7110354								
Copper	ND	---	1.00	ug/L	1	11/07/17 18:33	EPA 200.8 (Diss)	FILT1
17-16167 MW-4 (A7J0984-04)			**Matrix: Water**					
Batch: 7110354								
Antimony	ND	---	1.00	ug/L	1	11/05/17 17:49	EPA 200.8 (Diss)	FILT1
Arsenic	ND	---	1.00	"	"	"	"	FILT1
Beryllium	ND	---	0.200	"	"	"	"	FILT1
Cadmium	ND	---	0.200	"	"	"	"	FILT1
Chromium	ND	---	1.00	"	"	"	"	FILT1
Lead	ND	---	0.200	"	"	"	"	FILT1
Mercury	ND	---	0.0800	"	"	"	EPA 200.8 (Hg)	FILT1
Nickel	ND	---	1.00	"	"	"	EPA 200.8 (Diss)	FILT1
Selenium	ND	---	1.00	"	"	"	"	FILT1
Silver	ND	---	0.200	"	"	"	"	FILT1
Thallium	ND	---	0.200	"	"	"	"	FILT1
Zinc	ND	---	4.00	"	"	"	"	FILT1
17-16167 MW-4 (A7J0984-04RE1)			**Matrix: Water**					
Batch: 7110354								
Copper	ND	---	1.00	ug/L	1	11/07/17 18:42	EPA 200.8 (Diss)	FILT1

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Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110361 - EPA 3015A									**Water**			
Blank (7110361-BLK1)					Prepared: 11/02/17 13:14 Analyzed: 11/06/17 15:13							
EPA 200.8												
Antimony	ND	---	1.00	ug/L	1	---	---	---	---	---	---	
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
EPA 200.8 (Hg)												
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	
LCS (7110361-BS1)					Prepared: 11/02/17 13:14 Analyzed: 11/06/17 15:17							
EPA 200.8												
Antimony	27.7	---	1.00	ug/L	1	27.8	---	100	85-115%	---	---	
Arsenic	57.3	---	1.00	"	"	55.6	---	103	"	---	---	
Beryllium	27.3	---	0.200	"	"	27.8	---	98	"	---	---	
Cadmium	56.6	---	0.200	"	"	55.6	---	102	"	---	---	
Chromium	57.5	---	1.00	"	"	"	---	104	"	---	---	
Copper	58.3	---	1.00	"	"	"	---	105	"	---	---	
Lead	55.5	---	0.200	"	"	"	---	100	"	---	---	
Nickel	57.9	---	1.00	"	"	"	---	104	"	---	---	
Selenium	27.4	---	1.00	"	"	27.8	---	99	"	---	---	
Silver	27.9	---	0.200	"	"	"	---	100	"	---	---	
Thallium	27.1	---	0.200	"	"	"	---	98	"	---	---	
Zinc	57.8	---	4.00	"	"	55.6	---	104	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.09	---	0.0800	"	"	1.11	---	98	"	---	---	
Matrix Spike (7110361-MS2)					Prepared: 11/02/17 13:14 Analyzed: 11/07/17 15:07							
QC Source Sample: 17-16167 MW-4 (A7J0984-04)												
EPA 200.8												

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110361 - EPA 3015A							**Water**					
Matrix Spike (7110361-MS2)					Prepared: 11/02/17 13:14 Analyzed: 11/07/17 15:07							
QC Source Sample: 17-16167 MW-4 (A7J0984-04)												
EPA 200.8												
Antimony	28.5	---	1.00	ug/L	1	27.8	ND	103	70-130%	---	---	
Arsenic	56.0	---	1.00	"	"	55.6	ND	101	"	---	---	
Beryllium	27.6	---	0.200	"	"	27.8	ND	100	"	---	---	
Cadmium	56.5	---	0.200	"	"	55.6	ND	102	"	---	---	
Chromium	57.8	---	1.00	"	"	"	0.933	102	"	---	---	
Copper	58.1	---	1.00	"	"	"	0.989	103	"	---	---	
Lead	55.4	---	0.200	"	"	"	0.144	100	"	---	---	
Nickel	56.9	---	1.00	"	"	"	1.23	100	"	---	---	
Selenium	27.3	---	1.00	"	"	27.8	ND	98	"	---	---	
Silver	28.5	---	0.200	"	"	"	ND	103	"	---	---	
Thallium	27.1	---	0.200	"	"	"	ND	98	"	---	---	
Zinc	61.2	---	4.00	"	"	55.6	3.06	105	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.09	---	0.0800	"	"	1.11	ND	98	"	---	---	

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Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110354 - EPA 3015A - Dissolved								**Water**				
Blank (7110354-BLK1)					Prepared: 11/02/17 12:02		Analyzed: 11/05/17 17:24					
EPA 200.8 (Diss)												
Antimony	ND	---	1.00	ug/L	1	---	---	---	---	---	---	FILT3
Arsenic	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Beryllium	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Cadmium	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Selenium	ND	---	1.00	"	"	---	---	---	---	---	---	FILT3
Silver	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Thallium	ND	---	0.200	"	"	---	---	---	---	---	---	FILT3
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	FILT3
EPA 200.8 (Hg)												
Mercury	ND	---	0.0800	"	"	---	---	---	---	---	---	FILT3
Blank (7110354-BLK2)					Prepared: 11/02/17 12:02		Analyzed: 11/07/17 18:04					
EPA 200.8 (Diss)												
Copper	ND	---	1.00	ug/L	1	---	---	---	---	---	---	FILT3a, Q-16
LCS (7110354-BS1)					Prepared: 11/02/17 12:02		Analyzed: 11/05/17 17:28					
EPA 200.8 (Diss)												
Antimony	27.1	---	1.00	ug/L	1	27.8	---	97	85-115%	---	---	
Arsenic	56.6	---	1.00	"	"	55.6	---	102	"	---	---	
Beryllium	26.7	---	0.200	"	"	27.8	---	96	"	---	---	
Cadmium	54.4	---	0.200	"	"	55.6	---	98	"	---	---	
Chromium	56.8	---	1.00	"	"	"	---	102	"	---	---	
Lead	54.8	---	0.200	"	"	"	---	99	"	---	---	
Nickel	58.3	---	1.00	"	"	"	---	105	"	---	---	
Selenium	28.7	---	1.00	"	"	27.8	---	103	"	---	---	
Silver	27.6	---	0.200	"	"	"	---	99	"	---	---	
Thallium	26.9	---	0.200	"	"	"	---	97	"	---	---	
Zinc	58.3	---	4.00	"	"	55.6	---	105	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.10	---	0.0800	"	"	1.11	---	99	"	---	---	
LCS (7110354-BS2)					Prepared: 11/02/17 12:02		Analyzed: 11/07/17 18:21					

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503-718-0333 Fax

Alpha Environmental
11080 SW Allen Blvd, Suite 100
Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110354 - EPA 3015A - Dissolved								**Water**				
LCS (7110354-BS2)					Prepared: 11/02/17 12:02		Analyzed: 11/07/17 18:21					
EPA 200.8 (Diss)												
Copper	61.9	---	1.00	ug/L	1	55.6	---	111	85-115%	---	---	Q-16
Duplicate (7110354-DUP1)					Prepared: 11/02/17 12:02		Analyzed: 11/05/17 17:45					
QC Source Sample: 17-16167 MW-3 (A7J0984-03)												
EPA 200.8 (Diss)												
Antimony	ND	---	1.00	ug/L	1	---	ND	---	---	---	20%	
Arsenic	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Beryllium	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Cadmium	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Chromium	**1.07**	---	1.00	"	"	---	0.972	---	---	10	20%	
Lead	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Nickel	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Selenium	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Silver	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Thallium	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Zinc	ND	---	4.00	"	"	---	2.18	---	---	5	20%	
EPA 200.8 (Hg)												
Mercury	ND	---	0.0800	"	"	---	ND	---	---	---	20%	
Duplicate (7110354-DUP2)					Prepared: 11/02/17 12:02		Analyzed: 11/07/17 18:38					
QC Source Sample: 17-16167 MW-3 (A7J0984-03RE1)												
EPA 200.8 (Diss)												
Copper	ND	---	1.00	ug/L	1	---	ND	---	---	---	20%	Q-16
Matrix Spike (7110354-MS1)					Prepared: 11/02/17 12:02		Analyzed: 11/05/17 18:06					
QC Source Sample: 17-16167 MW-4 (A7J0984-04)												
EPA 200.8 (Diss)												
Antimony	27.5	---	1.00	ug/L	1	27.8	ND	99	70-130%	---	---	
Arsenic	56.5	---	1.00	"	"	55.6	ND	102	"	---	---	
Beryllium	26.3	---	0.200	"	"	27.8	ND	95	"	---	---	
Cadmium	54.6	---	0.200	"	"	55.6	ND	98	"	---	---	
Chromium	57.5	---	1.00	"	"	"	ND	103	"	---	---	
Lead	53.5	---	0.200	"	"	"	ND	96	"	---	---	
Nickel	59.1	---	1.00	"	"	"	0.931	105	"	---	---	
Selenium	28.4	---	1.00	"	"	27.8	ND	102	"	---	---	

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 7110354 - EPA 3015A - Dissolved								**Water**				
Matrix Spike (7110354-MS1)					Prepared: 11/02/17 12:02		Analyzed: 11/05/17 18:06					
QC Source Sample: 17-16167 MW-4 (A7J0984-04)												
EPA 200.8 (Diss)												
Silver	27.7	---	0.200	ug/L	"	"	ND	100	"	---	---	
Thallium	26.0	---	0.200	"	"	"	ND	94	"	---	---	
Zinc	59.6	---	4.00	"	"	55.6	3.64	101	"	---	---	
EPA 200.8 (Hg)												
Mercury	1.04	---	0.0800	"	"	1.11	ND	94	"	---	---	
Matrix Spike (7110354-MS2)					Prepared: 11/02/17 12:02		Analyzed: 11/07/17 18:46					
QC Source Sample: 17-16167 MW-4 (A7J0984-04RE1)												
EPA 200.8 (Diss)												
Copper	60.0	---	1.00	ug/L	1	55.6	ND	108	70-130%	---	---	Q-16

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Beaverton, OR 97005

Project/#: **2616 NE 112th Ave/17-16167**
Project Manager: Jim Cooper

Reported:
11/21/17 08:46

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 200.8 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110361							
A7J0984-01	Water	EPA 200.8	10/31/17 09:24	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-01	Water	EPA 200.8 (Hg)	10/31/17 09:24	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-02	Water	EPA 200.8	10/31/17 10:24	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-02	Water	EPA 200.8 (Hg)	10/31/17 10:24	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-03	Water	EPA 200.8	10/31/17 12:01	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-03	Water	EPA 200.8 (Hg)	10/31/17 12:01	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-04	Water	EPA 200.8	10/31/17 11:11	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00
A7J0984-04	Water	EPA 200.8 (Hg)	10/31/17 11:11	11/02/17 13:14	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 200.8 (ICPMS)

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 7110354							
A7J0984-01	Water	EPA 200.8 (Diss)	10/31/17 09:24	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-01	Water	EPA 200.8 (Hg)	10/31/17 09:24	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-01RE1	Water	EPA 200.8 (Diss)	10/31/17 09:24	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-02	Water	EPA 200.8 (Diss)	10/31/17 10:24	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-02	Water	EPA 200.8 (Hg)	10/31/17 10:24	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-02RE1	Water	EPA 200.8 (Diss)	10/31/17 10:24	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-03	Water	EPA 200.8 (Diss)	10/31/17 12:01	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-03	Water	EPA 200.8 (Hg)	10/31/17 12:01	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-03RE1	Water	EPA 200.8 (Diss)	10/31/17 12:01	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-04	Water	EPA 200.8 (Diss)	10/31/17 11:11	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-04	Water	EPA 200.8 (Hg)	10/31/17 11:11	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00
A7J0984-04RE1	Water	EPA 200.8 (Diss)	10/31/17 11:11	11/02/17 12:02	45mL/50mL	45mL/50mL	1.00

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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46

Notes and Definitions

Qualifiers:

FILT1	Sample was lab filtered and acid preserved prior to analysis. See sample preparation section of report for date and time of filtration.
FILT3	This is a laboratory filtration blank, associated with filtration batch 7100364. See Prep page of report for associated samples.
FILT3a	This is a laboratory filtration blank, associated with filtration batch 7101364. See Prep page of report for associated samples.
Q-16	Reanalysis of an original Batch QC sample.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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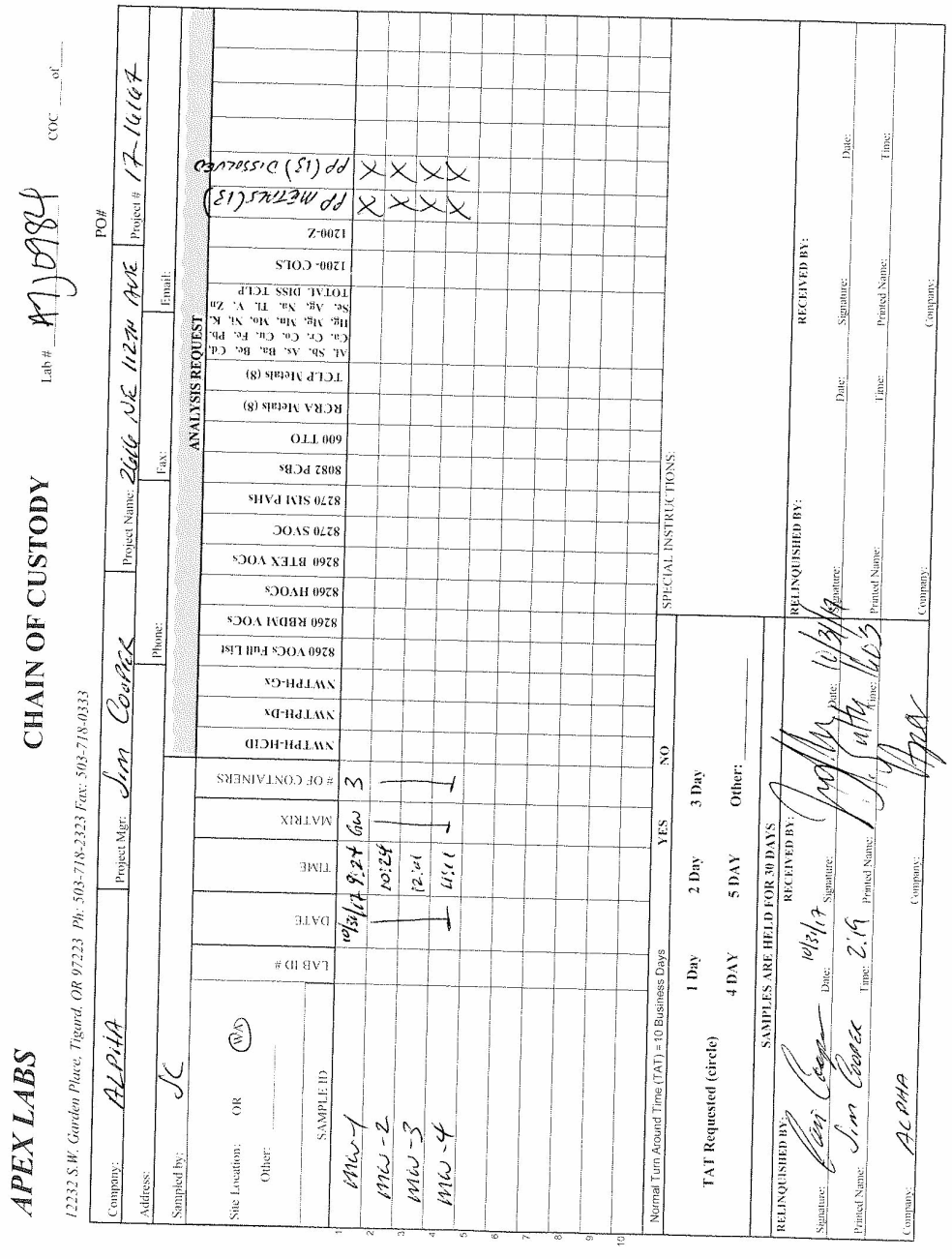
Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46



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Alpha Environmental	Project/#: **2616 NE 112th Ave/17-16167**	
11080 SW Allen Blvd, Suite 100		**Reported:**
Beaverton, OR 97005	Project Manager: Jim Cooper	11/21/17 08:46

APEX LABS COOLER RECEIPT FORM

Client: Alpha Element WO#: A7 10984

Project/Project #: 2616 NE 112th Ave 17-16167

Delivery info:

Date/Time Received: 10/31/17 @ 1603 By: JS

Delivered by: Apex X Client ESS FedEx UPS Swift Senvoy SDS Other

Cooler Inspection Inspected by: JS : 10/31/17 @ 1625

Chain of Custody Included? Yes Y No

Custody Seals? Yes No X

Signed/Dated by Client? Yes Y No

Signed/Dated by Apex? Yes X No

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	4.3						
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KM : 10/31/17 @ 1630

All Samples Intact? Yes X No Comments:

Bottle Labels/COCs agree? Yes X No Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No Comments:

Do VOA Vials have Visible Headspace? Yes No NA X

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No NA

Comments:

Additional Information:

Labeled by: Witness: Cooler Inspected by: See Project Contact Form: Y

KM S JS

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APPENDIX C:

MONITORING WELL FIELD SHEETS

GROUNWATER SAMPLING FORM

12
1.5

Site Details	
Project Name	2016 NE 112TH AVE
Project Number	17-16167
Sampler	JC
Well ID	MW-1 SKH 997
Date	7/24/17
Weather	CLR

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

1.92 Gal / Well Volume

Monument				
Lid Condition	Good	Acceptable	Needs Repair/Replacing	Notes:
Bolts	Good	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	Good	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	Yes	No	Above Well Cap? Yes / No	Notes:

Well (PVC / Steel)				
Casing	Good	Acceptable	Needs Repair/Replacing	Notes:
Lock	Good	Acceptable	Needs Repair/Replacing	Notes:
Cap	Good	Acceptable	Needs Repair/Replacing	Notes:

202.47

Sampling			
Water Depth (ft)	8.67		
Surveyed Elevation	211.14		
Pump Type	Peristaltic	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
9:44	0.5	9.52	13.4	187.3	95.69	6.76	12.6	CLR
9:47	1.0	9.61	13.4	187.5	95.71	6.78	12.4	
9:51	1.5	9.64	13.4	188.9	94.55	6.78	12.2	
9:54	2.0	9.66	13.4	189.6	94.91	6.80	11.6	
9:57	2.5	9.67	13.3	190.9	95.56	6.80	11.6	
10:01	3.0	9.67	13.3	192.4	96.26	6.79	11.1	
10:04	3.5	9.68	13.4	192.3	96.17	6.79	12.1	
10:07	4.0	9.68	13.3	192.2	96.11	6.78	12.3	
10:11	4.5	9.68	13.3	192.5	96.28	6.78	12.4	
10:15	5.0	9.68	13.3	193.0	96.56	6.78	12.4	
10:17	5.5	9.68	13.3	193.0	96.58	6.78	12.3	
10:20	6.0	9.68	13.3	193.2	96.69	6.78	12.3	

GROUNWATER SAMPLING FORM

Site Details	
Project Name	261C NE 112TH AVE
Project Number	17-16167
Sampler	JC
Well ID	MW-2 BKH 998
Date	7/24/17
Weather	CLR

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

Monument				
Lid Condition	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Bolts	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	Yes	(No)	Above Well Cap? Yes / No	Notes:

Well (PVC / Steel)				
Casing	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Lock	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Cap	(Good)	Acceptable	Needs Repair/Replacing	Notes:

Sampling			
Water Depth (ft)	8.86	198.77	
Surveyed Elevation	207.63		
Pump Type	(Peristaltic)	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
10:46	0.5	8.91	13.1	185.4	92.65	6.73	16.3	OL
10:50	1.0	8.91	13.0	184.8	92.43	6.70	17.3	
10:53	1.5	8.91	13.0	184.6	92.33	6.70	17.3	
10:56	2.0	8.91	12.9	184.6	92.34	6.70	17.3	
10:59	2.5	8.91	12.9	184.5	92.36	6.70	17.4	
11:02	3.0	8.91	12.9	184.5	92.28	6.69	17.6	
11:05	3.5	8.91	12.9	184.4	92.21	6.69	17.3	
11:09	4.0	8.91	12.9	184.1	92.03	6.69	17.8	
11:13	4.5	8.91	13.0	183.6	91.88	6.68	18.0	
11:16	5.0	8.91	13.0	182.6	91.79	6.68	18.3	
11:19	5.5	8.91	12.9	183.3	91.68	6.68	18.1	
11:22	6.0	8.9	12.9	183.0	91.55	6.68	18.3	

GROUNWATER SAMPLING FORM

Site Details	
Project Name	2616 NE 112TH
Project Number	17-16167
Sampler	JC
Well ID	MW-3 BKH 929
Date	7/24/17
Weather	cld

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

1.44 / CASE VOLUME

Monument				
Lid Condition	Good	Acceptable	Needs Repair/Replacing	Notes:
Bolts	Good	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	Good	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	Yes	No	Above Well Cap? Yes / No	Notes:

Well PVC / Steel				
Casing	Good	Acceptable	Needs Repair/Replacing	Notes:
Lock	Good	Acceptable	Needs Repair/Replacing	Notes:
Cap	Good	Acceptable	Needs Repair/Replacing	Notes:

Sampling			
Water Depth (ft)	11.16	200.40	
Surveyed Elevation	211.56		
Pump Type	Peristaltic	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
11:45	0.5	12.02	14.4	192.5	92.26	6.65	20.1	CLR
11:50	1.0	12.06	14.4	184.6	94.42	6.63	20.9	"
11:55	1.5	12.10	14.5	188.9	93.56	6.64	20.8	"
11:58	2.0	12.12	14.3	185.9	92.84	6.63	20.9	"
12:02	2.5	12.14	14.3	190.7	95.36	6.64	20.7	"
12:04	3.0	12.16	14.3	187.3	93.69	6.64	20.3	"
12:11	3.5	12.18	14.3	183.2	91.77	6.64	20.3	"
12:15	4.0	12.18	14.3	185.0	91.45	6.62	21.5	"
12:19	4.5	12.19	14.3	182.5	91.30	6.62	20.1	"

GROUNWATER SAMPLING FORM

Site Details	
Project Name	Z616 NE 112TH
Project Number	17-16167
Sampler	JC
Well ID	mw-1
Date	10/31/17
Weather	clear / cool

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

Monument				
Lid Condition	Good	Acceptable	Needs Repair/Replacing	Notes:
Bolts	Good	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	Good	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	Yes	No	Above Well Cap? Yes / No	Notes:

Well PVC / Steel				
Casing	Good	Acceptable	Needs Repair/Replacing	Notes:
Lock	Good	Acceptable	Needs Repair/Replacing	Notes:
Cap	Good	Acceptable	Needs Repair/Replacing	Notes:

Sampling			
Water Depth (ft)	8.42 / 202.72	1.84 - GALLONS	
Surveyed Elevation	211.14		
Pump Type	Peristaltic	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
8:51	0.5	9.37	14.3	192.3	96.41	6.87	10.2	CLR
8:54	1.0	9.41	14.4	192.1	96.12	6.84	8.9	
8:57	1.5	9.43	14.3	192.4	96.0	6.82	10.1	
8:59	2.0	9.42	14.5	197.7	96.39	6.83	10.0	
9:03	2.5	9.42	14.3	193.1	96.38	6.84	9.1	
9:06	3.0	9.42	14.3	194.1	97.15	6.84	9.1	
9:09	3.5	9.42	14.2	194.8	97.47	6.84	9.1	
9:12	4.0	9.41	14.2	194.9	97.49	6.84	9.3	
9:14	4.5	9.41	14.2	195.1	97.54	6.83	9.4	
9:18	5.0	9.45	14.2	195.0	97.66	6.84	9.0	
9:21	5.5	9.47	14.2	195.2	97.70	6.84	9.0	
9:24	6.0	9.48	14.2	196.0	98.12	6.84	9.3	

GROUNWATER SAMPLING FORM

Site Details	
Project Name	2616 NE 112th
Project Number	17-16167
Sampler	JC
Well ID	mw-2
Date	10/31/17
Weather	Clear/cold

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

Monument				
Lid Condition	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Bolts	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	Yes	(No)	Above Well Cap? Yes / No	Notes:

Well (PVC) / Steel				
Casing	Good	Acceptable	Needs Repair/Replacing	Notes:
Lock	Good	Acceptable	Needs Repair/Replacing	Notes:
Cap	Good	Acceptable	Needs Repair/Replacing	Notes:

Sampling			
Water Depth (ft)	8.16	199.47	
Surveyed Elevation	207.63		
Pump Type	(Peristaltic)	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
9:57	0.5	8.19	13.1	193.1	96.54	6.81	11.2	
10:00	1.0	8.20	13.3	191.8	96.11	6.72	13.1	
10:02	1.5	8.20	13.4	191.1	96.02	6.77	13.5	
10:04	2.0	8.20	13.3	194.0	96.98	6.76	13.7	
10:06	2.5	8.21	13.4	193.6	96.80	6.76	13.8	
10:08	3.0	8.20	13.4	192.8	96.67	6.76	13.9	
10:11	3.5	8.20	13.4	190.9	96.00	6.76	13.9	
10:14	4.0	8.20	13.4	192.9	96.52	6.75	14.1	
10:16	4.5	8.20	13.4	192.3	96.49	6.75	14.1	
10:19	5.0	8.20	13.4	192.4	96.31	6.75	14.0	
10:23	5.5	8.19	13.4	192.4	96.22	6.75	14.2	

GROUNWATER SAMPLING FORM

Site Details	
Project Name	2616 NE 112TH
Project Number	17-16167
Sampler	JC
Well ID	MW-3
Date	10/5/17
Weather	

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

Monument				
Lid Condition	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Bolts	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	(Yes)	No	Above Well Cap? Yes / (No)	Notes:

Well PVC / Steel				
Casing	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Lock	(Good)	Acceptable	Needs Repair/Replacing	Notes:
Cap	(Good)	Acceptable	Needs Repair/Replacing	Notes:

Sampling			
Water Depth (ft)	10.61	200.95	
Surveyed Elevation	211.56		
Pump Type	Peristaltic	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
11:35	0.5	11.97	14.2	178.2	88.01	6.74	15.6	
11:39	1.0	11.98	14.0	177.7	87.12	6.71	16.8	
11:41	1.5	11.98	14.0	178.1	88.25	6.74	16.3	
11:44	2.0	11.98	14.0	176.7	88.40	6.72	16.1	
11:47	2.5	11.98	14.0	177.7	88.8	6.73	15.2	
11:50	3.0	11.98	14.0	178.1	88.28	6.73	15.6	
11:54	3.5	11.98	14.0	178.1	87.86	6.72	15.5	
11:57	4.0	11.98	14.0	177.2	88.32	6.73	15.4	
12:00	4.5	11.98	14.0	179.4	87.63	6.72	15.2	

DAVE GILBERT

GROUNWATER SAMPLING FORM

Site Details	
Project Name	2616 NE 112TH
Project Number	17-16107
Sampler	JC
Well ID	mw-4
Date	10/31/17
Weather	

Well Factors	
1 inch	0.041 gal/lin ft
2 inch	0.16 gal/lin ft
3 inch	0.367 gal/lin ft
4 inch	0.653 gal/lin ft
5 inch	1.02 gal/lin ft
6 inch	1.47 gal/lin ft

Monument				
Lid Condition	Good	Acceptable	Needs Repair/Replacing	Notes:
Bolts	Good	Acceptable	Needs Repair/Replacing	Notes:
Rubber seal	Good	Acceptable	Needs Repair/Replacing	Notes:
Water in monument	Yes	No	Above Well Cap? Yes / No	Notes:

Well PVC / Steel				
Casing	Good	Acceptable	Needs Repair/Replacing	Notes:
Lock	Good	Acceptable	Needs Repair/Replacing	Notes: NOT INSTALLED
Cap	Good	Acceptable	Needs Repair/Replacing	Notes:

Sampling			
Water Depth (ft)	6.34	200.49	
Surveyed Elevation	206.83		
Pump Type	Peristaltic	Bladder	Other:
Purge Rate			

Purging Information

Time	Volume Purged (gal)	Water Depth (feet)	Temperature (degrees C)	Specific Conductivity (µS/cm)	TDS (ppm)	pH (SU)	ORP (mV)	Water Color
10:44	0.5	7.69	13.7	181.5	92.95	6.79	12.7	CLOUDY
10:46	1.0	7.69	13.6	179.8	89.64	6.77	13.1	
10:49	1.5	7.68	13.6	179.3	89.99	6.71	14.0	
10:52	2.0	7.67	13.7	179.0	91.91	6.75	14.2	
10:54	2.5	7.68	13.7	177.3	88.50	6.75	14.3	
10:56	3.0	7.69	13.7	179.7	89.75	6.75	14.7	CLR
10:59	3.5	7.68	13.7	179.9	91.66	6.74	14.7	
11:01	4.0	7.69	13.7	174.7	87.33	6.74	14.6	
11:07	4.5	7.68	13.7	173.9	88.99	6.74	14.6	
11:05	5.0	7.68	13.7	173.3	86.58	6.74	14.9	
11:08	5.5	7.67	13.7	175.1	87.50	6.74	15.1	
11:10	6.0	7.68	13.7	175.2	88.27	6.74	15.2	

APPENDIX D:

ELEVATION SURVEY

Daniel Renton, Vice President
Professional Land Surveyor
Certified Water Rights Examiner

MINISTER-GLAESER
SURVEYING INC.

2200 E. Evergreen Blvd., Vancouver, WA 98661
Phone: (360) 694-3313 Fax: (360) 694-8410

PT. NO.	NORTHING	EASTING	ELEVATION (TOP OF PVC LID)	DESCRIPTION from Surveyor	Actual Well ID
100	119377.44	1113916.37	211.14	MW-1	MW-3
101	119405.12	1113758.41	207.63	MW-2	MW-2
102	119272.88	1113806.04	211.56	MW-3	MW-1
103	119373.38	1113790.56	206.83	MW-4	MW-4

HORIZONTAL DATUM: NAD83_2011(EPOCH: 2010.0000)
VERTICAL DATUM: NAVD88(GEOID12B)

APPENDIX E:

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Voluntary Cleanup Program

Washington State Department of Ecology
Toxics Cleanup Program

TERRESTRIAL ECOLOGICAL EVALUATION FORM

Under the Model Toxics Control Act (MTCA), a terrestrial ecological evaluation is necessary if hazardous substances are released into the soils at a Site. In the event of such a release, you must take one of the following three actions as part of your investigation and cleanup of the Site:

1. Document an exclusion from further evaluation using the criteria in WAC 173-340-7491.
2. Conduct a simplified evaluation as set forth in WAC 173-340-7492.
3. Conduct a site-specific evaluation as set forth in WAC 173-340-7493.

When requesting a written opinion under the Voluntary Cleanup Program (VCP), you must complete this form and submit it to the Department of Ecology (Ecology). The form documents the type and results of your evaluation.

Completion of this form is not sufficient to document your evaluation. You still need to document your analysis and the basis for your conclusion in your cleanup plan or report.

If you have questions about how to conduct a terrestrial ecological evaluation, please contact the Ecology site manager assigned to your Site. For additional guidance, please refer to www.ecy.wa.gov/programs/tcp/policies/terrestrial/TEEHome.htm.

Step 1: IDENTIFY HAZARDOUS WASTE SITE	
Please identify below the hazardous waste site for which you are documenting an evaluation.	
Facility/Site Name: Today's Family Dentistry	
Facility/Site Address: 2611 NE 112th Avenue, Vancouver Wa 98684	
Facility/Site No: 107785	VCP Project No.: SW1581

Step 2: IDENTIFY EVALUATOR			
Please identify below the person who conducted the evaluation and their contact information.			
Name: Jim Cooper		Title: Senior Geologist	
Organization: Alpha Environmental Services, Inc.			
Mailing address: 11080 SW Allen Blvd, Ste 100			
City: Beaverton	State: Or	Zip code: 97005	
Phone: 503-292-5346	Fax:	E-mail: jim@alphaenvironmental.net	

Step 3: DOCUMENT EVALUATION TYPE AND RESULTS

A. Exclusion from further evaluation.

1. Does the Site qualify for an exclusion from further evaluation?

☒ Yes *If you answered **"YES,"** then answer **Question 2**.*

☐ No or Unknown *If you answered **"NO" or "UKNOWN,"** then skip to **Step 3B** of this form.*

2. What is the basis for the exclusion? *Check all that apply. Then skip to **Step 4** of this form.*

Point of Compliance: WAC 173-340-7491(1)(a)

☐ All soil contamination is, or will be,* at least 15 feet below the surface.

☐ All soil contamination is, or will be,* at least 6 feet below the surface (or alternative depth if approved by Ecology), and institutional controls are used to manage remaining contamination.

Barriers to Exposure: WAC 173-340-7491(1)(b)

☐ All contaminated soil, is or will be,* covered by physical barriers (such as buildings or paved roads) that prevent exposure to plants and wildlife, and institutional controls are used to manage remaining contamination.

Undeveloped Land: WAC 173-340-7491(1)(c)

☐ There is less than 0.25 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site and any of the following chemicals is present: chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, or pentachlorobenzene.

☐ For sites not containing any of the chemicals mentioned above, there is less than 1.5 acres of contiguous[#] undeveloped[±] land on or within 500 feet of any area of the Site.

Background Concentrations: WAC 173-340-7491(1)(d)

☒ Concentrations of hazardous substances in soil do not exceed natural background levels as described in WAC 173-340-200 and 173-340-709.

* An exclusion based on future land use must have a completion date for future development that is acceptable to Ecology.

[±] "Undeveloped land" is land that is not covered by building, roads, paved areas, or other barriers that would prevent wildlife from feeding on plants, earthworms, insects, or other food in or on the soil.

[#] "Contiguous" undeveloped land is an area of undeveloped land that is not divided into smaller areas of highways, extensive paving, or similar structures that are likely to reduce the potential use of the overall area by wildlife.

B. Simplified evaluation.

1. Does the Site qualify for a simplified evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No or Unknown *If you answered **"NO"** or **"UNKNOWN,"** then skip to **Step 3C** of this form.*

2. Did you conduct a simplified evaluation?

☐ Yes *If you answered **"YES,"** then answer **Question 3** below.*

☐ No *If you answered **"NO,"** then skip to **Step 3C** of this form.*

3. Was further evaluation necessary?

☐ Yes *If you answered **"YES,"** then answer **Question 4** below.*

☐ No *If you answered **"NO,"** then answer **Question 5** below.*

4. If further evaluation was necessary, what did you do?

☐ Used the concentrations listed in Table 749-2 as cleanup levels. *If so, then skip to **Step 4** of this form.*

☐ Conducted a site-specific evaluation. *If so, then skip to **Step 3C** of this form.*

5. If no further evaluation was necessary, what was the reason? *Check all that apply. Then skip to **Step 4** of this form.*

Exposure Analysis: WAC 173-340-7492(2)(a)

☐ Area of soil contamination at the Site is not more than 350 square feet.

☐ Current or planned land use makes wildlife exposure unlikely. Used Table 749-1.

Pathway Analysis: WAC 173-340-7492(2)(b)

☐ No potential exposure pathways from soil contamination to ecological receptors.

Contaminant Analysis: WAC 173-340-7492(2)(c)

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations that exceed the values listed in Table 749-2.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations that exceed the values listed in Table 749-2, and institutional controls are used to manage remaining contamination.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 15 feet at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays.

☐ No contaminant listed in Table 749-2 is, or will be, present in the upper 6 feet (or alternative depth if approved by Ecology) at concentrations likely to be toxic or have the potential to bioaccumulate as determined using Ecology-approved bioassays, and institutional controls are used to manage remaining contamination.

C. Site-specific evaluation. A site-specific evaluation process consists of two parts: (1) formulating the problem, and (2) selecting the methods for addressing the identified problem. Both steps require consultation with and approval by Ecology. *See* WAC 173-340-7493(1)(c).

1. Was there a problem? *See* WAC 173-340-7493(2).

☐ Yes *If you answered **"YES,"** then answer **Question 2** below.*

☐ No *If you answered **"NO,"** then identify the reason here and then skip to **Question 5** below:*

- ☐ No issues were identified during the problem formulation step.
- ☐ While issues were identified, those issues were addressed by the cleanup actions for protecting human health.

2. What did you do to resolve the problem? *See* WAC 173-340-7493(3).

☐ Used the concentrations listed in Table 749-3 as cleanup levels. *If so, then skip to **Question 5** below.*

☐ Used one or more of the methods listed in WAC 173-340-7493(3) to evaluate and address the identified problem. *If so, then answer **Questions 3 and 4** below.*

3. If you conducted further site-specific evaluations, what methods did you use?
Check all that apply. See WAC 173-340-7493(3).

- ☐ Literature surveys.
- ☐ Soil bioassays.
- ☐ Wildlife exposure model.
- ☐ Biomarkers.
- ☐ Site-specific field studies.
- ☐ Weight of evidence.
- ☐ Other methods approved by Ecology. If so, please specify:

4. What was the result of those evaluations?

- ☐ Confirmed there was no problem.
- ☐ Confirmed there was a problem and established site-specific cleanup levels.

5. Have you already obtained Ecology's approval of both your problem formulation and problem resolution steps?

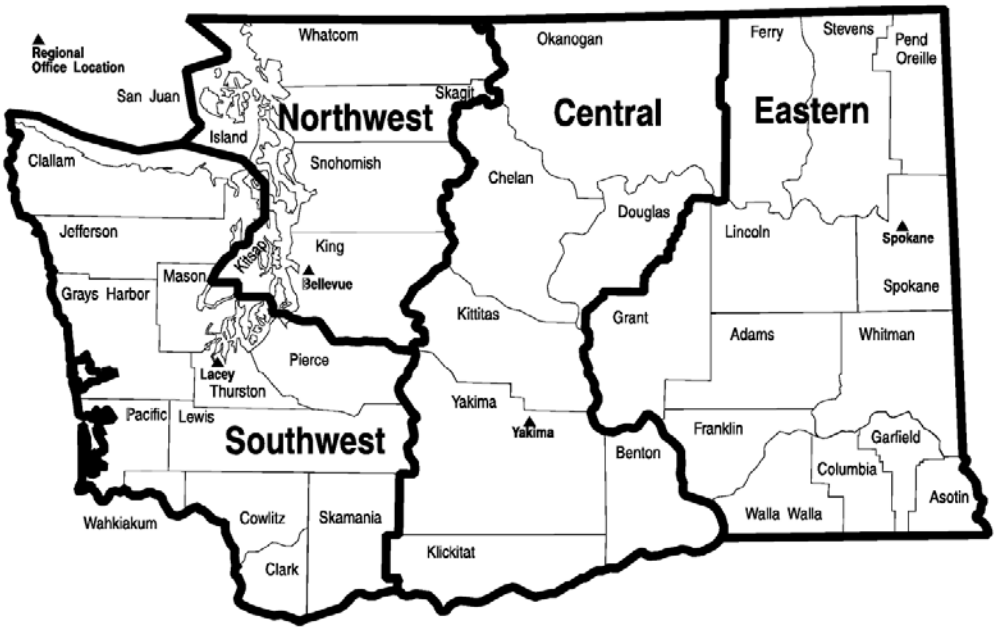
☐ Yes If so, please identify the Ecology staff who approved those steps:

☐ No

Step 4: SUBMITTAL

Please mail your completed form to the Ecology site manager assigned to your Site. If a site manager has not yet been assigned, please mail your completed form to the Ecology regional office for the County in which your Site is located.

