SECOND QUARTERLY GROUNDWATER SAMPLING

Former Round The Clock Deli

722 South Lincoln Street, Port Angeles, WA

WA DOE Facility ID: 63427274
VCP Project No. SW0962

Prepared for:

Washington State Department of Ecology

SW Regional Office – Toxics Cleanup Program
P.O. Box 47775
Olympia, WA 98504

Prepared By:

GeoPro Environmental Services LLC

Post Office Box 26
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August 28, 2015

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1 PROJECT DESCRIPTION

1.1 Location

The Site is located at 722 South Lincoln Street, Port Angeles, Clallam County, Washington (Figure 1). The Site was most recently occupied by Around The Clock Deli which operated as a food and gasoline fuel business. The Site is listed by the Washington Department of Ecology (DOE) as Facility 63427274, a Hazardous Waste Generator and a LUST facility. The Site is listed with the DOE Voluntary Cleanup Program as Project No. SW0962 to perform independent remedial activities related to known petroleum hydrocarbon contamination.

The Site is located at the southeast corner of South Lincoln Street (Highway 101) and Southeast 8th Street. South Lincoln is oriented northeast-southwest and Southeast 8th Street is oriented northwest-southeast. The Site is located in Section 1, Township 36N, and Range 6W. The Site is Clallam County tax assessor ID number 58030 encompassing about 16,900 square feet. The elevation of the Site is approximately 120 feet above MSL.

The Site is underlain by glacial outwash consisting of sand, pebbly sand, and interbedded silt as shown on the Geologic Map (Figure 2).

1.2 Purpose

GeoPro Environmental Services LLC (GeoPro) was requested by Blue Mountain Environmental Consultants (BMEC), Waitsburg, WA to collect and evaluate the second quarterly groundwater samples from monitor wells GES-1, GES-2, GES-3, GES-4, and GES-5. The wells were purged and sampled on August 18, 2015.

The Site is adjacent to an area for which previous groundwater investigations by GeoPro and others have concluded that petroleum contaminated groundwater plumes are co-mingled from near the intersection of Southeast 8th Street and South Lincoln Street, and northeasterly along South Lincoln Street. Therefore, some of the onsite detected contamination in groundwater appears to be from offsite sources which have migrated onto the Site.

2 FIELD INVESTIGATION

2.1 Objectives

The objectives of this investigation include:

- Purge each monitor well and collect groundwater samples for analysis of gasoline, benzene, toluene, ethylbenze, xylenes (BTEX) and total lead.
- Prepare a summary report on findings.

2.2 Monitor Well Locations

Five monitor wells were installed by GeoPro in April 2015 based on anticipated future site uses within parking areas and away from border landscaping. GeoPro located the monitor wells approximately 23-feet from the existing sidewalk and the existing building on the adjacent property to the northeast. The groundwater monitor well locations are shown in Figure 3.

- Monitor wells GES-1 and GES-2 are located upgradient adjacent to Southeast 8th Street.
- Monitor well GES-3 is located side-gradient adjacent to South Lincoln Street.
- Monitor well GES-4 is located side and downgradient along South Lincoln Street, south of the existing building on the adjacent property.
- Monitor well GES-5 is located downgradient, and south of the existing building on the adjacent property.

During drilling, a continuous geologic log was prepared describing the subsurface materials encountered, depth to groundwater, presence of saturated zones, and any other pertinent geologic or environmental observations. Geologic Logs are presented in the first quarterly report by GeoPro.

2.3 Well Installation

Probe holes were drilled and well installations were completed by ESN Northwest, Olympia, Washington in accordance with Chapter 173-160 WAC. The screen and blank well casings are constructed of two-inch diameter Schedule 40, polyvinyl chloride (PVC) flush coupled, threaded pipe. The screens are slotted with machine cuts of 0.010-inch width. The filter packs consist of clean graded Colorado silica #10-20 sand. The well casing consists of a threaded end cap on a 15-foot section of screen, which is threaded fit into blank casing.

The filter pack was placed to approximately one-foot above the well screen. An aquifer seal of bentonite pellets was placed from above the filter pack to 0.5-feet depth. A surface seal

of Portland Type II cement was placed from about 0.5-feet to the surface. A water tight well plug was installed over the casing and a vault traffic box was cemented around the well at the surface. Each well construction is depicted on the Geologic Logs in the first quarterly report by GeoPro. Each well top of collar (TOC) will be surveyed accurate in the future. Groundwater gradients and flow directions have been documented during previous investigations and significant changes are not anticipated.

2.4 Chemicals of Concern and Analytical Methods

Site Chemicals Of Potential Concern (COPCs) include gasoline-related constituents BTEX and lead. These chemicals were detected during previous investigations and remedial measures. The chemical analyses shown in Table 1 were completed on groundwater samples from monitor wells GES-2, GES-3, GES-4, and GES-5 and reported at method detection limit goals at or below MTCA Method A unrestricted land use cleanup levels.

Table 1 – Analytical Methods

Groundwater	Gasoline Method NWTPH-Gx	BTEX Method EPA 8021B	Total Lead Method EPA 200.8

2.5 Sampling Procedures

2.5.1 Groundwater Sampling Procedures

Samples of groundwater were collected according to standard field methods and prepared in accordance with protocol established by the analytical laboratory for containers, preserving, storage and transport to the laboratory. A chain of custody was prepared for all samples. A groundwater sample was not collected from monitor well GES-1 due to insufficient water in the well.

Groundwater sampling was conducted with a submersible pump and new tubing using low-flow purge sampling techniques. During sampling, new tubing attached to the pump was lowered down the well casing. The pump intake was positioned at the approximate middle of the well screen. The wells were purged until measured groundwater quality parameters were reasonably stable.

During purging, measured water quality parameters included temperature, pH, conductivity and turbidity. After stabilization was reached, a groundwater sample was collected. Groundwater samples were prepared according to protocol established by the analytical laboratory. The samples were placed in an iced cooler along with the chain of custody and shipped to Onsite environmental laboratory, Redmond, Washington. The groundwater sample field logs are included in Appendix B.

3 DATA EVALUATION

3.1 Groundwater Analytical Results

The following Table 2 is a summary of groundwater sample analyses. All of the groundwater samples contain constituents which exceed DOE MTCA Method A for Unlimited Land Use cleanup levels and are consistent with historical data of the Site. No results are reported for monitor well GES-1 because of insufficient water to sample. A duplicate sample from monitor well GES-4 was analyzed.

The laboratory analytical reports are included in Appendix A.

