INDOOR/OUTDOOR AIR SAMPLING REPORT
THE HUNGRY WHALE
1600 NORTH MONTESANO STREET
WESTPORT, WASHINGTON 98595

Submitted to:
Washington Department of Ecology
Toxics Cleanup Program-Southwest Region
300 Desmond Drive SE
Lacey, Washington

Prepared for:
Port of Grays Harbor
111 South Wooding Street
Aberdeen, Washington 98520

Submitted by:
Stantec Consulting Services Inc.
9400 SW Barnes Road, Suite 100
Portland, Oregon 97225

April 25, 2012

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1.0 INTRODUCTION

Stantec Consulting Services Inc. (Stantec), on behalf of the Port of Grays Harbor (the Port), has prepared this *Indoor/Outdoor Air Sampling Report* for the Hungry Whale (the Site) located in Westport, Washington (shown on **Figure 1**). Field work was conducted on March 21, 2012.

1.1 PURPOSE AND SCOPE OF WORK

The purpose of the air sampling was to evaluate if petroleum hydrocarbons present in subsurface soil vapor have entered indoor air via the vapor intrusion pathway.

The scope of work consisted of the following tasks:

- Pre-sampling building survey.
- Collection of two outdoor and two indoor air samples.
- Submit samples to Eurofins of Folsom, California for analysis of the following:
    - Select Volatile Organic Compounds (including BTEX) by USEPA Method TO-15 SIM/Full Scan Modes[1];
- Prepare report documenting sampling procedures and analytical results.

1.2 BACKGROUND

On December 12, 2011 Stantec supervised the installation of seven shallow soil gas probes to evaluate the possible presence of subsurface soil gas impacted by petroleum hydrocarbons originating from past or current releases. Stantec collected soil vapor samples from the shallow soil vapor probes on December 20, 2011 and performed fourth quarter 2011 groundwater monitoring of existing and locatable wells in the monitoring well network. The groundwater monitoring was completed in order to evaluate the changes in contaminant concentration and distribution in groundwater since the last monitoring event.

Laboratory analysis of shallow soil vapor samples indicated that no VOCs were detected at concentrations at or above Table B-1 soil gas screening levels (Method B or C) in samples collected from soil vapor wells SG-1 and SG-7. These vapor wells are both located to the north of the on-site convenience store and approximately 40 feet to the southeast of Wilson Avenue.

[1] *Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air*, Second Edition, U.S. EPA, January 1999.

Benzene, toluene, ethylbenzene, xylenes, 1,2,4- and 1,3,5-trimethylbenzene were detected at concentrations above Table B-1 screening levels in samples collected from at least one soil vapor well.

The fourth quarter 2011 groundwater monitoring and sampling activities were conducted on November 29 and 30, 2011 and December 1, 2011. Liquid Phase hydrocarbons (LPH) were present in monitoring wells MW-04 and MW-09. Total petroleum hydrocarbons in the gasoline range (TPH-G), benzene, toluene, ethylbenzene, and total xylenes were detected at concentrations exceeding MTCA Method A cleanup levels in at least six groundwater monitoring wells. The reported concentrations are relatively consistent with other recent reporting periods with the following exceptions. The detected concentrations of toluene and total xylenes in the sample from MW-09 decreased to below MTCA Method A cleanup limits. The concentration of total xylenes in the sample from MW-10 decreased to below MTCA Method A cleanup limits. The concentration of benzene in the sample from MW-11 increased to above MTCA Method A cleanup limits.

The methodology used and the results obtained were described in the report titled *Soil Gas Sampling and Groundwater Monitoring Assessment, the Hungry Whale, 1600 North Montesano Street, Westport, Washington* prepared by Stantec and submitted to Ecology in January 2012.

Ecology reviewed the report and, due to the high concentrations of VOCs in soil vapor in proximity to the Site building, recommended that the Port of Grays Harbor consider collecting indoor air samples within the building to evaluate possible vapor intrusion[2].

[2] Ecology has not developed guidance to assess vapor intrusion at sites where workers are exposed to the same chemicals in the work place (e.g., gasoline filling stations).

2.0 AIR SAMPLING

Stantec personnel maintained detailed field notes during all field activities covered by this report. Field notes and sample collection logs are provided in Attachments B and C.