Northwest Region: Attn: VCP Coordinator 3190 160th Ave. SE Bellevue, WA 98008-5452	**Central Region:** Attn: VCP Coordinator 1250 West Alder St. Union Gap, WA 98903-0009
Southwest Region: Attn: VCP Coordinator P.O. Box 47775 Olympia, WA 98504-7775	**Eastern Region:** Attn: VCP Coordinator N. 4601 Monroe Spokane WA 99205-1295



APPENDIX F:

PREVIOUS REPORTS

2014

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

May 28, 2014

Blake Perkins
Perkins Northwest Leasing & Financing LLC
2616 NE 112th Avenue
Vancouver, WA 98684

RE: Site Hazard Assessment Completion
Ecology Facility Site ID: 10775

Dear Mr. Blake Perkins:

Clark County Public Health (CCPH) has completed the Site Hazard Assessment (SHA) of the Today's Family Dentistry site at 2616 NE 112th Avenue, Vancouver, WA. The action by CCPH was under the authority of the Washington State Department of Ecology (Ecology) as required by the Model Toxics Control Act (Chapter 70.1 05D RCW).

Based on this work, a hazard ranking of **2** has been assigned to this site. The hazard ranking is an estimation of the potential threat to human health and/or the environment, relative to all other Washington State sites assessed at this time. The ranking scale is 1 to 5, with 1 representing the highest relative risk and 5 the lowest relative risk. The site will be placed on Ecology's Hazardous Sites List, a compilation of these rankings updated twice a year.

Ecology will publish the ranking of this and other recently assessed sites in the August 2014 Site Register Special Issue (Hazardous Sites List). The site hazard ranking will be used in addition to other site-specific considerations in determining Ecology's priority for future actions. Please contact Bryan DeDoncker with CCPH at (360) 397-8153 if you have any questions regarding the SHA of this site. If you have questions about the ranking process, or further activities at the site related to this listing, please call me at (360) 407-6388.

Sincerely,

Cris Matthews
Toxics Cleanup Program
Washington State Department of Ecology

CM/ksc: SHA Result notice for FS 10775

By certified mail: (7012 2210 0002 6581 2007)

cc: Bryan DeDoncker, Clark County Public Health

U.S. Postal Service™
CERTIFIED MAIL™ RECEIPT
(Domestic Mail Only; No Insurance Coverage Provided)

For delivery information visit our website at www.usps.com®

Cris Matthews Site ID: 10775

Postage	$ .48
Certified Fee	3.30
Return Receipt Fee (Endorsement Required)	2.70
Restricted Delivery Fee (Endorsement Required)	
	6.48

MAY 30 2007 Postmark Here

7012 2210 0002 6581 2007

Blake Perkins
Perkins Northwest Leasing & Financing LLC
2616 NE 112th Avenue
Vancouver, WA 98684

SENDER: *COMPLETE THIS SECTION*

- Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.
- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Blake Perkins
Perkins Northwest Leasing & Financing LLC
2616 NE 112th Avenue
Vancouver, WA 98684

COMPLETE THIS SECTION ON DELIVERY

A. Signature
X Dana Boardman ☐ Agent ☒ Addressee

B. Received by *(Printed Name)* C. Date of Delivery 6-2

D. Is delivery address different from item 1? ☐ Yes
If YES, enter delivery address below: ☐ No

e
Mail ☐ Express Mail
ed ☐ Return Receipt for Merchandise
Mail ☐ C.O.D.
Delivery? *(Extra Fee)* ☐ Yes

2. Article Number *(Transfer from serv* 7012 2210 0002 6581 2007

Site ID: 10775 CRIS MATTHEWS

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-1540

SITE HAZARD ASSESSMENT
WORKSHEET 1
Summary Score Sheet

SITE INFORMATION:

Today's Family Dentistry
2616 NE 112th Ave.
Vancouver, Clark County, WA 98684
Section/Township/Range: Sec. 21/T2N/R2E
Latitude: 45.64175 Longitude: -122.55852
Ecology Facility Site ID No.: 10775

Site scored/ranked for the August 2014 update

SITE DESCRIPTION (management areas, substances of concern, and quantities):

The Today's Family Dentistry site was placed on the Washington State Department of Ecology's (Ecology) database of Confirmed and Suspected Contaminated Sites on January 6th, 2011 as a result of a confirmed presence of high concentrations of mercury (Hg) & silver (Cr) in the onsite septic system (OSS). Sludge material in the OSS tank was designated as dangerous waste per WAC 173-303-070.

On February 18th, 2010, Clark County Public Health (CCPH) and Ecology conducted a site investigation to evaluate the OSS waste at the property owner's permission. The tank was evaluated due to concerns that hazardous materials may have been released to the OSS. The investigation confirmed, through direct observation and analytical results, that industrial waste was discharged into the OSS. One sample was collected from the septic tank sludge and analyzed for priority pollutant heavy metals. Test results of the septic tank sludge revealed high levels of mercury, silver, copper, and zinc causing the waste to designate as dangerous waste. See TABLE 1.

TABLE 1: Septic Tank Sludge Sampling Results (Metals)

Sample Name	Analyte	Analytical Result
001	Arsenic	5.38 mg/kg
	Barium	372 mg/kg
	Cadmium	ND
	Chromium	28.1 mg/kg
	Copper	3,210 mg/kg
	Lead	107 mg/kg
	Mercury	4,410 mg/kg
	Nickel	35.4 mg/kg
	Selenium	ND
	Silver	6,940 mg/kg
	Zinc	2,330 mg/kg

Historical records show that the current dental office building was established in the 1983. However, Clark County records show that a pre-existing house on the property was used as a dental office in 1982. The same OSS has been used for the site's wastewater treatment since at least 1982.

The Today's Family Dentistry site is situated immediately outside the 10 year zone of contribution for a major municipal water source serving the City of Vancouver (Water Station 7). Therefore, any potential impact to the groundwater aquifer is a concern for the City of Vancouver and its residents. Due to the potential for groundwater impacts to affect the public's health, subsurface investigation was deemed a necessary component of this SHA.

On December 10, 2012, Ecology sent the property owners a letter notifying them that CCPH will be conducting a Site Hazard Assessment (SHA), on behalf of Ecology, in the near future. On January 30, 2013, CCPH and the property owners scheduled the site visits necessary for conducting the SHA.

On January 31, 2013, Clark County Public Health contracted GPR Data, Inc. to locate septic system components and their depth via ground penetrating radar technology. Ground penetrating radar was a necessary part of the SHA site work for determining ground boring and subsurface sample collection locations. The septic locating ground markings show the location of the 2,000 gallon (approx.) septic tank and three 61ft long (approx.) drainfield laterals that head towards the southern direction. See FIGURE 3.

On February 14, 2013, subsurface soil and groundwater sampling was conducted at the site. Cascade Drilling, L.P., was contracted by CCPH to install four borings, via direct-push boring, for subsurface sample collection near septic system components. The location of the ground borings were determined after considering guidance listed in the U.S. Environmental Protection Agency (EPA) "1992 Guidelines for Closure of Shallow Disposal Wells". See FIGURES 1 & 2.

FIGURE 1: EPA Guidance for OSS Soil Sample Locations (Plan View)

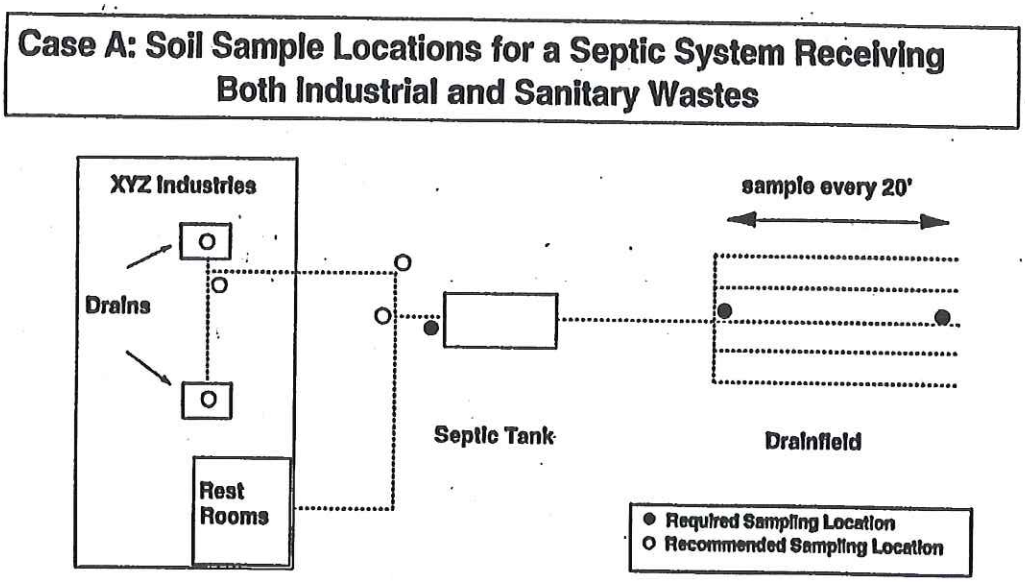


FIGURE 2: EPA Guidance for OSS Soil Sample Locations (Side View)

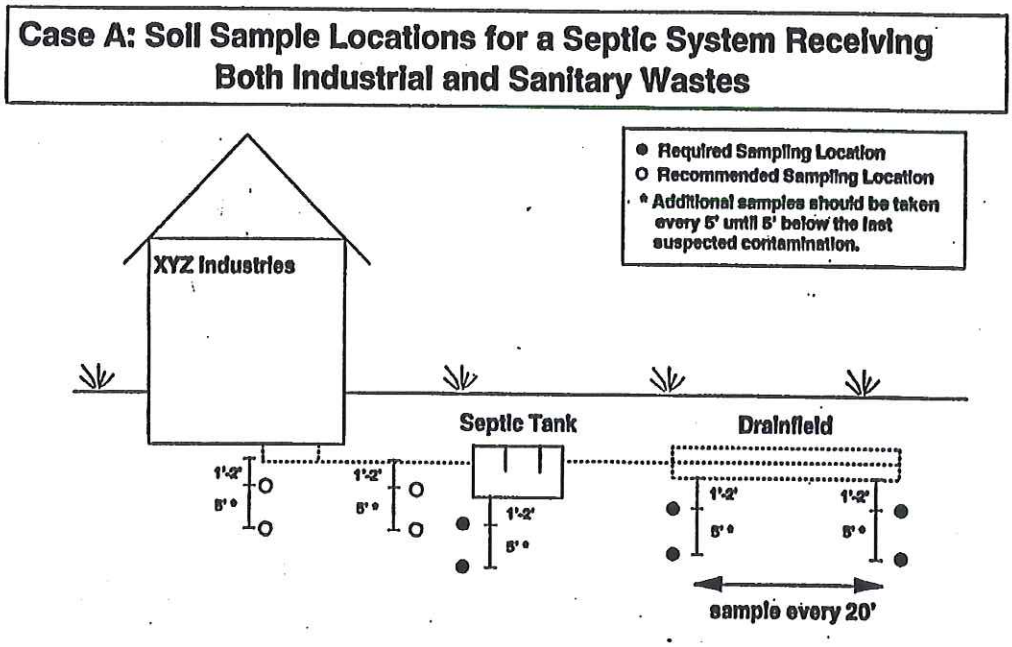


FIGURE 3 displays the approximate location of the septic tank and drainfield laterals (illustrated in red), and approximate location of ground borings B1-B4 (illustrated in green). See FIGURE 3 & TABLE 2 for ground boring location details.

FIGURE 3: OSS Layout & Boring Locations

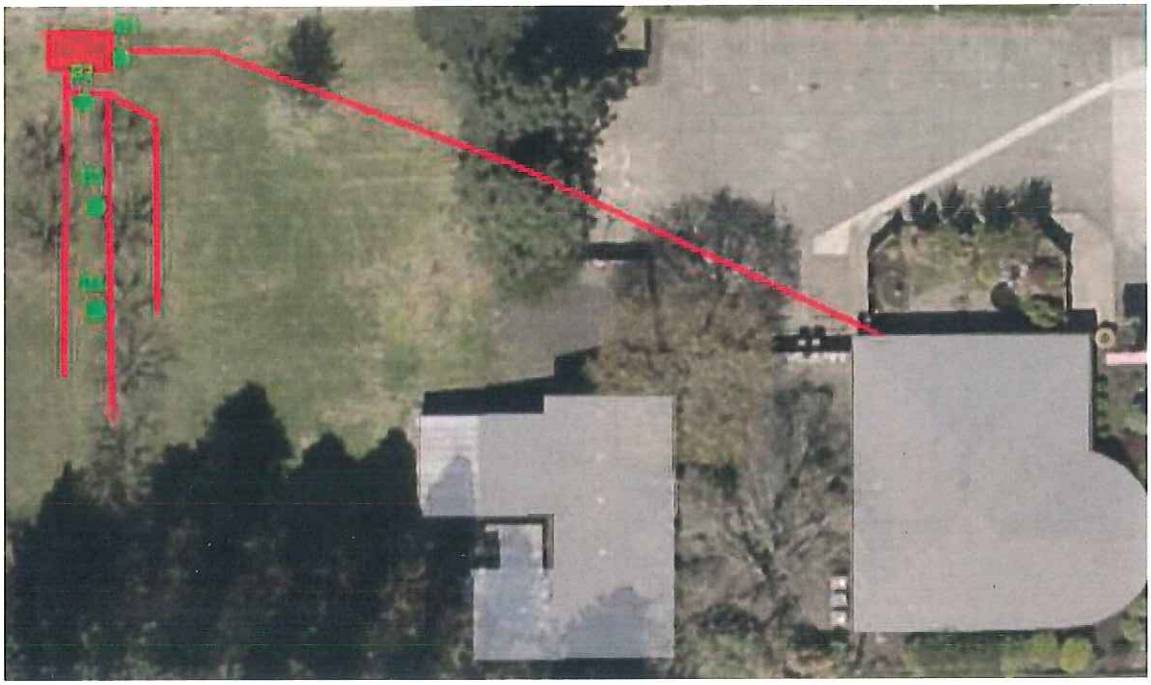


TABLE 2: Ground Boring Log

	Boring Description	Total Depth (bgs)*	Soil Sample Name & Depth (bgs)*	Depth to Groundwater (bgs)*
B1	Located immediately outside the previous septic tank area, near the transport line.	15'	B1-SS1 = 9.5' B1-SS2 = 13.0'	B1-GWS1 = 8.5'
B2	Located approximately 4' from the septic tank area, between the drainfield laterals.	15'	B2-SS1 = 4.5' B2-SS2 = 8.0' B2-SS3 = 13.0'	B2-GWS1 = 9.0'
B3	Located approximately 27' from the septic tank area, between the drainfield laterals.	20'	B3-SS1 = 7.0' B3-SS2 = 10.5' B3-SS3 = 15.5'	B3-GWS1 = 10.0'
B4	Located approximately 50' from the septic tank area, between the drainfield laterals.	20'	B4-SS1 = 7.0' B4-SS2 = 10.5' B4-SS3 = 15.5'	B4-GWS1 = 10.0'

Note: One 10' screen was installed at the bottom of each ground boring. Due to groundwater intrusion, it was determined that ground borings B1-B4 only required a 15-20' bgs installation to adequately collect subsurface soil and groundwater samples.

* The abbreviation (bgs) refers to "below ground surface".

All subsurface soil and groundwater samples were collected and analyzed for Priority Pollutant Metals in accordance with appropriate EPA Methods. Soil cores were not favorable for sample collection and analysis, consisting entirely of loose gravels and sands. Despite unfavorable soil characteristics and a

shallow vadose zone, soil samples were collected at approximate interval depths of 18", 5', & 10' below the bottom of the existing septic tank and/or drainfield lateral (totaling 2-3 soil samples per boring) at each ground boring location. Only 2-3 soil samples were collected instead of 4 due to the shallow depth to groundwater. Only 2 soil samples were collected from boring B1 due to depth of the septic tank in relation to groundwater depth.

Arsenic (As), total chromium (Cr), and lead (Pb) were the metals consistently detected in subsurface soils. Other metals were found at low concentrations (such as mercury & nickel), however As, Cr, and Pb were consistently detected in all soil samples. Chromium (total) was the only contaminant detected in subsurface soil samples exceeding its respective MTCA Method A Cleanup Level of 19 mg/kg. Samples B1-SS1, B1-SS3, B2-SS1, B2-SS2, B2-SS3, B3-SS3, B4-SS2, & B4-SS3 had a chromium (total) exceedance. See TABLE 3 for soil sample results.

TABLE 3: Soil Sample Results

	Soil Sample Name & Depth (bgs)	Soil Description*	Analytical Results (mg/kg)	MTCA Method A Cleanup Level (mg/kg)
B1	B1-SS1 @ 9.5'	loose sand & gravel	Arsenic = 5.9	Arsenic = 20
			Chromium = 18	Chromium VI = 19
			Lead = 5.2	Lead = 250
	B1-SS2 @ 13.0'	loose sand & gravel	Arsenic = 2.9	Arsenic = 20
			Chromium = 17	Chromium VI = 19
			Lead = 4.7	Lead = 250
B2	B2-SS1 @ 4.5'	loose sand & gravel	Arsenic = 3.5	Arsenic = 20
			Chromium = 28	Chromium VI = 19
			Lead = 8.5	Lead = 250
	B2-SS2 @ 8.0'	loose sand & gravel	Arsenic = 2.6	Arsenic = 20
			Chromium = 17	Chromium VI = 19
			Lead = 5.3	Lead = 250
			Mercury = 0.47	Mercury = 2.0
	B2-SS3 @ 13.0'	loose sand & gravel	Arsenic = 2.8	Arsenic = 20
			Chromium = 16	Chromium VI = 19
			Lead = 4.1	Lead = 250
			Mercury = 0.13	Mercury = 2.0
B3	B3-SS1 @ 7.0'	loose sand & gravel	Arsenic = 2.8	Arsenic = 20
			Chromium = 24	Chromium VI = 19
			Lead = 5.5	Lead = 250
	B3-SS2 @ 10.5'	loose sand & gravel	Arsenic = 4.1	Arsenic = 20
			Chromium = 31	Chromium VI = 19
			Lead = 6.2	Lead = 250
	B3-SS3 @ 15.5'	loose sand & gravel	Arsenic = 5.0	Arsenic = 20
			Chromium = 23	Chromium VI = 19
			Lead = 5.3	Lead = 250

B4	B4-SS1 @ 7.0'	loose sand & gravel	Arsenic = 1.9	Arsenic = 20
			Chromium = 18	Chromium VI = 19
			Lead = 4.1	Lead = 250
	B4-SS2 @ 10.5'	loose sand & gravel	Arsenic = 2.2	Arsenic = 20
			Chromium = 14	Chromium VI = 19
			Lead = 5.0	Lead = 250
	B4-SS3 @ 15.5'	loose sand & gravel	Arsenic = 3.6	Arsenic = 20
			Chromium = 20	Chromium VI = 19
			Lead = 5.2	Lead = 250

Note: Since total chromium was analyzed without speciation, the more conservative Chromium VI cleanup level will be used.