Table 2 – Groundwater Analytical Results

		Units: µg/L				
Monitor Well	**Gasoline**	**Benzene**	**Toluene**	**Ethylbenzene**	**Total Xylenes**	**Total Lead**
GES-2	32000	2100	2600	810	3800	15
GES-3	160000	23000	40000	3400	16300	12
GES-4	42000	1500	980	1500	6000	2.1
GES-5	50000	3000	3300	2200	7900	11
MTCA Method A Cleanup Level Unrestricted Land Use	800 if benzene present; 1000 if no benzene	5	1000	700	1000	15

Notes:
Yellow highlight indicates concentration is above MTCA Method A Cleanup Levels.

3.2 Groundwater Analytical Results Trend

All analyzed constituents concentrations have deceased since the first quarterly sample event except total lead in groundwater samples from monitor wells GES-2, GES-4 and GES-5. The higher concentrations during the first quarterly sampling event could be due the disturbance of contaminated soil during drilling and installation of the monitor wells.

Table 3 – Groundwater Analytical Results Trend

Units: µg/L

Monitor Well	Gasoline		Benzene		Toluene		Ethylbenzene		Total Xylenes		Total Lead	
	1st Qtr	2nd Qtr	1st Qtr	2nd Qtr	1st Qtr	2nd Qtr	1st Qtr	2nd Qtr	1st Qtr	2nd Qtr	1st Qtr	2nd Qtr
GES-1	600	NW	120	NW	140	NW	25	NW	78	NW	24	NW
GES-2	83000	32000	8800	2100	14000	2600	2900	810	12500	3800	ND<1.1	15
GES-3	190000	160000	2900	23000	42000	40000	4600	3400	22200	16300	15	12
GES-4	95000	42000	2700	1500	6200	980	4000	1500	18200	6000	1.4	2.1
GES-5	110000	50000	10000	3000	22000	3300	3300	2200	14600	7900	2.1	11
MTCA Method A Cleanup Level Unrestricted Land Use	800 if benzene present; 1000 if no benzene		5		1000		700		1000		15	

NW – insufficient groundwater to sample

4 PREVIOUS INVESTIGATIONS

The following is a summary of historical Site occupations and investigations from available reports by Kane (2008, 2009, 2012), GeoEngineers (2013), and GeoPro (2012, 2014, 2015a).

The potential sources of contamination within the Site were likely associated with leaks from several USTs and associated dispensers and pipelines. Historic data indicates gasoline and BTEX were detected onsite above MTCA cleanup levels.

- The Site has been a petroleum service station since about 1924, with at least 3 building and UST configurations (Kane reports).
    - 1924 – the Sanborn Map shows a gas station exists onsite.
    - 1939-1947 – Historical directories list Raymond J. Lain gas station onsite.
    - 1949 – The Lain gas station replaced by larger gas station but site listed as vacant in 1956.
    - 1964 - Sanborn Map shows onsite gas station configuration similar to the 2008 layout without canopies.
- 1985 – Aerial photo depicts gas station with two canopies (apparently dispenser islands). (Kane report)
- 1993 – Petroleum Construction and Environment, Chehalis, WA decommissioned three USTs in October within the northeast area of the site and lined the excavation with visqueen, leaving contaminated soil in-place. One UST was decommissioned in-place by filling with cement. The decommissioning could have been in response to a DOE soil gas survey in June 1993 which concluded the Site could be one of the sources of petroleum contamination migrating into the basement of the Lincoln Apartments in the early 1980's. (Kane report)
- 2007 – Kane completed Phase I and Limited Phase II Environmental Site Assessments. A heating oil underground storage tank was located and decommissioned adjacent to the northwest side of the Round The Clock Deli building.
- 2008 – Kane completed a remedial investigation including sampling of soil and groundwater in 16 borings and 28 groundwater monitoring wells in the vicinity of the Site and identified potential areas of co-mingled plumes.
- 2008 – Round The Clock Deli business became non-operational.
- 2009 – Kane completed remedial excavations.

- 2012 - GeoPro completed forensic groundwater sampling of co-mingled plumes and developed the following conclusions.
    - ❖ A co-mingled plume of gasoline contaminated groundwater extends from approximately the northern boundary of the ARCO property on Southeast 8th Street for at least 400 feet under South Lincoln Street, and is approximately 300 feet wide (northwest to southeast).
    - ❖ Gasoline contaminated groundwater is migrating north-northeasterly in a distribution pattern probably influenced by a historic drainage channel now buried beneath South Lincoln Street.
    - ❖ Up and/or side gradient offsite sources contributing to the area contaminated groundwater plumes may be, or have been, service station or auto repair facilities located to the east and south across South Lincoln and Southeast 8th Streets.
- 2013 – GeoEngineers completed an investigation to sample on and offsite soil and groundwater and conduct slug tests.
- 2015a – GeoPro Environmental Services installation and First Quarterly sampling of five monitor wells located within site boundaries.

5 CONCLUSIONS

- Five groundwater monitor wells were previously installed by GeoPro at the Site as long term monitoring sampling points within an area proposed for asphalt parking development. The wells are located in the upgradient, side-gradient, and downgradient groundwater flow directions relative to the Site.
- The analyses of groundwater samples for gasoline and gasoline constituents from each of five onsite monitor wells during this second quarterly sampling event continue to exceed DOE MTCA Method A Unlimited Land Use cleanup levels.
- The analysis of groundwater from upgradient monitor wells GES-2 indicates an offsite source of contamination.

6 RECOMMENDATIONS

The following are recommendations based on the results of this investigation.

- Maintain the five new monitor wells as a minimum number of sampling points within the Site without compromising the ability to monitor the onsite impact of offsite contamination. These points include upgradient, side-gradient, and downgradient groundwater flow directions.
- Maintain a forensic sampling program that will allow comparison of Site groundwater and free product analyses to offsite analyses with the objective of estimating co-mingled contaminant plume migration characteristics, such as, flow rates, directions, volumes and plume differentiation ratios.
- Any free product from Site or offsite wells should be considered for forensic analysis to evaluate age and migration differentiation within the co-mingled contaminant plumes. Such forensic evaluation should include PIANO analyses and the distribution of these hydrocarbon classes which usually span the range C_3 to C_{12}. Additional forensic analysis can be used to provide estimates gasoline grades, possible different biodegradation among the co-mingled plumes, and rates of migration.
- Maintain a frequency of sampling by collecting groundwater samples including during the season with the declining highest head levels. Occasional infrequent sampling may allow sufficient free product collection for forensic analysis.
- Continue to collect and evaluate groundwater samples in accordance with DOE MTCA standards and regulations and discussions with DOE.

7 REFERENCES

Friedman & Bruya, Inc., August 28, 2012, "Letter Report on Port Angeles Fingerprint 120605, Forensic Evaluation and Chemical Analyses", prepared for GeoPro LLC, Battle Ground, WA.

GeoEngineers, December 2013, Former Round the Clock Deli Property, Drafts of "Vicinity Map", "Site Plan with Groundwater Monitoring Locations" (map), Groundwater Analytical Results" (map), "Soil Exploration Locations with Analytical Results" (map), "Groundwater Analysis – Aquifer Slug Tests" (table), "Groundwater Field Screening and Chemical Analytical Data (Petroleum Hydrocarbons and BTEX)" (table), and "Soil Field Screening and Chemical Analytical Data (Petroleum Hydrocarbons and BTEX)" (table).

GeoPro LLC, September 4, 2012, "Initial Groundwater Forensic Evaluation Report, Proposed Rite Aid Property, Former Round The Clock Deli, 722 South Lincoln Street, Port Angeles, WA", prepared for Port Angeles Retail, LLC, Seattle, WA.

GeoPro LLC, September 9, 2014, "Groundwater Review With Excel Charts, Former Round The Clock Deli, 722 South Lincoln Street, Port Angeles, WA", prepared for BMEC, Richland, WA.

GeoPro Environmental Services LLC, November 7, 2014, "Work Plan, Onsite Groundwater Monitor Well Installations and Sampling, Former Round The Clock Deli, 722 South Lincoln Street, Port Angeles, WA", prepared for Washington Department of Ecology, SW Regional Office, Olympia, WA.

GeoPro Environmental Services LLC, April 17, 2015, "Groundwater Monitor Well Installations and Sampling, Former Round The Clock Deli, 722 South Lincoln Street, Port Angeles, WA", prepared for Washington Department of Ecology, SW Regional Office, Olympia, WA.

Kane Environmental Inc., April 11, 2008, "Remedial Investigation, Proposed Rite Aid Store, 710 and 722 South Lincoln Street, 107-121 East Eight Street and 717 South Laurel Street, Portland Angeles, Washington 98362", prepared for Stantec, Inc., Kirkland, WA.

Kane Environmental Inc., September 15, 2009, "Interim Remedial Action Report, 722 South Lincoln Street, Port Angeles, Washington", prepared for Marginal Properties, LLC, Kirkland, Washington.

Kane Environmental Inc., January 20, 2012, "Remediation Product Injection & Groundwater Performance Monitoring, Former Round the Clock Deli, 722 South Lincoln Street, Port Angeles, Washington", prepared for Mr. Bruce Groom, Seattle Bank, Seattle, Washington.

Washington State Department of Ecology, June 1993, "Lincoln Apartment Soil Gas Survey, Port Angeles Washington, March and April 1993", by Pamela B. Marti.

Washington State Department of Ecology, 2015, Toxics Cleanup Program, Integrated Site Information System, "Round The Clock Deli Grocery", CleanupSite ID 6415, FS ID 63427274.

8 LIMITATIONS

This report has been prepared for use by the landowner or responsible regulatory agency and is not intended for use by others. Each project and project site is unique and the information contained in this report is not applicable to other sites. Only the landowner or responsible regulatory agency should rely upon this report and all others should contact GeoPro Environmental Services LLC (GeoPro) before applying or interpreting any information in this report.

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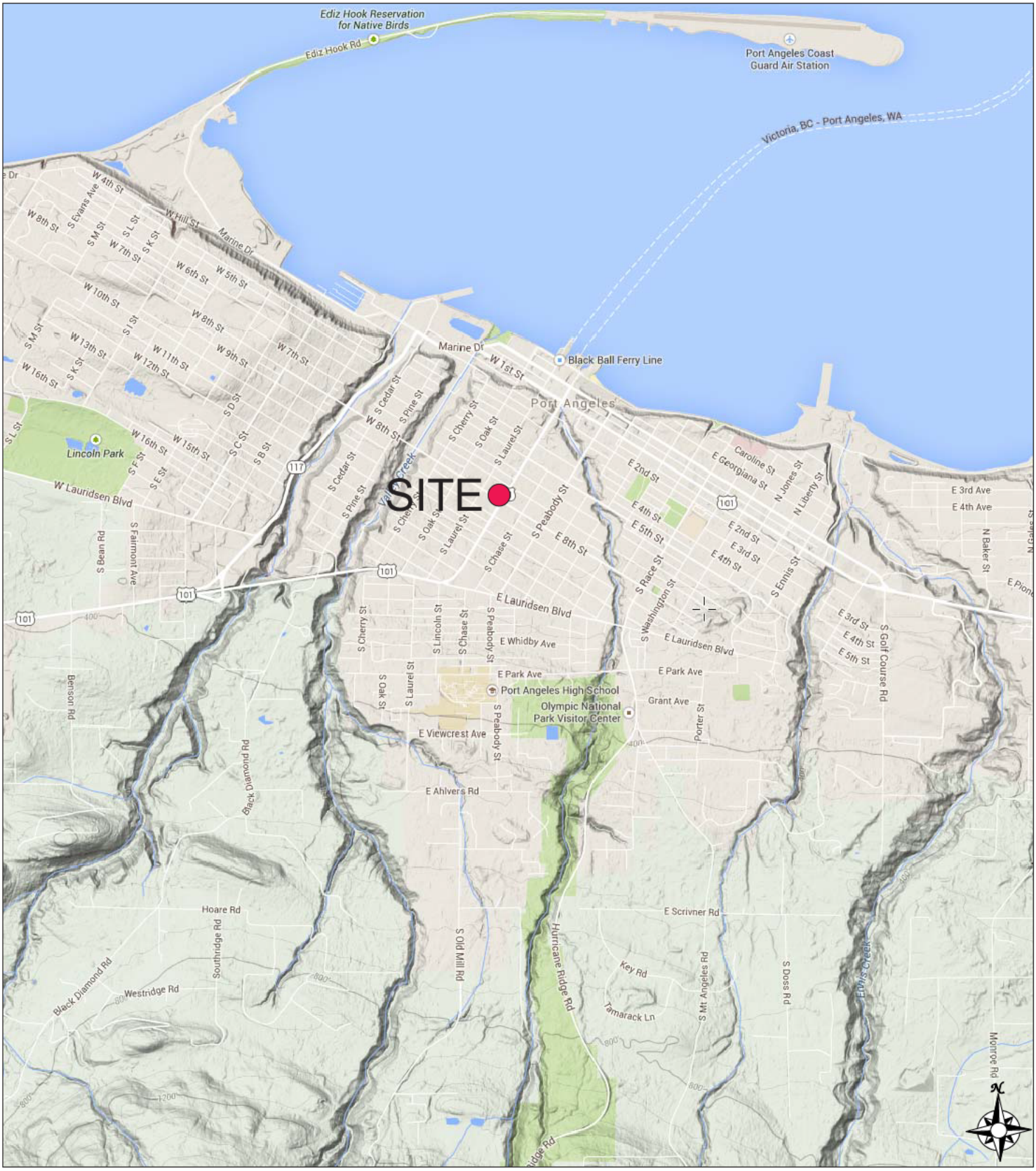
Conclusions and findings apply only to present conditions, and opinions expressed are subject to revision when additional or new information is presented and reviewed. This warranty is in lieu of all other warranties, either expressed or implied. It is possible that explorations failed to reveal the presence of hazardous materials at areas where hazardous materials were assumed, suspected or expected to exist (hazardous as used herein shall also mean contaminated and polluted). Through use of this report it is understood that failure to sample soil or water, or install groundwater monitor wells at locations through appropriate and mutually agreed-upon techniques does not guarantee that hazardous materials have, or will be, detected at such locations. Similarly, areas which in fact are unaffected by hazardous materials at the time of this report, may later, due to natural causes or human intervention, become contaminated. GeoPro is not responsible for failing to locate hazardous materials which have not been discovered at the time of this report or in the future. In the event of changes in future development plans as understood at the time of this report, the conclusions and recommendations made herein shall be invalid until GeoPro is given the opportunity to review and modify this report in writing. Portions of an Agreement to perform professional services may or may not be disclosed in this report.