*Soil Description – subsurface soils were very poor for the collection and analysis of chemical contaminants. Soil cores & samples consisted solely of loose gravels and sands.

Groundwater samples were collected from each ground boring location in accordance with EPA sampling methods. One 10' screen was set at the bottom of each ground boring. Groundwater samples were then collected, using a peristaltic pump, at approximately 18" above the bottom of each boring and analyzed for priority pollutant heavy metals.

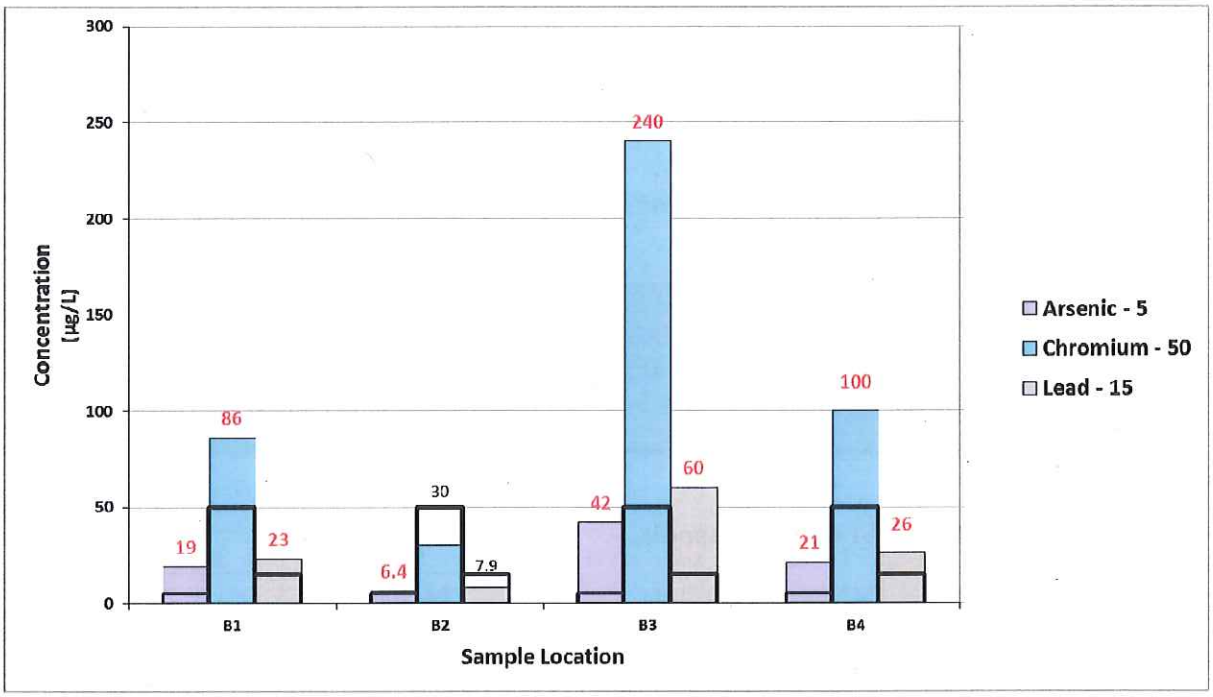
Arsenic and Chromium (total) were found to exceed their respective MTCA Method A Cleanup Levels in Groundwater samples B1-GWS1, B2-GWS1, B3-GWS1, and B4-GWS1. Lead was found to exceed its respective MTCA Method A Cleanup Levels in groundwater samples B1-GWS1, B2-GWS1, and B4-GWS1. Other heavy metals were detected in groundwater (i.e. cadmium, selenium, nickel, mercury, etc...) but concentrations did not exceed their respective MTCA standards. See TABLE 4.

TABLE 4: Groundwater Sample Results

	Groundwater Sample Name & Depth (bgs)	Analytical Results (µg/l)	MTCA Method A Cleanup Level (µg/l)
B1	B1-GWS1 @ 13.5' (approx.)	**Arsenic = 19**	Arsenic = 5
		Chromium = 86	Chromium (total) = 50
		Lead = 23	Lead = 15
		Mercury = 0.98	Mercury = 2.0
B2	B2-GWS1 @ 13.5' (approx.)	**Arsenic = 6.4**	Arsenic = 5
		Chromium = 30	Chromium (total) = 50
		Lead = 7.9	Lead = 15
		Mercury = 0.21	Mercury = 2.0
B3	B3-GWS1 @ 18.5' (approx.)	**Arsenic = 42**	Arsenic = 5
		Chromium = 240	Chromium (total) = 50
		Lead = 60	Lead = 15
		Mercury = 1.3	Mercury = 2.0
B4	B4-GWS1 @ 18.5' (approx.)	**Arsenic = 21**	Arsenic = 5
		Chromium = 100	Chromium (total) = 50
		Lead = 26	Lead = 15
		Mercury = 0.23	Mercury = 2.0

FIGURE 4 displays the As, Cr, & Pb concentrations in groundwater in reference to the ground boring locations and the relative distance of each from the septic tank.

FIGURE 4: Groundwater Data



As a result of this SHA, this site is scored and ranked due to the documented presence of arsenic, chromium, and lead in on-site groundwater exceeding their respective MTCA Method A cleanup levels. The extent of contamination was not determined as part of this SHA. However, further site characterization may be necessary.

SPECIAL CONSIDERATIONS (include limitations in site file data or data which cannot be accommodated in the model, but which are important in evaluating the risk associated with the site, or any other factor(s) over-riding a decision of no further action for the site):

Due to the contamination documented on-site being primarily subsurface, the surface water and air routes are not applicable for WARM scoring for this site. Thus, only the groundwater route will be scored.

ROUTE SCORES:

Surface Water/Human Health:	**NS**	Surface Water/Environmental.:	**NS**
Air/Human Health:	**NS**	Air/Environmental:	**NS**
Groundwater/Human Health:	**74.8**		

OVERALL RANK: 2

WORKSHEET 2
Route Documentation

1. **SURFACE WATER ROUTE** – *Not Scored*

   a. List those substances to be considered for scoring: Source: __

   b. Explain basis for choice of substance(s) to be used in scoring.

   c. List those management units to be considered for scoring: Source: __

   d. Explain basis for choice of unit to be used in scoring:

2. **AIR ROUTE** – *Not Scored*

   a. List those substances to be considered for scoring:

   Source: __

   b. Explain basis for choice of substance(s) to be used in scoring:

   c. List those management units to be considered for scoring: Source: __

   d. Explain basis for choice of unit to be used in scoring:

3. **GROUNDWATER ROUTE**

   a. List those substances to be considered for scoring: Source: 1, 2, 8

   Lead, chromium (total), and arsenic.

   b. Explain basis for choice of substance(s) to be used in scoring:

   These substances were detected in subsurface soil and groundwater samples at concentrations exceeding their respective MTCA Method cleanup levels.

   c. List those management units to be considered for scoring: Source: 1, 2, 8

   Subsurface soil and groundwater.

   d. Explain basis for choice of unit to be used in scoring:

   The contaminating substances were detected in subsurface soil and groundwater at concentrations exceeding their respective MTCA Method A cleanup levels.

WORKSHEET 6
Groundwater Route

1.0 SUBSTANCE CHARACTERISTICS

1.1 Human Toxicity

	Substance	Drinking Water Standard (µg/L)	Value	Acute Toxicity (mg/ kg-bw)	Value	Chronic Toxicity (mg/kg/day)	Value	Carcinogenicity		Value
								WOE	PF*	
1	Lead	5	8	-	ND	-	ND	B2	-	ND
2	Chromium	100	6	-	ND	-	3	A	-	ND
3	Arsenic	50	6	763 (rat)	5	0.001	5	A	1.75	7

* *Potency Factor*

Source: 1, 2, 4, 8
Highest Value: 8
(Max = 10)
Plus 2 Bonus Points? 2
Final Toxicity Value: 10
(Max = 12)

1.2 Mobility (use numbers to refer to above listed substances)

Cations/Anions	OR	Solubility (mg/L)
1= 2 + 1 (metals present in solution) = 3		1=
2= 1 + 1 (metals present in solution) = 2		2=
3= 3 + 1 (metals present in solution) = 4		3=

Source: 1, 2, 4, 8
Value: 3
(Max = 3)

1.3 Substance Quantity:

Explain basis: Quantity is calculated based on the once filled volume of the septic tank @ 501-1,000 gallons.	Source: 1, 2, 4 **Value: 3** (Max=10)

2.0 MIGRATION POTENTIAL

		Source	Value
2.1	**Containment (explain basis):** Spill, discharge, and contaminated soil (i.e., drain field) = 10	1, 2, 5	**10** (Max = 10)
2.2	**Net precipitation:** 28.14" – 5.7" = 22.44"	5	**3** (Max = 5)
2.3	**Subsurface hydraulic conductivity:** sandy clayey loam	2, 4	**4** (Max = 4)
2.4	**Vertical depth to groundwater:** confirmed release to groundwater	1, 4, 8	**8** (Max = 8)

3.0 TARGETS

		Source	Value
3.1	**Groundwater usage:** public supply, but alternate sources available with minimum hookup requirements	4, 6	**4** (Max = 10)
3.2	**Distance to nearest drinking water well:** >600 – 1,300	4, 6	**4** (Max = 5)
3.3	**Population served within 2 miles: √ pop.** = >10,000	4, 6	**100** (Max = 100)
3.4	**Area irrigated by (groundwater) wells within 2 miles:** 1,544 **(0.75)*√# acres** = 29.5	7	**30** (Max = 50)

4.0 RELEASE

	Source	Value
Explain basis for scoring a release to groundwater: Confirmed groundwater contamination by laboratory analysis, only.	1, 8	**5** (Max = 5)

SOURCES USED IN SCORING

1. Initial Investigation by Clark County Public Health, May 14, 2010.
2. Soil Survey of Clark County, Washington, November 1972.
3. Washington State Department of Ecology, Toxicology Database for Use in Washington Ranking Method Scoring, January 1992.
4. Washington State Department of Ecology, WARM Scoring Manual, April 1992.
5. Washington Climate – Net Rainfall Table.
6. Arial Photo, GIS Clark County MapsOnline.
7. Washington State Department of Ecology, Water Rights Application System (WRATS) printout for two-mile radius of site.
8. Analytical Report, by TestAmerica Laboratories, Inc., February 2013.
9. Clean-Out and Remediation Required for a septic tank at 2616 NE 112th Avenue, Vancouver, WA 98684, by Department of Ecology, March 26, 2010.

2013

proud past, promising future
CLARK COUNTY
WASHINGTON

March 7, 2013

Dr. Blake Perkins
2616 NE 112th Ave.
Vancouver, WA 98684

RE: Today's Family Dentistry

SITE ADDRESS: 2616 NE 112th Ave., Vancouver, WA 98684
#36 LOT 2 J P BERSCH EST .82A
Tax Parcel ID: 162643000

Dr. Perkins,

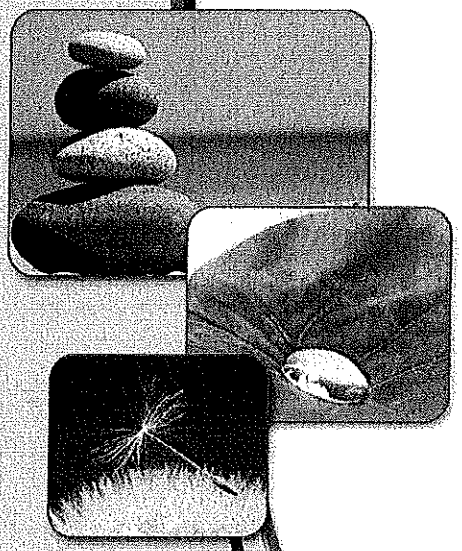
Clark County Public Health (CCPH) would like to thank you for your cooperation in resolving the onsite septic system (OSS) issue at 2616 NE 112th Ave., Vancouver, WA 98684. On March 19, 2010, CCPH issued you a letter explaining that your OSS was in violation of Clark County Code 24.17 and Chapter 246-272A of the Washington Administrative Code (WAC) for containing non-residential strength sewage.

On August 18, 2010, Department of Ecology's Hazardous Waste and Toxics reduction Program (HWTR) issued a "Septic Tank Clean-out and Return to Compliance" letter acknowledging the removal of all non-residential strength sewage from the septic tank. All non-residential strength waste found in the OSS was designated, removed, and properly disposed. The OSS was then properly abandoned and decommissioned, followed by connection to City of Vancouver public sewer. Therefore, no further corrective action is needed to address the violations of Clark County Code 24.17 or Chapter 246-272A WAC. To see if further action is required by Ecology's Toxics Cleanup Program (TCP), please contact Scott Rose at (360) 407-6347 or sros461@ecy.wa.gov.

Please call me at **(360) 397-8153** if you have questions regarding your former OSS. Clark County Public Health appreciates your willingness to address public health concerns within the community.

Bryan DeDoncker
Environmental Health Specialist

P.O. Box 9825 • Vancouver, WA 98666-8825 • tel: [360] 397-8428 • fax: [360] 397-8084 • www.clark.wa.gov



LINKS

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THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Portland
9405 SW Nimbus Ave.
Beaverton, OR 97008
Tel: (503)906-9200

TestAmerica Job ID: 250-10041-1
Client Project/Site: Today's Family Dentistry
Revision: 1

For:
Clark County Environmental Health
PO BOX 9825
Vancouver, Washington 98666

Attn: Bryan DeDoncker

Erica Fot

Authorized for release by:
2/22/2013 3:38:58 PM
Erica Fot
Project Mgmt. Assistant
erica.fot@testamericainc.com

Designee for

Vanessa Frahs
Project Manager I
vanessa.frahs@testamericainc.com

Table of Contents

Sample Summary

Client: Clark County Environmental Health
Project/Site: Today's Family Dentistry

TestAmerica Job ID: 250-10041-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
250-10041-1	B1-SS1	Solid	02/14/13 08:45	02/15/13 10:56
250-10041-2	B1-SS2	Solid	02/14/13 08:55	02/15/13 10:56
250-10041-3	B2-SS1	Solid	02/14/13 09:30	02/15/13 10:56
250-10041-4	B2-SS2	Solid	02/14/13 09:35	02/15/13 10:56
250-10041-5	B2-SS3	Solid	02/14/13 09:40	02/15/13 10:56
250-10041-6	B3-SS1	Solid	02/14/13 10:00	02/15/13 10:56
250-10041-7	B3-SS2	Solid	02/14/13 10:05	02/15/13 10:56
250-10041-8	B3-SS3	Solid	02/14/13 10:10	02/15/13 10:56
250-10041-9	B4-SS1	Solid	02/14/13 10:50	02/15/13 10:56
250-10041-10	B4-SS2	Solid	02/14/13 11:00	02/15/13 10:56
250-10041-11	B4-SS3	Solid	02/14/13 11:05	02/15/13 10:56
250-10041-12	B1-GWSI	Water	02/14/13 09:15	02/15/13 10:56
250-10041-13	B2-GWSI	Water	02/14/13 09:50	02/15/13 10:56
250-10041-14	B3-GWSI	Water	02/14/13 10:25	02/15/13 10:56
250-10041-15	B4-GWSI	Water	02/14/13 11:15	02/15/13 10:56

Case Narrative

Client: Clark County Environmental Health
Project/Site: Today's Family Dentistry

TestAmerica Job ID: 250-10041-1

Job ID: 250-10041-1

Laboratory: TestAmerica Portland

4

Narrative

Job Narrative
250-10041-1

Comments
No additional comments.

Receipt
The samples were received on 2/15/2013 10:56 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 3 coolers at receipt time were 10.7° C, 11.3° C and 11.8° C.

Except:

The following sample(s) was received at the laboratory outside the required temperature criteria: B1-GWSI (250-10041-12), B1-SS1 (250-10041-1), B1-SS2 (250-10041-2), B2-GWSI (250-10041-13), B2-SS1 (250-10041-3), B2-SS2 (250-10041-4), B2-SS3 (250-10041-5), B3-GWSI (250-10041-14), B3-SS1 (250-10041-6), B3-SS2 (250-10041-7), B3-SS3 (250-10041-8), B4-GWSI (250-10041-15), B4-SS1 (250-10041-9), B4-SS2 (250-10041-10), B4-SS3 (250-10041-11). The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

Metals
Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 14289 were outside control limits with respect to Sb. The associated laboratory control sample (LCS) recovery met acceptance criteria. (250-10040-1 MS)

Method(s) 6020: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for batch 14290 were outside control limits with respect to Sb. The associated laboratory control sample (LCS) recovery met acceptance criteria. (250-10041-6 MS), (250-10041-6 MSD)

No other analytical or quality issues were noted.