Richard C. Kent, L.G.

cc: BMEC



Source: Clallam County GIS

Prepared by **GeoPro LLC** PO Box 26 Battle Ground, WA 98604 geopro@comcast.net	**Former Round The Clock Deli** 722 South Lincoln St., Port Angeles, WA WA DOE Facility ID 63427274 August 2015	**LOCATION MAP**	**Figure 1**

image: SIO, NOAA, US Navy, NGA, GEBCO: compiled by Google Earth

no scale

Geologic Map: WA Div. of Geology and Earth Resources Open File Report 2003-6

Qgos: Vashon recessional outwash sand (Pleistocene)—Proglacial sand, pebbly sand, and interbedded silt; thin to medium bedded. May have been deposited in a deltaic environment during a period of higher sea level during the late Pleistocene.

Qgd: Vashon Drift, undivided (Pleistocene)—Glacial deposits of Vashon age consisting of mixtures of sand and gravel, lodgment till, sandy ablation(?) till, and lacustrine(?) silts; commonly characterized by hummocky topography.

Qguc: Undifferentiated surficial deposits (Holocene–Pleistocene)—Clay, silt, sand, gravel, till, diamicton, and peat.

Prepared by **GeoPro LLC** PO Box 26 Battle Ground, WA 98604 geopro@comcast.net	**Former Round The Clock Deli** 722 South Lincoln St., Port Angeles, WA WA DOE Facility ID 63427274 August 2015	**GEOLOGIC MAP**	**Figure 2**

Prepared by **GeoPro LLC** PO Box 26 Battle Ground, WA 98604 geopro@comcast.net	**Former Round The Clock Deli** 722 South Lincoln St., Port Angeles, WA WA DOE Facility ID 63427274 August 2015	**SITE MAP WITH MONITOR WELL LOCATIONS**	**Figure 3**

Appendix A
LABORATORY REPORT AUGUST 2015

OnSite Environmental Inc.
14648 NE 95th Street, Redmond, WA 98052 • (425) 883-3881

August 28, 2015

Richard Kent
GeoPro, LLC
611 NW 5th Avenue
Battle Ground, WA 98604

Re: Analytical Data for Project 150320-2
Laboratory Reference No. 1508-222

Dear Rick:

Enclosed are the analytical results and associated quality control data for samples submitted on August 20, 2015.

The standard policy of OnSite Environmental, Inc. is to store your samples for 30 days from the date of receipt. If you require longer storage, please contact the laboratory.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning the data, or need additional information, please feel free to call me.

Sincerely,

David Baumeister
Project Manager

Enclosures

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

Case Narrative

Samples were collected on August 18, 2015 and received by the laboratory on August 20, 2015. They were maintained at the laboratory at a temperature of 2°C to 6°C.

Please note that any and all soil sample results are reported on a dry-weight basis, unless otherwise noted below.

General QA/QC issues associated with the analytical data enclosed in this laboratory report will be indicated with a reference to a comment or explanation on the Data Qualifier page. More complex and involved QA/QC issues will be discussed in detail below.

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**GES-2**					
Laboratory ID:	08-222-01					
Benzene	**2100**	250	EPA 8021B	8-25-15	8-25-15	
Toluene	**2600**	250	EPA 8021B	8-25-15	8-25-15	
Ethyl Benzene	**810**	250	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**2600**	250	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**1200**	250	EPA 8021B	8-25-15	8-25-15	
Gasoline	**32000**	25000	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-113*				
Client ID:	**GES-3**					
Laboratory ID:	08-222-02					
Benzene	**23000**	250	EPA 8021B	8-25-15	8-25-15	
Toluene	**40000**	500	EPA 8021B	8-26-15	8-26-15	
Ethyl Benzene	**3400**	250	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**11000**	250	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**5300**	250	EPA 8021B	8-25-15	8-25-15	
Gasoline	**160000**	25000	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-113*				
Client ID:	**GES-4**					
Laboratory ID:	08-222-03					
Benzene	**1500**	250	EPA 8021B	8-25-15	8-25-15	
Toluene	**980**	250	EPA 8021B	8-25-15	8-25-15	
Ethyl Benzene	**1500**	250	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**4800**	250	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**1200**	250	EPA 8021B	8-25-15	8-25-15	
Gasoline	**42000**	25000	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-113*				

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

NWTPH-Gx/BTEX

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
Client ID:	**GES-4-D**					
Laboratory ID:	08-222-04					
Benzene	**1500**	250	EPA 8021B	8-25-15	8-25-15	
Toluene	**1000**	250	EPA 8021B	8-25-15	8-25-15	
Ethyl Benzene	**1500**	250	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**4900**	250	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**1200**	250	EPA 8021B	8-25-15	8-25-15	
Gasoline	**43000**	25000	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*83*	*71-113*				
Client ID:	**GES-5**					
Laboratory ID:	08-222-05					
Benzene	**3000**	250	EPA 8021B	8-25-15	8-25-15	
Toluene	**3300**	250	EPA 8021B	8-25-15	8-25-15	
Ethyl Benzene	**2200**	250	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**5800**	250	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**2100**	250	EPA 8021B	8-25-15	8-25-15	
Gasoline	**50000**	25000	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-113*				
Client ID:	**TRIP BLANK**					
Laboratory ID:	08-222-06					
Benzene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
Toluene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
Gasoline	**ND**	100	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*92*	*71-113*				