Qualifiers

Metals

Qualifier	Qualifier Description
F	MS or MSD exceeds the control limits

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Method: 200.8 - Metals (ICP/MS)

Client Sample ID: B1-GWSI
Date Collected: 02/14/13 09:15
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Arsenic	19		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Beryllium	2.2		2.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Cadmium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Chromium	86		2.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Copper	120		2.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Lead	23		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Nickel	52		2.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Selenium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Silver	5.5		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Thallium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:28	1
Zinc	190		10		ug/L		02/18/13 08:27	02/18/13 17:28	1

Client Sample ID: B2-GWSI
Date Collected: 02/14/13 09:50
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Arsenic	6.4		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Beryllium	ND		2.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Cadmium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Chromium	30		2.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Copper	48		2.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Lead	7.9		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Nickel	25		2.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Selenium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Silver	1.8		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Thallium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:31	1
Zinc	83		10		ug/L		02/18/13 08:27	02/18/13 17:31	1

Client Sample ID: B3-GWSI
Date Collected: 02/14/13 10:25
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Arsenic	42		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Beryllium	ND		10		ug/L		02/18/13 08:27	02/18/13 20:05	5
Cadmium	1.0		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Chromium	240		2.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Copper	330		2.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Lead	60		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Nickel	180		2.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Selenium	2.2		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Silver	1.8		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Thallium	1.4		1.0		ug/L		02/18/13 08:27	02/18/13 17:34	1
Zinc	530		10		ug/L		02/18/13 08:27	02/18/13 17:34	1

Client: Clark County Environmental Health
Project/Site: Today's Family Dentistry

TestAmerica Job ID: 250-10041-1

Method: 200.8 - Metals (ICP/MS)

Client Sample ID: B4-GWSI
Date Collected: 02/14/13 11:15
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Arsenic	**21**		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Beryllium	**2.7**		2.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Cadmium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Chromium	**100**		2.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Copper	**160**		2.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Lead	**26**		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Nickel	**80**		2.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Selenium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Silver	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Thallium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 17:37	1
Zinc	**240**		10		ug/L		02/18/13 08:27	02/18/13 17:37	1

Method: 6020 - Metals (ICP/MS)

Client Sample ID: B1-SS1
Date Collected: 02/14/13 08:45
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-1
Matrix: Solid
Percent Solids: 85.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Antimony	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Beryllium	ND		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Thallium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Nickel	18		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Silver	2.1		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Arsenic	5.9		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Copper	37		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Lead	5.2		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Zinc	74		11		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Selenium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20
Chromium	18		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:10	20

Client Sample ID: B1-SS2
Date Collected: 02/14/13 08:55
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-2
Matrix: Solid
Percent Solids: 84.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Antimony	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Beryllium	ND		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Thallium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Nickel	15		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Silver	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Arsenic	2.9		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Copper	35		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Lead	4.7		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Zinc	73		11		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Selenium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20
Chromium	17		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:13	20

Client Sample ID: B2-SS1
Date Collected: 02/14/13 09:30
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-3
Matrix: Solid
Percent Solids: 82.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Antimony	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Beryllium	ND		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Thallium	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Nickel	27		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Silver	12		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Arsenic	3.5		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Copper	65		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Lead	8.5		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Zinc	110		12		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Selenium	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20
Chromium	28		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:24	20

Method: 6020 - Metals (ICP/MS)

Client Sample ID: B2-SS2
Date Collected: 02/14/13 09:35
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-4
Matrix: Solid
Percent Solids: 81.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Antimony	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Beryllium	ND		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Thallium	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Nickel	17		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Silver	2.2		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Arsenic	2.6		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Copper	31		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Lead	5.3		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Zinc	88		12		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Selenium	ND		1.2		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20
Chromium	17		2.4		mg/Kg	☼	02/16/13 14:17	02/17/13 16:27	20

Client Sample ID: B2-SS3
Date Collected: 02/14/13 09:40
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-5
Matrix: Solid
Percent Solids: 84.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Antimony	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Beryllium	ND		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Thallium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Nickel	17		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Silver	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Arsenic	2.8		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Copper	27		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Lead	4.1		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Zinc	67		11		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Selenium	ND		1.1		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20
Chromium	16		2.3		mg/Kg	☼	02/16/13 14:17	02/17/13 16:31	20

Client Sample ID: B3-SS1
Date Collected: 02/14/13 10:00
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-6
Matrix: Solid
Percent Solids: 84.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Antimony	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Beryllium	ND		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Thallium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Nickel	25		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Silver	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Arsenic	2.8		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Copper	37		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Lead	5.5		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Zinc	84		12		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Selenium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20
Chromium	24		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 16:51	20

Method: 6020 - Metals (ICP/MS)

Client Sample ID: B3-SS2
Date Collected: 02/14/13 10:05
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-7
Matrix: Solid
Percent Solids: 70.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Antimony	ND		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Beryllium	ND		2.8		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Thallium	ND		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Nickel	27		2.8		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Silver	ND		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Arsenic	4.1		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Copper	45		2.8		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Lead	6.2		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Zinc	84		14		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Selenium	ND		1.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20
Chromium	31		2.8		mg/Kg	☼	02/16/13 14:21	02/17/13 17:01	20

Client Sample ID: B3-SS3
Date Collected: 02/14/13 10:10
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-8
Matrix: Solid
Percent Solids: 80.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Antimony	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Beryllium	ND		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Thallium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Nickel	19		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Silver	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Arsenic	5.0		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Copper	40		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Lead	5.3		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Zinc	78		12		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Selenium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20
Chromium	23		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:04	20

Client Sample ID: B4-SS1
Date Collected: 02/14/13 10:50
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-9
Matrix: Solid
Percent Solids: 84.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Antimony	ND		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Beryllium	ND		2.3		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Thallium	ND		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Nickel	17		2.3		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Silver	ND		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Arsenic	1.9		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Copper	30		2.3		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Lead	4.1		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Zinc	62		11		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Selenium	ND		1.1		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20
Chromium	18		2.3		mg/Kg	☼	02/16/13 14:21	02/17/13 17:08	20

Method: 6020 - Metals (ICP/MS)

Client Sample ID: B4-SS2
Date Collected: 02/14/13 11:00
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-10
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Antimony	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Beryllium	ND		2.5		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Thallium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Nickel	13		2.5		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Silver	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Arsenic	2.2		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Copper	28		2.5		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Lead	5.0		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Zinc	86		12		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Selenium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20
Chromium	14		2.5		mg/Kg	☼	02/16/13 14:21	02/17/13 17:11	20

Client Sample ID: B4-SS3
Date Collected: 02/14/13 11:05
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-11
Matrix: Solid
Percent Solids: 81.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Antimony	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Beryllium	ND		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Thallium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Nickel	20		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Silver	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Arsenic	3.6		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Copper	34		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Lead	5.2		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Zinc	81		12		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Selenium	ND		1.2		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20
Chromium	20		2.4		mg/Kg	☼	02/16/13 14:21	02/17/13 17:21	20

Method: 7470A - Mercury (CVAA)

Client Sample ID: B1-GWSI
Date Collected: 02/14/13 09:15
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-12
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.98		0.20		ug/L		02/17/13 16:30	02/18/13 17:25	1

Client Sample ID: B2-GWSI
Date Collected: 02/14/13 09:50
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-13
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.21		0.20		ug/L		02/17/13 16:30	02/18/13 17:28	1

Client Sample ID: B3-GWSI
Date Collected: 02/14/13 10:25
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-14
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	1.3		0.20		ug/L		02/17/13 16:30	02/18/13 17:30	1

Client Sample ID: B4-GWSI
Date Collected: 02/14/13 11:15
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-15
Matrix: Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.23		0.20		ug/L		02/17/13 16:30	02/18/13 17:33	1

Method: 7471A - Mercury (CVAA)

Client Sample ID: B1-SS1
Date Collected: 02/14/13 08:45
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-1
Matrix: Solid
Percent Solids: 85.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	02/20/13 16:58	02/21/13 01:06	1

Client Sample ID: B1-SS2
Date Collected: 02/14/13 08:55
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-2
Matrix: Solid
Percent Solids: 84.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.096		mg/Kg	☼	02/20/13 16:58	02/21/13 01:08	1

Client Sample ID: B2-SS1
Date Collected: 02/14/13 09:30
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-3
Matrix: Solid
Percent Solids: 82.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.47		0.12		mg/Kg	☼	02/20/13 16:58	02/21/13 01:16	1

Client Sample ID: B2-SS2
Date Collected: 02/14/13 09:35
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-4
Matrix: Solid
Percent Solids: 81.6

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.13		0.10		mg/Kg	☼	02/20/13 16:58	02/21/13 01:19	1

Client Sample ID: B2-SS3
Date Collected: 02/14/13 09:40
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-5
Matrix: Solid
Percent Solids: 84.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	02/20/13 16:58	02/21/13 01:21	1

Client Sample ID: B3-SS1
Date Collected: 02/14/13 10:00
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-6
Matrix: Solid
Percent Solids: 84.3

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	02/20/13 16:58	02/21/13 01:24	1

Client Sample ID: B3-SS2
Date Collected: 02/14/13 10:05
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-7
Matrix: Solid
Percent Solids: 70.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.14		mg/Kg	☼	02/20/13 16:58	02/21/13 01:26	1

Client Sample ID: B3-SS3
Date Collected: 02/14/13 10:10
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-8
Matrix: Solid
Percent Solids: 80.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.10		mg/Kg	☼	02/20/13 16:58	02/21/13 01:29	1

Client Sample ID: B4-SS1
Date Collected: 02/14/13 10:50
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-9
Matrix: Solid
Percent Solids: 84.5

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	02/20/13 16:58	02/21/13 01:31	1

Method: 7471A - Mercury (CVAA)

Client Sample ID: B4-SS2
Date Collected: 02/14/13 11:00
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-10
Matrix: Solid
Percent Solids: 77.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	02/20/13 16:58	02/21/13 01:34	1

Client Sample ID: B4-SS3
Date Collected: 02/14/13 11:05
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-11
Matrix: Solid
Percent Solids: 81.1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.11		mg/Kg	☼	02/20/13 16:58	02/21/13 01:36	1

General Chemistry

Client Sample ID: B1-SS1
Date Collected: 02/14/13 08:45
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-1
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	14		0.010		%			02/16/13 14:26	1
Percent Solids	86		0.010		%			02/16/13 14:26	1

Client Sample ID: B1-SS2
Date Collected: 02/14/13 08:55
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-2
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		0.010		%			02/16/13 14:26	1
Percent Solids	84		0.010		%			02/16/13 14:26	1

Client Sample ID: B2-SS1
Date Collected: 02/14/13 09:30
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-3
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18		0.010		%			02/16/13 14:26	1
Percent Solids	82		0.010		%			02/16/13 14:26	1

Client Sample ID: B2-SS2
Date Collected: 02/14/13 09:35
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-4
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	18		0.010		%			02/16/13 14:26	1
Percent Solids	82		0.010		%			02/16/13 14:26	1

Client Sample ID: B2-SS3
Date Collected: 02/14/13 09:40
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-5
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		0.010		%			02/16/13 14:26	1
Percent Solids	84		0.010		%			02/16/13 14:26	1

Client Sample ID: B3-SS1
Date Collected: 02/14/13 10:00
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-6
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		0.010		%			02/16/13 14:26	1
Percent Solids	84		0.010		%			02/16/13 14:26	1

Client Sample ID: B3-SS2
Date Collected: 02/14/13 10:05
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-7
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	29		0.010		%			02/16/13 14:26	1
Percent Solids	71		0.010		%			02/16/13 14:26	1

Client Sample ID: B3-SS3
Date Collected: 02/14/13 10:10
Date Received: 02/15/13 10:56
Lab Sample ID: 250-10041-8
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	20		0.010		%			02/16/13 14:31	1
Percent Solids	80		0.010		%			02/16/13 14:31	1

General Chemistry

Client Sample ID: B4-SS1
Date Collected: 02/14/13 10:50
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-9
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	16		0.010		%			02/16/13 14:31	1
Percent Solids	84		0.010		%			02/16/13 14:31	1

Client Sample ID: B4-SS2
Date Collected: 02/14/13 11:00
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-10
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23		0.010		%			02/16/13 14:31	1
Percent Solids	77		0.010		%			02/16/13 14:31	1

Client Sample ID: B4-SS3
Date Collected: 02/14/13 11:05
Date Received: 02/15/13 10:56

Lab Sample ID: 250-10041-11
Matrix: Solid

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	19		0.010		%			02/16/13 14:31	1
Percent Solids	81		0.010		%			02/16/13 14:31	1

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 250-14302/1-A
Matrix: Water
Analysis Batch: 14334

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14302

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Arsenic	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Beryllium	ND		2.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Cadmium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Chromium	ND		2.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Copper	ND		2.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Lead	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Nickel	ND		2.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Selenium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Silver	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Thallium	ND		1.0		ug/L		02/18/13 08:27	02/18/13 16:43	1
Zinc	ND		10		ug/L		02/18/13 08:27	02/18/13 16:43	1

Lab Sample ID: LCS 250-14302/2-A
Matrix: Water
Analysis Batch: 14334

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14302

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	50.0	51.0		ug/L		102	85 - 115
Arsenic	100	104		ug/L		104	85 - 115
Beryllium	50.0	50.1		ug/L		100	85 - 115
Cadmium	100	103		ug/L		103	85 - 115
Chromium	100	107		ug/L		107	85 - 115
Copper	100	105		ug/L		105	85 - 115
Lead	100	105		ug/L		105	85 - 115
Nickel	100	103		ug/L		103	85 - 115
Selenium	100	103		ug/L		103	85 - 115
Silver	50.0	52.5		ug/L		105	85 - 115
Thallium	50.0	51.3		ug/L		103	85 - 115
Zinc	100	104		ug/L		104	85 - 115

Lab Sample ID: 250-10042-C-2-B MS
Matrix: Water
Analysis Batch: 14334

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14302

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Antimony	1.4		50.0	56.9		ug/L		111	70 - 130
Arsenic	16		100	124		ug/L		107	70 - 130
Beryllium	ND		50.0	46.4		ug/L		93	70 - 130
Cadmium	ND		100	107		ug/L		107	70 - 130
Chromium	5.5		100	111		ug/L		106	70 - 130
Copper	17		100	116		ug/L		98	70 - 130
Lead	ND		100	98.4		ug/L		98	70 - 130
Nickel	3.2		100	99.6		ug/L		96	70 - 130
Selenium	3.1		100	116		ug/L		113	70 - 130
Silver	ND		50.0	51.0		ug/L		102	70 - 130
Thallium	ND		50.0	47.4		ug/L		95	70 - 130
Zinc	ND		100	104		ug/L		97	70 - 130

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 250-10042-C-1-B DU
Matrix: Water
Analysis Batch: 14334

Client Sample ID: Duplicate
Prep Type: Total/NA
Prep Batch: 14302

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	4.0		3.91		ug/L		1	20
Arsenic	13		12.9		ug/L		3	20
Beryllium	ND		ND		ug/L		NC	20
Cadmium	ND		ND		ug/L		NC	20
Chromium	ND		ND		ug/L		NC	20
Copper	5.0		5.10		ug/L		2	20
Lead	ND		ND		ug/L		NC	20
Nickel	ND		ND		ug/L		NC	20
Selenium	2.7		2.52		ug/L		8	20
Silver	ND		ND		ug/L		NC	20
Thallium	ND		ND		ug/L		NC	20
Zinc	ND		ND		ug/L		NC	20

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 250-14289/1-A
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14289

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Antimony	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Beryllium	ND		0.99		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Thallium	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Nickel	ND		0.99		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Silver	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Arsenic	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Copper	ND		0.99		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Lead	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Zinc	ND		4.9		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Selenium	ND		0.49		mg/Kg		02/16/13 14:17	02/17/13 15:03	10
Chromium	ND		0.99		mg/Kg		02/16/13 14:17	02/17/13 15:03	10

Lab Sample ID: LCS 250-14289/2-A
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14289

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	49.9	53.6		mg/Kg		107	80 - 120
Antimony	25.0	26.8		mg/Kg		107	80 - 120
Beryllium	25.0	25.9		mg/Kg		104	80 - 120
Thallium	25.0	26.5		mg/Kg		106	80 - 120
Nickel	49.9	52.5		mg/Kg		105	80 - 120
Silver	25.0	27.2		mg/Kg		109	80 - 120
Arsenic	49.9	52.4		mg/Kg		105	80 - 120
Copper	49.9	53.1		mg/Kg		106	80 - 120
Lead	49.9	54.3		mg/Kg		109	80 - 120
Zinc	49.9	52.9		mg/Kg		106	80 - 120

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 250-14289/2-A
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14289

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Selenium	49.9	52.3		mg/Kg		105	80 - 120
Chromium	49.9	54.5		mg/Kg		109	80 - 120

Lab Sample ID: 250-10040-A-1-B MS
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14289

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		56.9	55.2		mg/Kg	☼	97	75 - 125
Antimony	ND		28.4	19.0	F	mg/Kg	☼	66	75 - 125
Beryllium	ND		28.4	25.8		mg/Kg	☼	89	75 - 125
Thallium	ND		28.4	26.8		mg/Kg	☼	94	75 - 125
Nickel	18		56.9	66.5		mg/Kg	☼	85	75 - 125
Silver	ND		28.4	27.7		mg/Kg	☼	97	75 - 125
Arsenic	2.8		56.9	53.2		mg/Kg	☼	89	75 - 125
Copper	35		56.9	83.4		mg/Kg	☼	85	75 - 125
Lead	11		56.9	64.2		mg/Kg	☼	93	75 - 125
Zinc	74		56.9	119		mg/Kg	☼	78	75 - 125
Selenium	ND		56.9	51.4		mg/Kg	☼	90	75 - 125
Chromium	21		56.9	69.1		mg/Kg	☼	84	75 - 125

Lab Sample ID: 250-10040-A-1-C MSD
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14289

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		58.4	63.5		mg/Kg	☼	108	75 - 125	14	40
Antimony	ND		29.2	23.2		mg/Kg	☼	79	75 - 125	20	40
Beryllium	ND		29.2	29.6		mg/Kg	☼	99	75 - 125	14	40
Thallium	ND		29.2	30.8		mg/Kg	☼	105	75 - 125	14	40
Nickel	18		58.4	73.4		mg/Kg	☼	95	75 - 125	10	40
Silver	ND		29.2	32.0		mg/Kg	☼	109	75 - 125	14	40
Arsenic	2.8		58.4	60.2		mg/Kg	☼	98	75 - 125	12	40
Copper	35		58.4	93.5		mg/Kg	☼	100	75 - 125	11	40
Lead	11		58.4	73.2		mg/Kg	☼	106	75 - 125	13	40
Zinc	74		58.4	129		mg/Kg	☼	93	75 - 125	8	40
Selenium	ND		58.4	58.9		mg/Kg	☼	101	75 - 125	13	40
Chromium	21		58.4	76.0		mg/Kg	☼	94	75 - 125	10	40

Lab Sample ID: MB 250-14290/1-A
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Antimony	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Beryllium	ND		0.99		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Thallium	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Nickel	ND		0.99		mg/Kg		02/16/13 14:21	02/17/13 16:41	10

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 250-14290/1-A
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14290

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Arsenic	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Copper	ND		0.99		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Lead	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Zinc	ND		4.9		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Selenium	ND		0.49		mg/Kg		02/16/13 14:21	02/17/13 16:41	10
Chromium	ND		0.99		mg/Kg		02/16/13 14:21	02/17/13 16:41	10

Lab Sample ID: LCS 250-14290/2-A
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14290

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	49.8	51.4		mg/Kg		103	80 - 120
Antimony	24.9	25.7		mg/Kg		103	80 - 120
Beryllium	24.9	24.5		mg/Kg		98	80 - 120
Thallium	24.9	25.2		mg/Kg		101	80 - 120
Nickel	49.8	50.3		mg/Kg		101	80 - 120
Silver	24.9	26.0		mg/Kg		104	80 - 120
Arsenic	49.8	50.5		mg/Kg		101	80 - 120
Copper	49.8	51.3		mg/Kg		103	80 - 120
Lead	49.8	52.4		mg/Kg		105	80 - 120
Zinc	49.8	51.5		mg/Kg		103	80 - 120
Selenium	49.8	50.3		mg/Kg		101	80 - 120
Chromium	49.8	52.7		mg/Kg		106	80 - 120

Lab Sample ID: 250-10041-6 MS
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: B3-SS1
Prep Type: Total/NA
Prep Batch: 14290

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		58.6	65.4		mg/Kg	☼	111	75 - 125
Antimony	ND		29.3	18.5	F	mg/Kg	☼	63	75 - 125
Beryllium	ND		29.3	29.9		mg/Kg	☼	100	75 - 125
Thallium	ND		29.3	31.4		mg/Kg	☼	107	75 - 125
Nickel	25		58.6	83.7		mg/Kg	☼	101	75 - 125
Silver	ND		29.3	32.4		mg/Kg	☼	110	75 - 125
Arsenic	2.8		58.6	63.8		mg/Kg	☼	104	75 - 125
Copper	37		58.6	99.6		mg/Kg	☼	106	75 - 125
Lead	5.5		58.6	68.4		mg/Kg	☼	107	75 - 125
Zinc	84		58.6	140		mg/Kg	☼	97	75 - 125
Selenium	ND		58.6	61.5		mg/Kg	☼	105	75 - 125
Chromium	24		58.6	86.5		mg/Kg	☼	106	75 - 125

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 250-10041-6 MSD
Matrix: Solid
Analysis Batch: 14322

Client Sample ID: B3-SS1
Prep Type: Total/NA
Prep Batch: 14290

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		58.0	66.4		mg/Kg	☼	114	75 - 125	1	40
Antimony	ND		29.0	19.9	F	mg/Kg	☼	68	75 - 125	8	40
Beryllium	ND		29.0	30.0		mg/Kg	☼	101	75 - 125	0	40
Thallium	ND		29.0	31.9		mg/Kg	☼	109	75 - 125	2	40
Nickel	25		58.0	83.9		mg/Kg	☼	102	75 - 125	0	40
Silver	ND		29.0	33.0		mg/Kg	☼	113	75 - 125	2	40
Arsenic	2.8		58.0	65.2		mg/Kg	☼	108	75 - 125	2	40
Copper	37		58.0	100		mg/Kg	☼	108	75 - 125	1	40
Lead	5.5		58.0	69.0		mg/Kg	☼	109	75 - 125	1	40
Zinc	84		58.0	149		mg/Kg	☼	113	75 - 125	6	40
Selenium	ND		58.0	62.4		mg/Kg	☼	107	75 - 125	1	40
Chromium	24		58.0	89.0		mg/Kg	☼	111	75 - 125	3	40

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 250-14301/1-A
Matrix: Water
Analysis Batch: 14333

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14301

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20		ug/L		02/17/13 16:30	02/18/13 16:56	1

Lab Sample ID: LCS 250-14301/2-A
Matrix: Water
Analysis Batch: 14333

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14301

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	5.00	5.00		ug/L		100	85 - 115

Lab Sample ID: 250-10040-D-13-B MS
Matrix: Water
Analysis Batch: 14333

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14301

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	1.2		5.00	5.78		ug/L		92	75 - 125

Lab Sample ID: 250-10040-D-13-C MSD
Matrix: Water
Analysis Batch: 14333

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14301

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	1.2		5.00	5.75		ug/L		91	75 - 125	0	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 250-14408/1-A
Matrix: Solid
Analysis Batch: 14415

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 14408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.095		mg/Kg		02/20/13 16:58	02/21/13 00:27	1

Lab Sample ID: LCS 250-14408/2-A
Matrix: Solid
Analysis Batch: 14415

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 14408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.584	0.629		mg/Kg		108	80 - 120

Lab Sample ID: 250-10040-A-4-D MS
Matrix: Solid
Analysis Batch: 14415

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 14408

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		0.703	0.774		mg/Kg	☼	106	75 - 125

Lab Sample ID: 250-10040-A-4-E MSD
Matrix: Solid
Analysis Batch: 14415

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 14408

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.670	0.745		mg/Kg	☼	107	75 - 125	4	40

Method: D2216-80 - Percent Dry Weight (Solids) per ASTM D2216-80

Lab Sample ID: 250-10040-A-1 DU
Matrix: Solid
Analysis Batch: 14292

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	16		15		%		6	20
Percent Solids	84		85		%		1	20

Lab Sample ID: 250-10041-8 DU
Matrix: Solid
Analysis Batch: 14293

Client Sample ID: B3-SS3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	20		21		%		4	20
Percent Solids	80		79		%		1	20

Certification Summary

Client: Clark County Environmental Health
Project/Site: Today's Family Dentistry

TestAmerica Job ID: 250-10041-1

Laboratory: TestAmerica Portland

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	OR00040	06-30-13
Alaska (UST)	State Program	10	UST-012	12-26-13
California	State Program	9	2597	09-30-13
Oregon	NELAP	10	OR100021	01-09-14
USDA	Federal		P330-11-00092	02-17-14
Washington	State Program	10	C586	06-23-13

8

Method Summary

Client: Clark County Environmental Health
Project/Site: Today's Family Dentistry

TestAmerica Job ID: 250-10041-1

Method	Method Description	Protocol	Laboratory
200.8	Metals (ICP/MS)	EPA	TAL PRT
6020	Metals (ICP/MS)	SW846	TAL PRT
7470A	Mercury (CVAA)	SW846	TAL PRT
7471A	Mercury (CVAA)	SW846	TAL PRT
D2216-80	Percent Dry Weight (Solids) per ASTM D2216-80	ASTM	TAL PRT

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PRT = TestAmerica Portland, 9405 SW Nimbus Ave., Beaverton, OR 97008, TEL (503)906-9200

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

9405 SW Nimbus Ave
503-906-9200 Fax 503-906-9210

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bryan DeDoncker	Site Contact: Bryan DeDoncker	Date: 2/14/13	COC No:
Client Name: Clark County Public Health	Tel/Fax:	Lab Contact:	Carrier:	of COCs
Address: PO Box 9825	Analysis Turnaround Time			Job No. 10041
City/State/Zip: Vancouver, WA 98666	Calendar (C) or Work Days (W)			SDG No.
Phone: 360 397 8153	TAT if different from Below			
FAX: 360 759 1859	☐ 2 weeks			Sampler: Bryan DeDoncker
Project Name: Today's Family Dentistry	☐ 1 week			
Site: Today's Family Dentistry	☐ 2 days standard			
PO #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample (Y/N) Priority P Metals	Sample Specific Notes:
B1-SS1	2/14/13	8:45 Am	Soil		1	✓	
B1-SS2		8:55 Am			1	✓	
[redacted]						✓	
B2-SS1		9:30			1	✓	
B2-SS2		9:35			1	✓	
B2-SS3		9:40			1	✓	
B3-SS1		10:00			1	✓	
B3-SS2		10:05			1	✓	
B3-SS3		10:10			1	✓	
B4-SS1		10:50			1	✓	
B4-SS2		11:00			1	✓	
B4-SS3	↓	11:05	↓		↓	✓	

Page 23 of 27

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☒

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Special Instructions/QC Requirements & Comments:

12/P/B 10.7c / 11.8c / 11.3c

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Joe Ellingson	CETI	2/15/13 945			
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
	Fenley	2/15/13 1056		TAL	2/15/13 @ 1056
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

2/22/2013

TAL-1002 0912

Form No. CA-C-WI-002, Rev. 3.1, dated 07/12/2012

9405 SW Nimbus Ave
Beaverton, OR 97008-7145
503-906-9200 Fax 503-906-9210

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Laboratories, Inc.

Client Contact	Project Manager: Bryan DeDonker	Site Contact: Bryan DeDonker	Date: 2/14/13	COC No:
Client Name: Clark County Public Health	Tel/Fax:	Lab Contact:	Carrier:	____ of ____ COCs
Address: PO Box 9825	Analysis Turnaround Time			Job No.
City/State/Zip: Vancouver, WA 98666	Calendar (C) or Work Days (W)			
Phone: 360 397 8153	TAT if different from Below			SDG No.
FAX: 360 759 6859	☐ 2 weeks			
Project Name: Today's Family Dentistry	☐ 1 week			Sampler: Bryan DeDonker
Site: Today's Family Dentistry	☐ 2 days Standard			
PO #	☐ 1 day			Sample Specific Notes:

Sample Identification	Sample Date	Sample Time	Sample Type	Matrix	# of Cont.	Filtered Sample (Yes or No)
~~B1-GWS1~~ B1-GWS1	2/14/13	9:15	G H2O		1	✓
~~B2-GWS1~~ B2-GWS1	"	9:50	"		1	✓
~~B3-GWS1~~ B3-GWS1	"	10:25	"		1	✓
~~B4-GWS1~~ B4-GWS1	↓	11:15	↓		1	✓

Priority P Metals

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other ____

Possible Hazard Identification
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant Poison B ☐ Unknown ☒ N/A

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Special Instructions/QC Requirements & Comments:

Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
			[signature]	TAL	2/15/13 @ 1055
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

2/22/2013

TAL-1002 0912

Form No. CA-C-WI-002, Rev. 3.1, dated 07/12/2012

Login Sample Receipt Checklist

Client: Clark County Environmental Health

Job Number: 250-10041-1

Login Number: 10041
List Number: 1
Creator: Krause, Thomas

List Source: TestAmerica Portland

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	False	Cooler temperature outside required temperature criteria.
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	N/A	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

2012

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

December 10, 2012

Perkins Northwest Leasing & Financing LLC
2616 NE 112th Ave.
Vancouver, WA 98684

Subject: Site Hazard Assessment – Today's Family Dentistry
Ecology Facility Site ID: 10775

Dear Donald & Patricia Rucker:

The Department of Ecology (Ecology) will conduct a site hazard assessment (SHA) of the Today's Family Dentistry site located at 2616 NE 112th Ave., Vancouver, WA, under the Model Toxics Control Act (MTCA), Chapter 173-340-320 WAC. This site has been on Ecology's Confirmed and Suspected Contaminated Sites (CSCS) List with a status of "Awaiting SHA". This assessment will be performed by Bryan DeDoncker of Clark County Public Health (CCPH). He may contact you in the near future to arrange a suitable time for a site visit, if necessary.

The purpose of an SHA is to gather information on past/present waste management activities, along with other basic site-specific environmental data, in order to score the site following the Washington Ranking Method (WARM) Scoring Manual guidelines. Potential/actual threats to human health and the environment are evaluated for each applicable migration route, with a resultant "hazard ranking" for the site determined.

Sites are ranked on a scale of one (1) to five (5), with 1 representing the highest level of concern, and 5 the lowest, relative to all other assessed/ranked sites in the state. The level of relative concern may be such that a recommendation of "No Further Action" (NFA) can be made, and the site will be removed from Ecology's CSCS list.

In addition to any required fieldwork, the following information will be considered in scoring this site:

- Ecology Southwest Regional Office Site Files
- Clark County Public Health files

You are requested to submit any additional environmental information regarding this site to:

Bryan DeDoncker
Clark County Public Health
PO Box 9825
Vancouver, WA 98666-8825

Additional data could include any environmental assessment work or laboratory analyses conducted regarding this site not previously submitted to Ecology. Every attempt will be made to obtain the most recent and accurate data for scoring your site. If you have better information, or comments on the adequacy of the data already collected, please advise us as soon as possible. The final site rank and eventual site priority will be based primarily on the information used in the scoring. Your active participation in the assessment and scoring process is important to insure that only the best data available is used.

Fact sheets describing Site Hazard Assessments, the Washington Ranking Method and the Hazardous Sites List are enclosed for your information, as well as a copy of the Integrated Site Information System (ISIS) Site Data Summary Sheet for this site. If you have questions please call me at (360) 407-6388 (e-mail: cris.matthews@ecy.wa.gov) or Bryan DeDoncker at (360) 397-8153 (e-mail: bryan.dedoncker@clark.wa.gov).

Sincerely,

Cris Matthews
Site Hazard Assessments
Toxics Cleanup Program
Southwest Regional Office
Washington Department of Ecology

CM/ksc:FSID 10775 Todays Family Dentistry SHA letter

Enclosures (4)

By certified mail: (7011 1150 0000 7881 5700)

cc: Bryan DeDoncker, Clark County

2011

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 • Olympia, Washington 98504-7775 • (360) 407-6300

January 6, 2011

Mr. Blake Perkins
Perkins Northwest Leasing & Financing LLC
2616 NE 112th Avenue
Vancouver, WA 98684

Dear Mr. Perkins:

RE: Early Notice Letter Regarding the Release of Hazardous Substances at the Today's Family Dentistry (site name) located at 2616 NE 112th Avenue, Vancouver, Washington 98684. Facility Site Identification Number: 10775 (existing site)

Under Chapter 70.105D Revised Code of Washington (RCW) the Department of Ecology (Ecology) is required to conduct an Initial Investigation, of properties where we have received a report that there has been a release or threatened release of hazardous substance that could pose a threat to human health or the environment.

Ecology maintains a list of sites where an initial investigation has found that further testing and possible cleanup is needed. We call this our "database of Confirmed or Suspected Contaminated Sites". (CSCSL) As a result of the Initial Investigation conducted by the Clark County Health Department, this property has been added to the database as a State Cleanup Site. The Facility Site Identification number assigned to this site is 10775. Please note that inclusion in this database does not mean Ecology has determined you liable for cleanup of the site, as that is a separate determination under the law.

This site has been added to our database because soil and possibly groundwater contaminated with Metals, - Priority Polutants on this property. Our report indicates the septic tank failed at this dentist office and Dee Williams, Ecology Hazardous Waste Office and Bryan DeDoncker from Clark County investigated the possible contamination. Septic sludge was analyzed and extremely high levels of Mercury, Silver, Copper and Zinc were detected. Clark County issued a Notice of Violation on March 19, 2010 requiring decommissioning of the septic tank and connection to sanitary sewer. Our report indicates that the septic system was removed and hazardous sludge was transported to a property disposal facility. The impacted soil was left in place and no remediation or sampling has occurred. The purpose of the Initial Investigation is to confirm or deny the possibility of contamination on site.

In the future, Ecology may conduct a more detailed inspection of this property including testing for possible contamination. This inspection is called a "Site Hazard Assessment". At that time, Ecology will assess whether action will be needed and if necessary establish a priority for the work.

Ecology's policy is to work cooperatively with individuals to accomplish prompt and effective cleanups. Your cooperation with Ecology in planning or conducting a remedial action is not an admission of guilt or liability. Please be aware of state laws that must be adhered to if you decide to proceed with cleanup work on your own. The primary law is Chapter 70.105D RCW and the implementing regulations, the Model Toxics Control Act Cleanup Regulation (MTCA or Chapter 173-340 WAC). These laws can be found at Ecology's Toxics Cleanup Program website, http://www.ecy.wa.gov/toxicscleanup/policy .

If you would like a printed copy of the MTCA regulations or if you have questions call me at (360) 407-6240. These rules and how they impact each site can be confusing and complicated. There are Environmental Consultants that can be employed to assist property owners with the cleanup and site assessment process.

Ecology's Voluntary Cleanup Program is designed to provide technical assistance, for a fee, to cleanup sites that qualify. If you would like additional information regarding this program you can find information on our website at http://www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm or you can contact Scott Rose at 360-407-6347.

Sincerely,

Kim Cross

Kim Cross
Toxics Cleanup Program
Southwest Regional Office

ksc:ENL 01062011 Kens Tire Service Lakewood

by certified mail: (7009 1410 0002 4420 1423)

cc: Bryan DeDoncker, Clark County Health Department
Cris Matthews, Department of Ecology

2010

ERTS # 618230

Initial Report

External Reference #

Caller Information

	First	Last
Name	Tom	Gonzales
Busines Name	Clark Co. Health Department	
Street Address		
Other Address		
City	State WA	Zip
E-mail		Confidential_FL ☐

Phone Ext Type

Where did it happen

Berth		Anchorage	
Location Name	Today's Family Dentistry		
Street Address	2616 NE 112th Ave		
Other Address			
City/Place	VANCOUVER	State WA	Zip
County - Region	CLARK	SWRO	FS ID
WIRA #			
Waterway		Type	
Latitude		Longitude	
Topo Quad 1:24:000	VANCOUVER		

Direction/Landmark (mile post, cross roads, township/range)

What happened

Spills Program Oil Spill? N

Incident Date 2/11/2010 Received Date 2/19/2010 16:31

Medium SOIL

Material CHEMICAL

Quantity Unit

Source OTHER

Cause LEAKING UNDERGROUND STORAGE TANK

Activity ROUTINE/NORMAL OPERATIONS

Impact WATER POLLUTION

Vessel Name

Hull Number

Primary Potentially Responsible Party Information

	First	Last
Name	Dr. Blake	Perkins
Business Name	Today's Family Dentistry	
Street Address		
Other Address		
City	VANCOUVER	State WA Zip
Phone	(360) 892-7780	Ext Type Business
E-mail		

Additional Contact Information

Name Phone Ext Type

More Information

From: Williams, Dee (ECY)
Sent: Friday, February 19, 2010 4:31 PM
To: Stane, Rachelle
Subject: RE: ERTS Number Please

Rachelle, Could you please start an ERTS for the following site, with referrals to me and Bryan DeDoncker (CCHD):

On February 11, 2010, I spoke with Tom Gonzalles of the Clark County Health Department. He indicated that the County was working with the following company to address a failed septic tank:

Today's Family Dentistry
2616 NE 112th Ave.
Vancouver WA 98684
(360) 892-7780
Contact: Dr. Blake Perkins
drblake@wowdental.com

The tank was inspected in August 2009 and determined to be cracked.

On February 16, 2010, I contacted Dr. Perkins and discussed the situation, and then forwarded him an e-mail (attached at end of this e-mail) outlining potential concerns about the tank. Namely, HWTR was concerned that the tank may have received silver-bearing waste several years ago when x-ray development took place on-site. Dr. Perkins said he uses only digital imaging for the past 5 years. The tank may also have received mercury amalgam that by-passed the trap that is installed in-line.

ERTS # 618230

On February 18, 2010, I visited the site to collect a sample from the septic tank. This sample was transported to Test America for total metals analysis.

From: Williams, Dee (ECY) [mailto:dewi461@ECY.WA.GOV]
Sent: Tuesday, February 16, 2010 1:16 PM
To: J. Blake Perkins
Cc: Gonzales, Tom; DeDoncker, Bryan; Wise, Douglas
Subject: Septic Tank Issues

Dr. Perkins,
Thank you for your time on the phone today. As I offered on the phone, I spoke with Tom Gonzales last week about the septic tank on your property. He explained that the Clark County Health Department was notified that the tank is cracked, and he is working with you to determine the best way to deal with the situation.

Ecology has also been working with several small businesses in Clark County to determine if hazardous materials may have accumulated in their septic tanks. In some cases, hazardous constituents accumulate in the sludge over years of use; this can occur even if the tank is maintained (pumped), since some residual waste is often left in place. Even a small concentration of metals, released through hand-washing or other incidental activities can accumulate over time and create a problem.

In your case, we are concerned that mercury may have by-passed the trap and over time, accumulated in the tank. It is also possible that photographic wastes (e.g., silver from x-ray development) may also have accumulated in the tank years ago. It is important that we know that concentration prior to pumping-out the tank, so any risks are fully identified; so the pumper, hauler and receiving facility can safely manage the waste.

I plan to forward you a more formal letter, directing you to properly sample and remove the waste. This work is required to meet the Water Pollution Control Act (RCW 90.48), to ensure that any risks to groundwater are properly addressed. I recognize that you're already working with other regulatory programs to address this problem; it is my hope that Ecology can coordinate with them, as well, to minimize the confusion for all.

Please be advised the sampling and analysis can be expensive (up to $700 in some cases). If the waste is determined to be hazardous, it could cost up to $3.00 per gallon for disposal. I recognize you're already trying to get bids for a connection to sewer, and those bids are high.

Given this situation, Ecology may be able to grab a sample and analyze it for total metals. This will at least cut the cost a bit. Please let me know if you'd like that assistance, or if you'd prefer to hire a contractor. I spoke with someone at the Health Department, and they would be available on Thursday to help with the sampling.

I appreciate your time on the phone. Please let me know about Thursday. I'll forward additional information in the near future.