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

NWTPH-Gx/BTEX
QUALITY CONTROL

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	Method	Date Prepared	Date Analyzed	Flags
METHOD BLANK						
Laboratory ID:	MB0825W1					
Benzene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
Toluene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
o-Xylene	**ND**	1.0	EPA 8021B	8-25-15	8-25-15	
Gasoline	**ND**	100	NWTPH-Gx	8-25-15	8-25-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*86*	*71-113*				
Laboratory ID:	MB0826W1					
Benzene	**ND**	1.0	EPA 8021B	8-26-15	8-26-15	
Toluene	**ND**	1.0	EPA 8021B	8-26-15	8-26-15	
Ethyl Benzene	**ND**	1.0	EPA 8021B	8-26-15	8-26-15	
m,p-Xylene	**ND**	1.0	EPA 8021B	8-26-15	8-26-15	
o-Xylene	**ND**	1.0	EPA 8021B	8-26-15	8-26-15	
Gasoline	**ND**	100	NWTPH-Gx	8-26-15	8-26-15	
Surrogate:	*Percent Recovery*	*Control Limits*				
Fluorobenzene	*84*	*71-113*				

Analyte	Result		Spike Level		Source Result	Percent Recovery		Recovery Limits	RPD	RPD Limit	Flags
DUPLICATE											
Laboratory ID:	08-206-07										
	ORIG	DUP									
Benzene	**ND**	**ND**	NA	NA		NA		NA	NA	30	
Toluene	**227**	**225**	NA	NA		NA		NA	1	30	
Ethyl Benzene	**34.2**	**33.9**	NA	NA		NA		NA	1	30	
m,p-Xylene	**53.6**	**53.3**	NA	NA		NA		NA	1	30	
o-Xylene	**54.8**	**54.6**	NA	NA		NA		NA	0	30	
Gasoline	**1300**	**1300**	NA	NA		NA		NA	0	30	
Surrogate:											
Fluorobenzene						*86*	*85*	*71-113*			
SPIKE BLANKS											
Laboratory ID:	SB0825W1										
	SB	SBD	SB	SBD		SB	SBD				
Benzene	**48.9**	**51.0**	50.0	50.0		**98**	**102**	80-118	4	11	
Toluene	**48.4**	**50.0**	50.0	50.0		**97**	**100**	81-119	3	11	
Ethyl Benzene	**47.9**	**49.8**	50.0	50.0		**96**	**100**	80-121	4	12	
m,p-Xylene	**48.2**	**49.8**	50.0	50.0		**96**	**100**	81-121	3	12	
o-Xylene	**47.3**	**49.0**	50.0	50.0		**95**	**98**	81-119	4	12	
Surrogate:											
Fluorobenzene						*89*	*91*	*71-113*			

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

TOTAL LEAD
EPA 200.8

Matrix: Water
Units: ug/L (ppb)

Analyte	Result	PQL	EPA Method	Date Prepared	Date Analyzed	Flags
Lab ID:	08-222-01					
Client ID:	**GES-2**					
Lead	**15**	1.1	200.8	8-26-15	8-26-15	
Lab ID:	08-222-02					
Client ID:	**GES-3**					
Lead	**12**	1.1	200.8	8-26-15	8-26-15	
Lab ID:	08-222-03					
Client ID:	**GES-4**					
Lead	**2.1**	1.1	200.8	8-26-15	8-26-15	
Lab ID:	08-222-04					
Client ID:	**GES-4-D**					
Lead	**2.0**	1.1	200.8	8-26-15	8-26-15	
Lab ID:	08-222-05					
Client ID:	**GES-5**					
Lead	**11**	1.1	200.8	8-26-15	8-26-15	

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

TOTAL LEAD
EPA 200.8
METHOD BLANK QUALITY CONTROL

Date Extracted:	8-26-15
Date Analyzed:	8-26-15
Matrix:	Water
Units:	ug/L (ppb)
Lab ID:	MB0826WM1

Analyte	Method	Result	PQL
Lead	200.8	**ND**	1.1

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

TOTAL LEAD
EPA 200.8
DUPLICATE QUALITY CONTROL

Date Extracted: 8-26-15
Date Analyzed: 8-26-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 08-211-03

Analyte	Sample Result	Duplicate Result	RPD	PQL	Flags
Lead	**ND**	**ND**	NA	1.1	

Date of Report: August 28, 2015
Samples Submitted: August 20, 2015
Laboratory Reference: 1508-222
Project: 150320-2

TOTAL LEAD
EPA 200.8
MS/MSD QUALITY CONTROL

Date Extracted: 8-26-15
Date Analyzed: 8-26-15

Matrix: Water
Units: ug/L (ppb)

Lab ID: 08-211-03

Analyte	Spike Level	MS	Percent Recovery	MSD	Percent Recovery	RPD	Flags
Lead	111	**111**	100	**112**	101	1	

OnSite Environmental Inc.

Data Qualifiers and Abbreviations

A - Due to a high sample concentration, the amount spiked is insufficient for meaningful MS/MSD recovery data.

B - The analyte indicated was also found in the blank sample.

C - The duplicate RPD is outside control limits due to high result variability when analyte concentrations are within five times the quantitation limit.

E - The value reported exceeds the quantitation range and is an estimate.

F - Surrogate recovery data is not available due to the high concentration of coeluting target compounds.

H - The analyte indicated is a common laboratory solvent and may have been introduced during sample preparation, and be impacting the sample result.

I - Compound recovery is outside of the control limits.

J - The value reported was below the practical quantitation limit. The value is an estimate.

K - Sample duplicate RPD is outside control limits due to sample inhomogeneity. The sample was re-extracted and re-analyzed with similar results.

L - The RPD is outside of the control limits.

M - Hydrocarbons in the gasoline range are impacting the diesel range result.

M1 - Hydrocarbons in the gasoline range (toluene-napthalene) are present in the sample.

N - Hydrocarbons in the lube oil range are impacting the diesel range result.

N1 - Hydrocarbons in diesel range are impacting lube oil range results.

O - Hydrocarbons indicative of heavier fuels are present in the sample and are impacting the gasoline result.

P - The RPD of the detected concentrations between the two columns is greater than 40.

Q - Surrogate recovery is outside of the control limits.

S - Surrogate recovery data is not available due to the necessary dilution of the sample.

T - The sample chromatogram is not similar to a typical _____.

U - The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

U1 - The practical quantitation limit is elevated due to interferences present in the sample.

V - Matrix Spike/Matrix Spike Duplicate recoveries are outside control limits due to matrix effects.

W - Matrix Spike/Matrix Spike Duplicate RPD are outside control limits due to matrix effects.

X - Sample extract treated with a mercury cleanup procedure.

X1- Sample extract treated with a Sulfuric acid/Silica gel cleanup procedure.