Sincerely,
Dee Williams, Inspector
Department of Ecology, Southwest Regional Office
Hazardous Waste and Toxics Reduction Program
(360) 407-6348

Entry Person Stane, RaChelle Entry Date 2/19/2010

*** The Initial report contains only information provided to Ecology from the complainant.

ERTS # 618230

Referral

Referral # 130732

Referral Method
- ○ E-mail ERTS number
- ◉ E-mail attachment
- ○ Print
- ○ Telephone

Person Referred to: DEDONCKER - TCP REFERRAL USE ONLY, BRYAN — Primary ☐
Phone: (360) 397-8153 Fax: (360) 759-7336
E-mail: Bryan.DeDoncker@clark.wa.gov
Program/Organization: TOXICS CLEANUP
Address:
City: VANCOUVER WA 98666-8825
Region/Location: SWRO
Referral Date: 2/19/2010

Referral # 141213

Referral Method
- ○ E-mail ERTS number
- ◉ E-mail attachment
- ○ Print
- ○ Telephone

Person Referred to: WILLIAMS, DEE — Primary ☐
Phone: (360) 407-6348 Fax: 360-690-7166
E-mail: dewi461@ecy.wa.gov
Program/Organization: HAZARDOUS WASTE AND TOXICS REDUCTION
Address:
City:
Region/Location: SWRO
Referral Date: 2/19/2010

ERTS # 618230

Followup

Followup #1

Inspector Information

Referral # 141213
☑ Lead Inspector WILLIAMS, DEE
Program/Organization HAZARDOUS WASTE AND TOXICS REDUCTION
* Region/Location SWRO
# of Ecology Staff Overtime ☐

Action

	Start Date	End Date
FIELD RESPONSE - INVESTIGATION	2/19/2010	2/19/2011
REFERRAL	1/26/2011	1/26/2011

Where did it happen

Berth Anchorage
Location Name Today's Family Dentistry
Street Address 2616 NE 112th Ave
Other Address
City/Place VANCOUVER State WA Zip
County CLARK Region SWRO FS ID
Waterway Type
WRIA #

What happened

Spills Program Oil Spill? N
Incident Date 2/11/2010
Medium
SOIL
Material
CHEMICAL
Quantity Unit Est
Source Regulated? ☐
OTHER
Cause
LEAKING UNDERGROUND STORAGE TANK
Activity
ROUTINE/NORMAL OPERATIONS
Impact
WATER POLLUTION
Vessel

Latitude Longitude
Topo Quad 1:24,000 VANCOUVER
Direction/Landmark (mile post, cross roads, township/range)

Potentially Responsible Party Information

Check if the primary PRP provided notice to Ecology ☐

Primary ☑ First Last
Name Dr. Blake Perkins
Business Name Today's Family Dentistry
Street Address
Other Address
City VANCOUVER State WA Zip
Phone (360) 892-7780 Ext Type Business
E-mail

Narrative

From: Williams, Dee (ECY)
Sent: Wednesday, January 26, 2011 2:19 PM
To: Stane, Rachelle
Subject: FW: Please enter this to ERTS 618230 -- Todays Family Dentistry

Today's Family Dentistry– ERTS 618230

Dangerous waste was found in an on-site septic tank. SWRO-HWTR responded and directed the property owner to clean the tank. HWTR also worked with the on-site dental practice. The site was ultimately connected to sanitary sewer. The dental practice is following Ecology's Best Management Practices, including use of an amalgam separator.

The Clark County Health Department directed that the septic tank be decommissioned, and the site has been referred to Ecology's TCP Voluntary Cleanup Program.

All information including analytical results, a Notice to Comply, waste disposal records, and other pertinent data is included in Central Files.

No further action will be taken by HWTR-SWRO.

Dee Williams | Hazardous Waste Compliance Unit, Team Lead | Dept of Ecology | HWTR-SWRO
360.407.6348 | dee.williams@ecy.wa.gov

Entry Person: Stane, RaChelle Entry Date 1/26/2011

*** The Initial report contains only information provided to Ecology from the complainant.

ERTS # 618230

Followup #2

Inspector Information

Referral # 130732

☐ Lead Inspector DEDONCKER - TCP REFERRAL USE ONLY,

Program/Organization TOXICS CLEANUP

* Region/Location SWRO

# of Ecology Staff Overtime ☐

Action

	Start Date	End Date
FIELD RESPONSE - INVESTIGATION	2/18/2010	5/14/2010
TCP - SIS	2/18/2010	5/14/2010

Where did it happen

Berth Anchorage

Location Name Today's Family Dentistry

Street Address 2616 NE 112th Ave

Other Address

City/Place VANCOUVER State WA Zip 98684-

County CLARK Region SWRO FS ID 10775

Waterway Type

WRIA #

Latitude Longitude

Topo Quad 1:24,000 VANCOUVER

Direction/Landmark (mile post, cross roads, township/range)

What happened

Spills Program Oil Spill? N

Incident Date 2/11/2010

Medium
SOIL

Material
CHEMICAL

Quantity Unit Est ☐

Source Regulated? ☐
OTHER

Cause
LEAKING UNDERGROUND STORAGE TANK

Activity
ROUTINE/NORMAL OPERATIONS

Impact
WATER POLLUTION

Vessel

Potentially Responsible Party Information

Check if the primary PRP provided notice to Ecology ☐

Primary ☑ First Last Name

Business Name Perkins Northwest Leasing & Financing LLC

Street Address 2616 NE 112th Ave

Other Address

City VANCOUVER State WA Zip 98684-

Phone (360) 931-0467 Ext Type Business

E-mail

Narrative

COMPLAINT (Brief Summary of ERTS): Dental office has been on a septic tank since 1982. An August, 2009 inspection determined that the tank was cracked.

SITE STATUS (Brief Summary of site condition(s) after investigation): Site is a family dental office.

Investigator: Bryan DeDoncker Date Submitted: 05/14/10

OBSERVATIONS
Description:

02/18/10
11:00 am: A septic Operation & Maintenance (O&M) inspection on August 13, 2009 revealed that the septic tank was cracked. The inspection findings were not reported to Clark County Public Health (CCPH). The failing tank was not recognized by CCPH until owner Blake Perkins applied for a tank replacement.

Ecology's Dee Williams and I conducted a site visit for the purpose of sampling the tank's sludge for waste designation. A sludge sample was collected to be analyzed for total metals due to the suspicion of mercury and silver bearing waste. The sample results showed extremely high levels of Mercury, Silver, Copper, and Zinc in the septic sludge. This resulted in the septic waste being designated as Dangerous Waste. Clark County Pubic Health issued a Notice of Violation, on March 19, 2010, requiring the decommissioning of the septic system and connection to sanitary sewer.

04/21/10
1:00pm: Dee Williams and I conducted a follow up visit. All the septic waste was pumped and put into totes. The totes remained on site awaiting transportation to a proper hazardous waste receiving facility. The septic tank had also been removed, however stained soil was observed around the septic tank area. The soil was left in place and no soil samples have yet been collected. However, high concentrations of Priority Pollutant Metals were detected in the septic system. Therefore, a release to soil, and potentially groundwater, has occurred.

Therefore, based on my observations, I recommend this site be listed on Ecology's list of suspected and confirmed sites (ISIS)- SHA.

*** The Initial report contains only information provided to Ecology from the complainant.

ERTS # 618230

INITIAL INVESTIGATION COMPLETE SEE COMPLETE REPORT IN CENTRAL FILES - 04/29/11

Entry Person: MENDEZ, LORNA Entry Date 4/29/2011

Initial Investigation Close-Out Router

ERTS #: 618230	**Site Name:** Today's Family Dentistry

1 Recommended Action: Circle the appropriate categories:

NFA (Listing on SIS) High Priority SHA

Initial Investigator: Bryan DeDoncker

2 Unit Supervisor: CM

3 Final Action: Circle the appropriate categories:

NFA (Listing on SIS) High Priority SHA

Section Manager: 8/10/10

NFAs go Directly to the Incident Tracker, and Then the File Room; Others Follow the Process Below

4
Entered on SIS: ✓
Date: 01/06/2011
SIS Site Number: Facility Site Number: 10775 (existing)
Date Early Notice Letter Sent: 01/06/2011
FS/SIS Coordinator: Kim Cross

5
Incident Tracker:
Date:

6
File Room:
County:
File Type:

WASHINGTON STATE DEPARTMENT OF ECOLOGY

INITIAL INVESTIGATION FIELD REPORT

ERTS Number: 618230
Parcel #: 162643000
COUNTY: Clark

SITE INFORMATION

Site Name (e.g., Co. name over door): Today's Family Dentistry	Site Address (including City and Zip+4): 2616 NE 112th Avenue Vancouver, WA 98684	Site Phone: 360-892-7780
Site Contact and Title: Blake Perkins - Owner	Site Contact Address (including City and Zip+4): 2616 NE 112th Avenue Vancouver, WA 98684	Site Contact Phone: 360-931-0467
Site Owner: Perkins Northwest Leasing & Financing LLC	Site Owner Address (including City and Zip+4): 2616 NE 112th Avenue Vancouver, WA 98684	Site Owner Phone: 360-931-0467
Site Owner Contact: Blake Perkins	Site Owner Contact Address (including City and Zip+4): 2616 NE 112th Avenue Vancouver, WA 98684	Owner Contact Phone: 360-931-0467
Alternate Site Name(s):	Comments:	Is property > 10 acres? Yes ☐ No ☒
Previous Site Owner(s):	Comments:	

Location: Quarter-Quarter: SE ¼	Section: 21	Township: 2N	Range: 2E	
Latitude: 45.64175				
Longitude: -122.55852				

INSPECTION INFORMATION

Inspection Date: 02/18/10	Inspection Time: 11:00 am	Entry Notice: Announced ☒	Unannounced ☐	
Photographs	Yes ☒	No ☐	Weather: Clear ☒ Rain ☐	Temperature: _____ ° F
Samples	Yes ☒	No ☐	Wind Direction:	Wind Speed:

RECOMMENDATION

No Further Action (Indicate NFA in box below):		**LIST on ISIS** (Indicate in box below):	
Release or threatened release does not pose a threat	☐	Site Hazard Assessment	☒
No release or threatened release	☐	Interim Action	☐
Educational mailing	☐	Emergency Action	☐
Refer to program/agency (Name: _____)	☐	Independent Cleanup Action In progress	☐
Independent Cleanup Action Completed (i.e., contam. removed)	☐		

COMPLAINT (Brief Summary of ERTS): Dental office has been on a septic tank since 1982. An August, 2009 inspection determined that the tank was cracked.

SITE STATUS (Brief Summary of site condition(s) after investigation): Site is a family dental office.

Investigator: Bryan DeDoncker BD

Date Submitted: 05/14/10

OBSERVATIONS

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02/18/10

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Therefore, based on my observations, I recommend this site be listed on Ecology's list of suspected and confirmed sites (ISIS) – SHA.

Description of past practices likely to be responsible for contamination: Discharge of industrial mercury & silver bearing waste into onsite septic system.

ACTIVITIES OR PRACTICES RESPONSIBLE FOR CONTAMINATION:

Spill	☐	LUST	☐
Pesticide disposal	☐	Tank	☐
Landfill	☐	Improper handling	☐
Drums	☐	Improper disposal	☒
Other – Describe: Septic Tank			

Are discharges permitted (if yes, describe): No ☒ Yes ☐

Standard Industrial Code(s)

CONTAMINANT(S)

AFFECTED MEDIA	CONTAMINANTS (#1-16: See contaminants key) Enter letter designating status of contaminant: **C** = Confirmed (above cleanup levels); **S** = Suspected; **R**= Remediated															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ground Water			S													
Surface Water																
Drinking Water			S													
Soil			S													
Sediment																
Air																

1 Base/neutral organics
2 Halogenated organic compounds
3 Metals - Priority pollutants
4 Metals - Other
5 Polychlorinated biPhenyls (PCBs)
6 Pesticides
7 Petroleum products
8 Phenolic compounds
9 Non-halogenated solvents
10 Dioxin
11 Polynuclear aromatic hydrocarbons (PAHs)
12 Reactive wastes
13 Corrosive wastes
14 Radioactive wastes
15 Conventional contaminants, organic
16 Conventional contaminants, inorganic

SITE INFORMATION

Soil type: Lauren loam

Slope: 0-8%

Site vegetation/cover present:

Forest	☐	Pasture/open field	☐
Bare soil	☐	Wetlands	☐
Brush	☐	Pavement	☒
Landscaped	☒	Surface water	☐

Other – Describe:

Are there any drinking water systems affected?	☐ Yes	☒ No
Municipal, private, or both? (Circle one)		
How many people are estimated to be affected? _____		
Is there a potential for a release or threatened release to affect a drinking water source?	☒ Yes	☐ No
Are there monitoring wells in the vicinity? unknown	☐ Yes	☐ No
Are there dry wells in the vicinity? unknown	☐ Yes	☐ No

CONTAMINANT PATHWAYS AND TARGETS

	Ingestion	Inhalation	Contact
Ground Water	X		
Surface Water			
Drinking Water	X		
Soil			X
Sediment			
Air			

Targets possible:

Human, adult	☒	Residential	☒
Human, children	☒	Industrial	☒
		Commercial	☒

Sensitive environments (See WARM Scoring Manual for definition):

☐ Yes ☒ No If yes, describe:

General Comments:

SITE MAP/DIAGRAM

Site Name	
↑ **North**	Approximate scale: _____ inch = _____ feet
ERTS Number	County
Inspector	Date

DeDoncker, Bryan

From: Williams, Dee (ECY) [dewi461@ECY.WA.GOV]
Sent: Tuesday, April 27, 2010 11:47 AM
To: J. Blake Perkins
Cc: Tim Ferrick; Wise, Douglas; DeDoncker, Bryan; Glasier, Linda (ECY)
Subject: Dr. Perkins Septic.pdf

Dr. Perkins,

Tim Ferrick forwarded the final lab results concerning the treated waste water. Based on the results, the waste does not designate as a toxic dangerous waste. This waste can be managed off-site as non-hazardous INDUSTRIAL Waste. A regular septic hauler can transport the waste, but it has to be accepted/approved into the receiving facility as an industrial waste; it cannot be managed as simple septic waste. Please forward the final bill of lading and any paperwork showing that the waste was accepted for disposal. The bill of lading should show the date and volume of waste managed off-site, and where the waste was disposed.

Also, please forward the final manifest for toxic dangerous waste when it is disposed.

Next year, you'll have to prepare an Annual Dangerous Waste Report for the wastes treated and/or disposed off-site. In that report, you'll have to report the volume of dangerous waste manifested off-site, and the volume of dangerous waste treated by filtration to render it non-hazardous. You'll receive a notice in the mail, notifying you about the report. And you can file on-line.

Please contact me if you have any questions.

Sincerely,
Dee Williams
Ecology Southwest Regional Office
Hazardous Waste and Toxics Reduction Program
(360) 407-6348

proud past, promising future

CLARK COUNTY
WASHINGTON

March 19, 2010

Dr. Blake Perkins, Owner
Perkins Northwest Leasing & Financing LLC
2616 NE 112th Avenue, Vancouver, WA 98684
Tax Parcel ID: 162643000

Dear Dr. Perkins,

This letter is a follow up to our phone conversation on Wednesday, March 10, 2010. As per our discussion, Clark County Public Health will not be able to grant you a "Tank Only" replacement, as requested on 10/13/09. A letter from this department, dated 07/19/82, granted temporary use of your on-site septic system pending public sewer availability. Because public sewer is currently readily available, an on-site septic system will not be approved for accepting wastewater from your dental office.

Also, the contents of your septic tank sludge revealed high levels of mercury and silver that designate as "Dangerous Waste" as per WAC 173-303-100. These high levels are atypical of domestic sewage and are in violation of Clark County Code 24.17 On-Site Sewage System Rules and Regulations and Chapter 246-272A, Washington Administrative Code (WAC) for the reason that:

1. disposal of industrial wastewater into septic systems is prohibited, as per Clark County Code 24.17.070(1)(c).
2. persons shall not use an onsite septic system to dispose of waste components atypical of sewage from a residential source, as per WAC 246-272A-0270(2)(c).

Therefore, proper decommissioning of your on-site septic system, and connection to public sewer, is required to be completed by July 30, 2010. Clark County Public Health appreciates your willingness to address public health concerns within the community.

Please contact me at **(360) 397-8153** if you have questions regarding this letter and timeline for connection to public sewer. We are willing to assist you throughout the process as feasibly possible.

Sincerely,

Bryan DeDoncker
Environmental Health Specialist

cc: Tom Gonzales, Clark County Public Health
Dee Williams, Department of Ecology
Doug Wise, City of Vancouver
Sheryl Hale, City of Vancouver

P.O. Box 9825 • Vancouver, WA 98666-8825 • tel: [360] 397-8428 • fax: [360] 397-8084 • www.clark.wa.gov

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210
ORELAP#: OR100021

March 04, 2010

Dee Williams
Washington Dept. of Ecology-Olympia
300 Desmond Drive
Lacey, WA 98503

RE: Perkins Dental

Enclosed are the results of analyses for samples received by the laboratory on 02/18/10 15:25. The following list is a summary of the Work Orders contained in this report, generated on 03/04/10 15:59.

If you have any questions concerning this report, please feel free to contact me.

Work Order	Project	ProjectNumber
PTB0541	Perkins Dental	[none]

TestAmerica Portland

Darrell W. Auvil

Darrell Auvil, Project Manager

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Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
001	PTB0541-01	Other dry	02/18/10 11:50	02/18/10 15:25

TestAmerica Portland

Darrell Auvil, Project Manager

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Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Total Metals per EPA 6000/7000 Series Methods

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTB0541-01 (001)			Other dry			Sampled: 02/18/10 11:50				
Arsenic	EPA 6020	**5.38**	-----	4.76	mg/kg dry	1x	10B0603	02/19/10 15:13	02/22/10 16:27	
Barium	"	**372**	-----	4.76	"	"	"	"	"	
Cadmium	"	ND	-----	4.76	"	"	"	"	"	
Chromium	"	**28.1**	-----	9.52	"	"	"	"	"	
Copper	"	**3210**	-----	9.52	"	"	"	"	"	
Lead	"	**107**	-----	4.76	"	"	"	"	"	
Nickel	"	**35.4**	-----	9.52	"	"	"	"	"	
Selenium	"	ND	-----	4.76	"	"	"	"	"	
Zinc	"	**2330**	-----	47.6	"	"	"	"	"	
PTB0541-01RE2 (001)			Other dry			Sampled: 02/18/10 11:50				
Silver	EPA 6020	**6940**	-----	159	mg/kg dry	1x	10B0796	02/26/10 16:13	02/27/10 16:12	

TestAmerica Portland

Darrell W. Auvil

Darrell Auvil, Project Manager

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Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Total Mercury per EPA Method 7471A

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTB0541-01 (001)			**Other dry**			**Sampled: 02/18/10 11:50**				
Mercury	EPA 7471A	**4410**	-----	4260	mg/kg dry	5000x	10B0753	02/25/10 13:12	02/26/10 12:58	**B1**

TestAmerica Portland

Darrell W. Auvil

Darrell Auvil, Project Manager

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Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Percent Dry Weight (Solids) per ASTM D2216-80

TestAmerica Portland

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
PTB0541-01 (001)				**Other dry**			**Sampled: 02/18/10 11:50**			
% Solids	NCA SOP	**10.5**	-----	0.0100	% by Weight	1x	10B0607	02/20/10 08:08	02/20/10 08:08	

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Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10B0603 **Soil Preparation Method: EPA 3050**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10B0603-BLK1)							Extracted: 02/19/10 15:13							
Arsenic	EPA 6020	ND	---	0.476	mg/kg wet	1x	--	--	--	--	--	--	02/22/10 15:32	
Barium	"	ND	---	0.476	"	"	--	--	--	--	--	--	"	
Cadmium	"	ND	---	0.476	"	"	--	--	--	--	--	--	"	
Chromium	"	ND	---	0.952	"	"	--	--	--	--	--	--	"	
Copper	"	ND	---	0.952	"	"	--	--	--	--	--	--	"	
Lead	"	ND	---	0.476	"	"	--	--	--	--	--	--	"	
Nickel	"	ND	---	0.952	"	"	--	--	--	--	--	--	"	
Selenium	"	ND	---	0.476	"	"	--	--	--	--	--	--	"	
Zinc	"	ND	---	4.76	"	"	--	--	--	--	--	--	"	
LCS (10B0603-BS1)							Extracted: 02/19/10 15:13							
Arsenic	EPA 6020	46.7	---	0.481	mg/kg wet	1x	--	48.1	97.2%	(80-120)	--	--	02/22/10 15:40	
Barium	"	44.6	---	0.481	"	"	--	"	92.8%	"	--	--	"	
Cadmium	"	46.7	---	0.481	"	"	--	"	97.1%	"	--	--	"	
Chromium	"	46.3	---	0.962	"	"	--	"	96.3%	"	--	--	"	
Copper	"	46.9	---	0.962	"	"	--	"	97.6%	"	--	--	"	
Lead	"	47.3	---	0.481	"	"	--	"	98.4%	"	--	--	"	
Nickel	"	47.5	---	0.962	"	"	--	"	98.8%	"	--	--	"	
Selenium	"	46.2	---	0.481	"	"	--	"	96.2%	"	--	--	"	
Zinc	"	45.4	---	4.81	"	"	--	"	94.3%	"	--	--	"	
Matrix Spike (10B0603-MS1)				QC Source: PTB0416-09			Extracted: 02/19/10 15:13							
Arsenic	EPA 6020	119	---	1.32	mg/kg dry	1x	1.31	132	89.4%	(75-125)	--	--	02/22/10 16:12	
Barium	"	287	---	1.32	"	"	163	"	94.0%	"	--	--	"	
Cadmium	"	127	---	1.32	"	"	0.0531	"	96.8%	"	--	--	"	
Chromium	"	154	---	2.63	"	"	27.9	"	95.9%	"	--	--	"	
Copper	"	166	---	2.63	"	"	41.4	"	95.0%	"	--	--	"	
Lead	"	142	---	1.32	"	"	13.1	"	97.9%	"	--	--	"	
Nickel	"	157	---	2.63	"	"	32.1	"	94.8%	"	--	--	"	
Selenium	"	116	---	1.32	"	"	0.199	"	87.7%	"	--	--	"	
Zinc	"	173	---	13.2	"	"	49.7	"	93.5%	"	--	--	"	

TestAmerica Portland

Darrell W. Auvil

Darrell Auvil, Project Manager

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BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Total Metals per EPA 6000/7000 Series Methods - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10B0603 **Soil Preparation Method: EPA 3050**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (10B0603-MSD1)					QC Source: PTB0416-09				Extracted: 02/19/10 15:13					
Arsenic	EPA 6020	120	---	1.35	mg/kg dry	1x	1.31	135	87.8%	(75-125)	1.07%	(40)	02/22/10 16:19	
Barium	"	271	---	1.35	"	"	163	"	79.8%	"	5.63%	"	"	
Cadmium	"	128	---	1.35	"	"	0.0531	"	94.5%	"	0.473%	"	"	
Chromium	"	152	---	2.71	"	"	27.9	"	91.5%	"	1.46%	"	"	
Copper	"	165	---	2.71	"	"	41.4	"	91.1%	"	0.970%	"	"	
Lead	"	139	---	1.35	"	"	13.1	"	93.1%	"	1.94%	"	"	
Nickel	"	157	---	2.71	"	"	32.1	"	92.2%	"	0.0913%	"	"	
Selenium	"	120	---	1.35	"	"	0.199	"	88.5%	"	3.85%	"	"	
Zinc	"	171	---	13.5	"	"	49.7	"	89.3%	"	1.22%	"	"	

QC Batch: 10B0796 **Other dry Preparation Method: EPA 3050**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10B0796-BLK1)									Extracted: 02/26/10 16:13					
Silver	EPA 6020	ND	---	0.500	mg/kg wet	1x	--	--	--	--	--	--	02/27/10 15:57	
LCS (10B0796-BS1)									Extracted: 02/26/10 16:13					
Silver	EPA 6020	23.9	---	0.500	mg/kg wet	1x	--	25.0	95.4%	(80-120)	--	--	02/27/10 16:05	
Matrix Spike (10B0796-MS1)					QC Source: PTB0599-01RE1				Extracted: 02/26/10 16:13					
Silver	EPA 6020	23.2	---	0.495	mg/kg wet	1x	0.00980	24.8	93.7%	(75-125)	--	--	02/27/10 16:36	
Matrix Spike Dup (10B0796-MSD1)					QC Source: PTB0599-01RE1				Extracted: 02/26/10 16:13					
Silver	EPA 6020	22.9	---	0.481	mg/kg wet	1x	0.00980	24.0	95.4%	(75-125)	1.15%	(40)	02/27/10 16:44	

TestAmerica Portland

Darrell Auvil, Project Manager

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Total Mercury per EPA Method 7471A - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10B0753 **Other dry Preparation Method: EPA 7471A**

Analyte	Method	Result	MDL[A]	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (10B0753-BLK1)								Extracted: 02/25/10 13:12						
Mercury	EPA 7471A	0.180	---	0.0985	mg/kg wet	1x	--	--	--	--	--	--	02/26/10 10:45	B
LCS (10B0753-BS1)								Extracted: 02/25/10 13:12						
Mercury	EPA 7471A	0.636	---	0.0988	mg/kg wet	1x	--	0.617	103%	(80-120)	--	--	02/26/10 10:48	
LCS Dup (10B0753-BSD1)								Extracted: 02/25/10 13:12						
Mercury	EPA 7471A	0.625	---	0.0988	mg/kg wet	1x	--	0.617	101%	(80-120)	1.70%	(20)	02/26/10 10:51	
Duplicate (10B0753-DUP1)				QC Source: PTB0602-04				Extracted: 02/25/10 13:12						
Mercury	EPA 7471A	56.9	---	10.1	mg/kg wet	100x	42.8	--	--	--	28.2%	(40)	02/26/10 11:02	
Matrix Spike (10B0753-MS1)				QC Source: PTB0602-03				Extracted: 02/25/10 13:12						
Mercury	EPA 7471A	57.2	---	9.76	mg/kg wet	100x	119	0.610	-10100	(75-125)	--	--	02/26/10 11:04	MHA
Matrix Spike Dup (10B0753-MSD1)				QC Source: PTB0602-03				Extracted: 02/25/10 13:12						
Mercury	EPA 7471A	93.6	---	10.2	mg/kg wet	100x	119	0.639	-3990%	(75-125)	48.2%	(40)	02/26/10 11:07	MHA

TestAmerica Portland

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Percent Dry Weight (Solids) per ASTM D2216-80 - Laboratory Quality Control Results

TestAmerica Portland

QC Batch: 10B0607 **Soil Preparation Method: Dry Weight**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Duplicate (10B0607-DUP1)					QC Source: PTB0557-01			Extracted: 02/20/10 08:08						
% Solids	NCA SOP	95.8	---	0.0100	% by Weight	1x	95.8	--	--	--	0.00%	(20)	02/20/10 08:08	

Darrell W. Auvil

Darrell Auvil, Project Manager

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PORTLAND, OR 9405 S.W. NIMBUS AVENUE
BEAVERTON, OR 97008-7132
ph: (503) 906.9200 fax: (503) 906.9210

Washington Dept. of Ecology-Olympia	Project Name:	**Perkins Dental**	
300 Desmond Drive	Project Number:	[none]	Report Created:
Lacey, WA 98503	Project Manager:	Dee Williams	03/04/10 15:59

Notes and Definitions

Report Specific Notes:

B	-	Analyte was detected in the associated Method Blank.
B1	-	Analyte was detected in the associated method blank. Analyte concentration in the sample is greater than 10x the concentration found in the method blank.
MHA	-	Due to high levels of analyte in the sample, the MS/MSD calculation does not provide useful spike recovery information. See Blank Spike (LCS).

Laboratory Reporting Conventions:

DET	-	Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
ND	-	Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
NR/NA	-	Not Reported / Not Available
dry	-	Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
wet	-	Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
RPD	-	RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
MRL	-	METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
MDL*	-	METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. *MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
Dil	-	Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
Reporting Limits	-	Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
Electronic Signature	-	Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy.* Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Darrell W. Auvil

Darrell Auvil, Project Manager

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave,Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: PTB0541

CLIENT: ~~PARKINS-DENTAL~~ WA. DEPT OF ECOLOGY

INVOICE TO: WA. DEPT OF ECOLOGY

REPORT TO: Dee Williams dewi461@ecy.wa.gov

ADDRESS: PO BOX 7775, Olympia WA 98504-775

PHONE: 3604076346 FAX:

P.O. NUMBER:

PROJECT NAME: PERKINSDENTAL

PROJECT NUMBER:

SAMPLED BY: Dee Williams

TURNAROUND REQUEST

in Business Days *

Organic & Inorganic Analyses: ~~10~~ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1

Petroleum Hydrocarbon Analyses: 5 STD. | 4 | 3 | 2 | 1 | <1

OTHER Specify:

* *Turnaround Requests less than standard may incur Rush Charges.*

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: Total Metals	RCRA-8 + Copper, Nickel, Zinc	MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	001-	2-18-10/11:50		X		O	1	SEPTIC WASTE STINKY!!	
2									
3									
4									
5									
6									
7									
8									
9									
10									

RELEASED BY: Dee Williams	FIRM: ECOLOGY	DATE: 2-18-10	RECEIVED BY: Jessica Myr	FIRM: TAL	DATE: 2/18/10
PRINT NAME:		TIME: 3:35	PRINT NAME:		TIME: 1525
RELEASED BY:	FIRM:	DATE:	RECEIVED BY:	FIRM:	DATE:
PRINT NAME:		TIME:	PRINT NAME:		TIME:

ADDITIONAL REMARKS: Total Metals RCRA 8 + Copper, Nickel, Zinc ; DRY-WT REPORT

TEMP: 16-1 PAGE OF

TAL-1000(0408)

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PTB0541 Date/Time Received: 2/18/10 1525

Client Name and Project: WA. Dept of Ecology Perkins Dental

Time Zone:

☐EDT/EST ☐CDT/CST ☐MDT/MST ☑PDT/PST ☐AK ☐OTHER

Unpacking Checks:

Cooler #(s): 1

Temperatures: 10.1

Digi #1 ☐ Digi #2 ☐ IR Gun ☑ (☐Plastic ☑Glass).

Temperature out of Range:

☑ Not enough or No Ice

☐ Ice Melted

☐ W/in 4 Hrs of collection

☑ Other: Unknown

Initials: JM

N/A	Yes	No	
☑	☐	☐	1. If ESI client, were temp blanks received? If no, document on NOD.
☑	☐	☐	2. Cooler Seals intact? (N/A if hand delivered) if no, document on NOD.
	☑	☐	3. Chain of Custody present? If no, document on NOD.
	☑	☐	4. Bottles received intact? If no, document on NOD.
	☑	☐	5. Sample is not multiphasic? If no, document on NOD.
	☑	☐	6. Proper Container and preservatives used? If no, document on NOD.
☑	☐	☐	7. pH of all samples checked and meet requirements? If no, document on NOD.
☑	☐	☐	8. Cyanide samples checked for sulfides and meet requirements? If no, notify PM.
☑	☐	☐	9. HF Dilution required?
	☑	☐	10. Sufficient volume provided for all analysis? If no, document on NOD and consult PM before proceeding.
	☑	☐	11. Did chain of custody agree with samples received? If no, document on NOD.
	☑	☐	12. Is the "Sampled by" section of the COC completed?
☑	☐	☐	13. Were VOA/Oil Syringe samples without headspace?
☑	☐	☐	14. Were VOA vials preserved? ☐HCl ☐Sodium Thiosulfate ☐Ascorbic Acid
	☐	☑	15. Did samples require preservation with sodium thiosulfate?
☑	☐	☐	16. If yes to #14, was the residual chlorine test negative? If no, document on NOD.
☑	☐	☐	17. Are dissolved/field filtered metals bottles sediment-free? If no, document on NOD.
☑	☐	☐	18. Is sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM before proceeding.
☑	☐	☐	19. Are analyses with short holding times received in hold?
	☑	☐	20. Was Standard Turn Around (TAT) requested?
	☑	☐	21. Receipt date(s) < 48 hours past the collection date(s)? If no, notify PM.

TestAmerica Portland

Sample Receiving Checklist

Work Order #: PTB0541

Login Checks:

Initials: PS

N/A	Yes	No	
	☑	☐	22. Sufficient volume provided for all analysis? If no, document on NOD & contact PM.
☑	☐	☐	23. Sufficient volume provided for client requested MS/MSD or matrix duplicates? If no, document on NOD and contact PM.
	☑	☐	24. Did the chain of custody include "received by" and "relinquished by" signatures, dates and times?
☑	☐	☐	25. Were special log in instructions read and followed?
	☑	☐	26. Were tests logged checked against the COC?
☑	☐	☐	27. Were rush notices printed and delivered?
☑	☐	☐	28. Were short hold notices printed and delivered?
☑	☐	☐	29. Were subcontract COCs printed?
☑	☐	☐	30. Was HF dilution logged?

Labeling and Storage Checks:

Initials: PS

N/A	Yes	No	
☑	☐	☐	31. Were the subcontracted samples/containers put in Sx fridge?
☑	☐	☐	32. Were sample bottles and COC double checked for dissolved/filtered metals?
	☑	☐	33. Did the sample ID, Date, and Time from label match what was logged?
☑	☐	☐	34. Were Foreign sample stickers affixed to each container and containers stored in foreign fridge?
☑	☐	☐	35. Were HF stickers affixed to each container, and containers stored in Sx fridge?
☑	☐	☐	36. Was an NOD for created for noted discrepancies and placed in folder?

Document any problems or discrepancies and the actions taken to resolve them on a Notice of Discrepancy form (NOD).

AAA Septic Service LLC
PO Box 1668
Brush Prairie WA. 98606
1-360-687-8960

Septic Inspection

Drain Field					**OK**	**Fail**
Standard						
	Squirt	Flushed	Y	N		
Pressure						
Mound						
Sand Filter						
Components						
Inlet Baffle						
Outlet Baffle						
Filter						
High Level alarm						
UV bulb						
Effluent Pumps						
Pump Draw Down Inches / minute						
Air pump						
Air Pump alarm						
Components water tight						
Surfacing effluent						
Control Panel						
					on	off
Pump on / off times						
Tanks						
Tank Type – – plastic - brick - concrete						
Risers Yes - No						
Tank Depth - inches						
	Pumping needed				scum	sludge
1 Compartment						
2 Compartment						
Pump Tank						
Aeration Chamber %						

CRACKED TANK

Customer DR. Perkins	
Phone 931-0467	
Jobsite 2616 NE 112 AVE	
City VANC	**Zip Code** 98684
Date 8/13/09	
Billing	
ON #	
Last pump Date	
Work required - (Inspection) - Pump - Service -Other ( )	

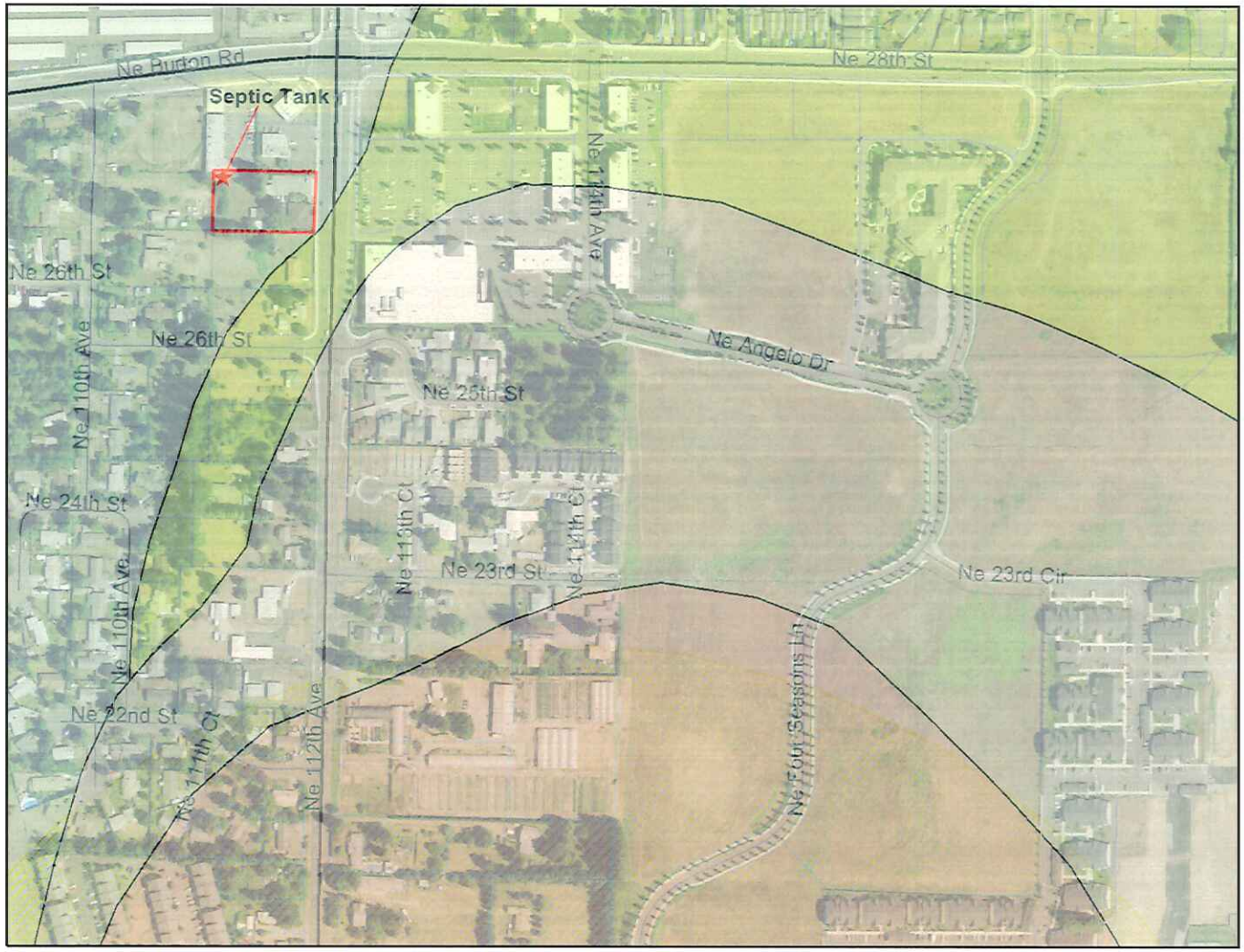
Invoice		
Inspection	93.01	93.01
Gallons Pumped	.30	
Minimum pump charge		
Clark County Pumping Fee	$.06	
Digging Charge		
Baffle Repair		
Pump Replacement		
Riser Installation		
Tank locating charge		
Service Call		
Labor		
Other charges		
DISC		-65.00
INSP 21.99 + TAX		
Subtotal		
WA Sales Tax 6.05		
Clark County Inspection Fee 21.99		
TOTAL		50.00

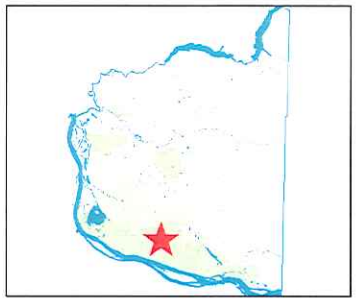
PAYMENT DUE ON RECIEPT OF INVOICE, UNLESS PRIOR ARRAINGMENTS HAVE BEEN MADE.
$25 LATE FEE WILL BE CHARGED ON ALL OVER DUE INVOICES

Customer Signature ________________________

Geocortex IMF Viewer
Internet Mapping Framework

Today's Family Dentistry





Legend

- Parcels
- Private Wells
  - 1 Year
  - 5 Year
  - 10 Year
- Public Wells
  - 1 Year
  - 5 Year
  - 10 Year
- Roads
  - Alley
  - Arterial
  - DNR
  - DNR (Private Land)
  - Driveway
  - Interstate
  - Interstate Ramp
  - Primary Arterial
  - Private Roads
  - Private Roads w/o Names
  - Public Roads
  - SR Ramp
  - State Route
- Groundwater Protection Areas
  - Category 1 Recharge Areas
  - Category 2 Recharge Areas
  - Within 1,000-foot buffer
  - Within 1,900-foot buffer
- Waterbodies
- Rural Centers
- City Boundaries
- Urban Growth Boundaries
- County Boundary

0 500 1000 1500 ft.

Scale: 1:5,036

Map center: 1114786, 118656

MAPQUEST

Map of 2616 NE 112th Ave

Vancouver, WA 98684-4284

Notes