Y - The calibration verification for this analyte exceeded the 20% drift specified in method 8260C, and therefore the reported result should be considered an estimate. The overall performance of the calibration verification standard met the acceptance criteria of the method.

Z -

ND - Not Detected at PQL
PQL - Practical Quantitation Limit
RPD - Relative Percent Difference

Chain of Custody

Page 1 of 1

OnSite Environmental Inc.
Analytical Laboratory Testing Services
14648 NE 95th Street • Redmond, WA 98052
Phone: (425) 883-3881 • www.onsite-env.com

Company: GeoPro LLC
Project Number: 150320-2
Project Name: Round the Clock
Project Manager: Rick Kent
Sampled by: GeoPro LLC

Turnaround Request (in working days)
(Check One)
☐ Same Day ☐ 1 Day
☐ 2 Days ☐ 3 Days
☒ Standard (7 Days) (TPH analysis 5 Days)
☐ _____ (other)

Laboratory Number: 08-222

Lab ID	Sample Identification	Date Sampled	Time Sampled	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx/BTEX	NWTPH-Gx	NWTPH-Dx	Volatiles 8260C	Halogenated Volatiles 8260C	Semivolatiles 8270D/SIM (with low-level PAHs)	PAHs 8270D/SIM (low-level)	PCBs 8082A	Organochlorine Pesticides 8081B	Organophosphorus Pesticides 8270D/SIM	Chlorinated Acid Herbicides 8151A	Total RCRA Metals	Total MTCA Metals	TCLP Metals	HEM (oil and grease) 1664A	Total Lead					% Moisture
1	GES-2	8-18-15	1345	W	4		X															X					
2	GES-3	8-18-15	1428	W			X															X					
3	GES-4	8-18-15	1555	W			X															X					
4	GES-4-D	8-18-15	1555	W			X															X					
5	GES-5	8-18-15	1515	W	↓		X															X					
6	TRIP BLANK	—	—	↓	3		X																				

	Signature	Company	Date	Time
Relinquished		GeoPro LLC	8-18-15	1645
Received		ORE	8/20/15	1340
Relinquished				
Received				
Relinquished				
Received				
Reviewed/Date		Reviewed/Date		

Comments/Special Instructions
GES-1 was dry, containers sent back empty

Chromatograms with final report ☐

Data Package: Standard ☒ Level III ☐ Level IV ☐
Electronic Data Deliverables (EDDs) ☐ _____

Appendix B
GROUNDWATER SAMPLE FIELD LOGS

GeoPro Environmental Services LLC
Post Office Box 26
Battle Ground, WA 98604
(360) 666-1465

GROUNDWATER SAMPLE FIELD LOG

DAY/DATE: Tuesday, August 18, 2015	SHEET 1 of 1
PROJECT NAME: Round The Clock	PROJECT NO.: 150320
PROJECT LOCATION: 722 S. Lincoln St., Port Angeles, WA	
Weather: ☒Fair ☐Overcast ☐Fog ☐Rain ☐Snow Temp.: ☐<0 ☐0-32 ☐33-54 ☒55-79 ☐>80 Humidity %: ☒<25 ☐26-49 ☐50-74 ☐>75	Wind: ☐Calm ☒Light ☐Moderate ☐Strong Wind from:☐N ☐NE ☐E ☐SE ☐S ☐SW ☒W ☐NW Precip.: ☒None ☐Mist ☐Light ☐Moderate ☐Heavy

WELL NO.: GES-1	**SAMPLE NUMBER: GES-1-W**
Well depth: 20 ft / Screen length: 15 ft	Laboratory: Onsite, Redmond WA
Well install date: 4-6-15	Measured well depth: 19.35 ft TOC
Pre-purge SWL: 17.49 ft TOC	Casing diameter: 2 inch
Time Sample Collected:	SWL at sample time: 18.25 ft TOC
Sample Turbidity: ppm	Sample Conductance: µS
Sample Color:	Sample pH:
Sample Temperature: °F	Sample Odor:

Field Data

Time 24 Hr	Temp °F	Conductivity µS	pH	Pump Rate	Turbidity ppm	Other Odor, etc.
1205	Insufficient water to sample; discharge dropped to zero					

Sample Collection Method:

The monitor well was purged:

☒of stagnant water in the casing and filter by slowly setting a pump or intake tubing within the approximate middle of the screened interval or slightly above the middle until the until the temperature, conductivity and pH stabilized. OR,

☐ of stagnant water in the casing and filter by slowly setting a pump or intake tubing at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized. OR,

☐ by hand bailing until temperature, conductivity and pH stabilized.

Samples were collected:

☒by setting a pump, or tubing attached to a pump, within the approximate middle of the screened interval until the temperature, conductivity and pH stabilized.

☐ by setting a pump, or tubing attached to a pump, at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized.

☐ with disposable bailers until the temperature, conductivity and pH stabilized.

Sample Shipment:

Water samples were placed in appropriate containers suitable for analyses requested. As necessary, the containers were prepared by the lab. The containers were filled to prevent air-entrapment, sealed, labeled, and placed in an ice chest at approximately 4°C (e.g. blu-ice) for transport to the laboratory.

Analysis Requested: (per laboratory protocols)

☐ NWTPH-HCID; ☐ NWTPH-Gx; ☐ NWTPH-Dx; ☒NWTPH-Gx/BTEX; ☐ VOC; ☐ HVOC;
☐ SemiVOC; ☐ PAH; ☐ PCB; ☐ Pesticides; (☐8, ☐10, ☐13) Metals; ☐ TCLP; ☐ MTBE;
☒OTHER: total lead

SIGNATURE: 

PRINT NAME: A. Kent

Notes: 2-inch, Schedule 40 PVC casing = 0.163 gallons per foot; 6" Hole = 1.469 gallons per foot

This groundwater sample field log and related information depict subsurface conditions only at a specific location and time. Hydrogeologic conditions at other locations may differ from conditions encountered and described in this log. The passage of time may result in a change in original well construction, geologic and hydrogeologic conditions and engineering properties at this location.

GeoPro Environmental Services LLC
Post Office Box 26
Battle Ground, WA 98604
(360) 666-1465

GROUNDWATER SAMPLE FIELD LOG

DAY/DATE: Tuesday, August 18, 2015	SHEET 1 of 1
PROJECT NAME: Round The Clock	PROJECT NO.: 150320
PROJECT LOCATION: 722 S. Lincoln St., Port Angeles, WA	
Weather: ☒Fair ☐Overcast ☐Fog ☐Rain ☐Snow Temp.: ☐<0 ☐0-32 ☐33-54 ☒55-79 ☐>80 Humidity %: ☒<25 ☐26-49 ☐50-74 ☐>75	Wind: ☐Calm ☒Light ☐Moderate ☐Strong Wind from:☐N ☐NE ☐E ☐SE ☐S ☐SW ☒W ☐NW Precip.: ☒None ☐Mist ☐Light ☐Moderate ☐Heavy

WELL NO.: GES-2 (Well depth: 20 ft; Screen length: 15 ft)	**SAMPLE NUMBER: GES-2-W**
Well install date: 4-6-15	Laboratory: Onsite, Redmond WA
Pre-purge SWL: 15.31 ft TOC	Measured well depth: 19.27 ft TOC
Time Sample Collected: 1345	Casing diameter: 2 inch
Sample Turbidity: 444 ppm	SWL at sample time: 17.00 ft TOC
Sample Color: brownish yellow	Sample Conductance: 888 µS
Sample Temperature: 71.5 °F	Sample pH: 6.66
	Sample Odor: very slight petroleum

Field Data

Time 24 Hr	Temp °F	Conductivity µS	pH	Pump Rate	Turbidity ppm	Other Odor, etc.
1336	73.6	878	6.77	<1 gpm	439	Slight odor
1340	70.5	884	6.62	<1 gpm	441	Slight odor
1344	71.5	888	6.66	<1 gpm	444	Less odor

Sample Collection Method:

The monitor well was purged:

☒of stagnant water in the casing and filter by slowly setting a pump or intake tubing within the approximate middle of the screened interval or slightly above the middle until the until the temperature, conductivity and pH stabilized. OR,

☐ of stagnant water in the casing and filter by slowly setting a pump or intake tubing at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized. OR,

☐ by hand bailing until temperature, conductivity and pH stabilized.

Samples were collected:

☒by setting a pump, or tubing attached to a pump, within the approximate middle of the screened interval until the temperature, conductivity and pH stabilized.

☐ by setting a pump, or tubing attached to a pump, at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized.

☐ with disposable bailers until the temperature, conductivity and pH stabilized.

Sample Shipment:

Water samples were placed in appropriate containers suitable for analyses requested. As necessary, the containers were prepared by the lab. The containers were filled to prevent air-entrapment, sealed, labeled, and placed in an ice chest at approximately 4°C (e.g. blu-ice) for transport to the laboratory.

Analysis Requested: (per laboratory protocols)

☐ NWTPH-HCID; ☐ NWTPH-Gx; ☐ NWTPH-Dx; ☒NWTPH-Gx/BTEX; ☐ VOC; ☐ HVOC;
☐ SemiVOC; ☐ PAH; ☐ PCB; ☐ Pesticides; (☐8, ☐10, ☐13) Metals; ☐ TCLP; ☐ MTBE;
☒OTHER: total lead

SIGNATURE: 

PRINT NAME: A Kent

Notes: 2-inch, Schedule 40 PVC casing = 0.163 gallons per foot; 6" Hole = 1.469 gallons per foot

This groundwater sample field log and related information depict subsurface conditions only at a specific location and time. Hydrogeologic conditions at other locations may differ from conditions encountered and described in this log. The passage of time may result in a change in original well construction, geologic and hydrogeologic conditions and engineering properties at this location.

GeoPro Environmental Services LLC
Post Office Box 26
Battle Ground, WA 98604
(360) 666-1465

GROUNDWATER SAMPLE FIELD LOG

DAY/DATE: Tuesday, August 18, 2015	SHEET 1 of 1
PROJECT NAME: Round The Clock	PROJECT NO.: 150320
PROJECT LOCATION: 722 S. Lincoln St., Port Angeles, WA	
Weather: ☒Fair ☐Overcast ☐Fog ☐Rain ☐Snow Temp.: ☐<0 ☐0-32 ☐33-54 ☐55-79 ☒>80 Humidity %: ☒<25 ☐26-49 ☐50-74 ☐>75	Wind: ☒Calm ☐Light ☐Moderate ☐Strong Wind from:☐N ☒NE ☐E ☐SE ☐S ☐SW ☐W ☐NW Precip.: ☒None ☐Mist ☐Light ☐Moderate ☐Heavy

WELL NO.: GES-3	**SAMPLE NUMBER: GES-3-W**
Well depth: 20 ft | Screen length: 15 ft	Laboratory: Onsite, Redmond WA
Well install date: 4-6-15	Measured well depth: 20.15 ft TOC
Pre-purge SWL: 14.80 ft TOC	Casing diameter: 2 inch
Time Sample Collected: 1428	SWL at sample time: 16.81 ft TOC
Sample Turbidity: 661 ppm	Sample Conductance: 1328 µS
Sample Color: slight yellow-brown	Sample pH: 6.54
Sample Temperature: NA °F	Sample Odor: very slight petroleum

Field Data

Time 24 Hr	Temp °F	Conductivity µS	pH	Pump Rate	Turbidity ppm	Other Odor, etc.
1419	72.2	807	6.72	<0.5 gpm	408	v slight odor
1422	NA	1290	6.52	<0.5 gpm	646	v slight odor
1425	NA	1328	6.54	<0.5 gpm	662	v slight odor

Sample Collection Method:

The monitor well was purged:

☒of stagnant water in the casing and filter by slowly setting a pump or intake tubing within the approximate middle of the screened interval or slightly above the middle until the until the temperature, conductivity and pH stabilized. OR,

☐ of stagnant water in the casing and filter by slowly setting a pump or intake tubing at approximately ____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized. OR,

☐ by hand bailing until temperature, conductivity and pH stabilized.

Samples were collected:

☒by setting a pump, or tubing attached to a pump, within the approximate middle of the screened interval until the temperature, conductivity and pH stabilized.

☐ by setting a pump, or tubing attached to a pump, at approximately ____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized.

☐ with disposable bailers until the temperature, conductivity and pH stabilized.

Sample Shipment:

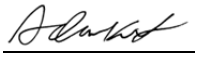
Water samples were placed in appropriate containers suitable for analyses requested. As necessary, the containers were prepared by the lab. The containers were filled to prevent air-entrapment, sealed, labeled, and placed in an ice chest at approximately 4°C (e.g. blu-ice) for transport to the laboratory.

Analysis Requested: (per laboratory protocols)

☐ NWTPH-HCID; ☐ NWTPH-Gx; ☐ NWTPH-Dx; ☒NWTPH-Gx/BTEX; ☐ VOC; ☐ HVOC;

☐ SemiVOC; ☐ PAH; ☐ PCB; ☐ Pesticides; (☐8, ☐10, ☐13) Metals; ☐ TCLP; ☐ MTBE;

☒OTHER: total lead

SIGNATURE: 

PRINT NAME: A. Kent

Notes: 2-inch, Schedule 40 PVC casing = 0.163 gallons per foot; 6" Hole = 1.469 gallons per foot

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GROUNDWATER SAMPLE FIELD LOG

DAY/DATE: Tuesday, August 18, 2015	SHEET 1 of 1
PROJECT NAME: Round The Clock	PROJECT NO.: 150320
PROJECT LOCATION: 722 S. Lincoln St., Port Angeles, WA	
Weather: ☒Fair ☐Overcast ☐Fog ☐Rain ☐Snow Temp.: ☐<0 ☐0-32 ☐33-54 ☐55-79 ☒>80 Humidity %: ☒<25 ☐26-49 ☐50-74 ☐>75	Wind: ☐Calm ☒Light ☐Moderate ☐Strong Wind from:☐N ☒NE ☐E ☐SE ☐S ☐SW ☐W ☐NW Precip.: ☒None ☐Mist ☐Light ☐Moderate ☐Heavy

WELL NO.: GES-4	**SAMPLE NUMBER: GES-4-W**
Well depth: 20 ft / Screen length: 15 ft	Laboratory: Onsite, Redmond WA
Well install date: 4-7-15	Measured well depth: 20.10 ft TOC
Pre-purge SWL: 15.73 ft TOC	Casing diameter: 2 inch
Time Sample Collected: 1555	SWL at sample time: 15.95 ft TOC
Sample Turbidity: 233 ppm	Sample Conductance: 465 µS
Sample Color: greenish gray/slight sheen	Sample pH: 6.48
Sample Temperature: 66.9 °F	Sample Odor: strong petroleum

Field Data

Time 24 Hr	Temp °F	Conductivity µS	pH	Pump Rate	Turbidity ppm	Other Odor, etc.
1543	71.0	478	6.65	<1 gpm	236	Strong odor
1547	67.9	477	6.64	<1 gpm	239	Strong odor
1550	66.9	465	6.48	<1 gpm	283	Strong odor

Sample Collection Method:

The monitor well was purged:

☒of stagnant water in the casing and filter by slowly setting a pump or intake tubing within the approximate middle of the screened interval or slightly above the middle until the until the temperature, conductivity and pH stabilized. OR,

☐ of stagnant water in the casing and filter by slowly setting a pump or intake tubing at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized. OR,

☐ by hand bailing until temperature, conductivity and pH stabilized.

Samples were collected:

☒by setting a pump, or tubing attached to a pump, within the approximate middle of the screened interval until the temperature, conductivity and pH stabilized.

☐ by setting a pump, or tubing attached to a pump, at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized.

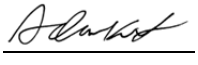
☐ with disposable bailers until the temperature, conductivity and pH stabilized.

Sample Shipment:

Water samples were placed in appropriate containers suitable for analyses requested. As necessary, the containers were prepared by the lab. The containers were filled to prevent air-entrapment, sealed, labeled, and placed in an ice chest at approximately 4°C (e.g. blu-ice) for transport to the laboratory.

Analysis Requested: (per laboratory protocols)

☐ NWTPH-HCID; ☐ NWTPH-Gx; ☐ NWTPH-Dx; ☒NWTPH-Gx/BTEX; ☐ VOC; ☐ HVOC;
☐ SemiVOC; ☐ PAH; ☐ PCB; ☐ Pesticides; (☐8, ☐10, ☐13) Metals; ☐ TCLP; ☐ MTBE;
☒OTHER: total lead

SIGNATURE: 

PRINT NAME: A Kent

Notes: 2-inch, Schedule 40 PVC casing = 0.163 gallons per foot; 6" Hole = 1.469 gallons per foot

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GeoPro Environmental Services LLC
Post Office Box 26
Battle Ground, WA 98604
(360) 666-1465

GROUNDWATER SAMPLE FIELD LOG

DAY/DATE: Tuesday, August 18, 2015	SHEET 1 of 1
PROJECT NAME: Round The Clock	PROJECT NO.: 150320
PROJECT LOCATION: 722 S. Lincoln St., Port Angeles, WA	
Weather: ☒Fair ☐Overcast ☐Fog ☐Rain ☐Snow Temp.: ☐<0 ☐0-32 ❑33-54 ☐55-79 ☒>80 Humidity %: ☒<25 ☐26-49 ❑50-74 ☐>75	Wind: ☒Calm ☐Light ☐Moderate ☐Strong Wind from:☐N ☒NE ☐E ☐SE ☐S ☐SW ☐W ☐NW Precip.: ☒None ☐Mist ☐Light ☐Moderate ☐Heavy

WELL NO.: GES-5	**SAMPLE NUMBER: GES-5-W**
Well depth: 20 ft / Screen length: 15 ft	Laboratory: Onsite, Redmond WA
Well install date: 4-7-15	Measured well depth: 19.95 ft TOC
Pre-purge SWL: 16.02 ft TOC	Casing diameter: 2 inch
Time Sample Collected: 1515	SWL at sample time: 16.34 ft TOC
Sample Turbidity: 449 ppm	Sample Conductance: 994 µS
Sample Color: grey/slight sheen	Sample pH: 6.58
Sample Temperature: 67.5 °F	Sample Odor: strong petroleum

Field Data

Time 24 Hr	Temp °F	Conductivity µS	pH	Pump Rate	Turbidity ppm	Other Odor, etc.
1502	73.4	997	6.61	~0.25 gpm	499	Strong odor
1506	68.6	1068	6.62	<0.25 gpm	532	Strong odor
1510	67.5	994	6.58	<0.5 gpm	499	Strong odor

Sample Collection Method:

The monitor well was purged:

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☐ of stagnant water in the casing and filter by slowly setting a pump or intake tubing at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized. OR,

☐ by hand bailing until temperature, conductivity and pH stabilized.

Samples were collected:

☒by setting a pump, or tubing attached to a pump, within the approximate middle of the screened interval until the temperature, conductivity and pH stabilized.

☐ by setting a pump, or tubing attached to a pump, at approximately _____ feet above the bottom of the casing until the temperature, conductivity and pH stabilized.

☐ with disposable bailers until the temperature, conductivity and pH stabilized.

Sample Shipment:

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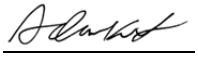
Analysis Requested: (per laboratory protocols)

☐ NWTPH-HCID; ☐ NWTPH-Gx; ☐ NWTPH-Dx; ☒NWTPH-Gx/BTEX; ☐ VOC; ☐ HVOC;
☐ SemiVOC; ☐ PAH; ☐ PCB; ☐ Pesticides; (☐8, ☐10, ☐13) Metals; ☐ TCLP; ☐ MTBE;
☒OTHER: total lead

SIGNATURE: 

PRINT NAME: A. Kent

Notes: 2-inch, Schedule 40 PVC casing = 0.163 gallons per foot; 6" Hole = 1.469 gallons per foot