2.1 BUILDING SURVEY

Since the goal of this investigation was to identify whether contaminants of concern that are present in soil gas have infiltrated indoor air, prior to collection of air samples, Stantec conducted an indoor air quality building survey for the Site building. The objective of the survey was to observe and document activities conducted within the Site building that may represent input sources for any detected concentrations of chemicals of concern (COCs) in indoor air samples (e.g., chemical storage). Field measurements were collected at various locations within the building using a hand-held photoioniztion detector (PID) designed to measure organic compounds in the parts per million range. Deflections from background measurements may indicate a source of VOCs or possible pathway for VOC transport. As part of the survey, Stantec observed and documented conditions that may facilitate vapor transport from the subsurface (e.g., cracks, expansion joints in flooring, presence of utility conduits). Stantec also made observations outside of and in the areas surrounding the Site building to note obvious nearby potential sources of outdoor air pollution (e.g., chemical use and storage areas at or near the Site, other gasoline stations) that may contribute to possible adverse impacts on Site indoor air quality. At the time of the building survey, proposed sampling locations were determined (shown on **Figure 2**).

The completed building survey form is provided in Attachment C of this report.

2.2 INDOOR AIR SAMPLING

Based in part on the building survey, two indoor air samples were collected within the building at the following locations;

- One sample (IA-1) behind the check-out counter near the front of the store. The canister was placed near the location of utility line penetration of the concrete slab-on-grade foundation. This was also the location of historical hydrocarbon-like odors reported to Stantec by Ecology. According to the tenant, odors were noted during water line repair in 2004.

- One sample (IA-2) in an enclosed area (e.g., storage room) located at the rear of the building.

Each indoor air sample was collected in a 6-Liter individually-certified Summa™ canister equipped with a laboratory-certified flow controller set to collect a time-integrated sample over an approximately 8-hour duration. Individual certification means that each canister processed (i.e., cleaned using a combination of dilution, heat and high vacuum) is sampled and analyzed for the project-specific target analyte list by GC/MS, and that concentrations of target compounds are below project reporting limits. Each Summa™ canister was equipped with a laboratory-supplied, certified flow controller to regulate collection rates during sampling and a built-in vacuum gauge. Individual certification is also made using matching components (i.e., a particular flow controller is matched with a particular canister). Accordingly the laboratory provided unique identification numbers for each canister and flow controller which were entered on the field log and chain-of-custody form provided in Attachment A.

Each Summa™ canister was placed approximately 3 to 5 feet above floor level (a height considered to represent a normal breathing zone). After the Summa™ canister valve was opened and the canister began to fill, the progress of the integrated sampling was monitored during the sampling interval with the assumption that the volume of air sampled is a linear function of the canister vacuum. The Summa™ canister valve was closed and sampling ceased when a vacuum of approximately 5-inches Hg as measured on the laboratory-supplied gauge was obtained.

2.3 OUTDOOR AIR SAMPLING

Since outdoor air may contain background concentrations of constituents of concern; two outdoor air samples were collected in conjunction with the indoor air samples to characterize the potential contribution from outdoor air. One sample was collected upwind and one downwind based on prevailing wind direction noted at the time of sampling.

The outdoor air sample was collected concurrent with indoor air samples. The outdoor ambient air samples were collected using 6-Liter individually-certified Summa™ canisters and flow controllers set to deliver a flow rate sufficient to collect a time-integrated sample over the same duration as used for indoor air sampling (8 hours). The Summa™ canister was placed approximately 1 to 2 feet above grade and protected from the elements (wind, rain, etc.) and at a minimum of 10 to 15 feet distance from the nearest building. The outdoor ambient air sampling began 1 hour prior to the indoor air sampling, and continued to within at least 30 minutes of the completion of the indoor air sampling period.

2.4 SAMPLE HANDLING AND LABORATORY ANALYSIS

Air samples were properly labeled and placed within secure packaging received from the laboratory. Samples were not chilled since contaminants may condense in the canisters at low temperatures. Samples were transported via express delivery under chain-of-custody protocol (including noting the final canister vacuums and serial numbers of the canisters and flow

controllers) to Air Toxics Ltd. Of Folsom, California (now Eurofins), a Washington-certified laboratory, under chain-of-custody control for analysis of site-related VOCs using U.S. EPA Method TO-15 in the selective ion mode (SIM).

The VOC target compound list included those compounds detected at least once in the recently collected soil vapor samples and included:

- Benzene
- Toluene
- Ethylbenzene
- Xylenes (m, p and o)
- Propylbenzene
- 4-Ethyltoluene
- 1,3,5-Trimethylbenzene
- 1,2,4-Trimethylbenzene
- TPH ref to Gasoline (MW=100)

2.5 RESULTS

2.5.1 Building Survey

The Hungry Whale convenience store was constructed on a concrete slab-on-grade foundation with cinderblock sidewalls. Interior floor surfaces are covered with linoleum. The building is not equipped with a central HVAC system; portable space heaters are used during the cold season. During warm weather, the front door remains open to increase air circulation. At the time of sampling both the front and rear doors were closed except for normal ingress/egress by customers and employees.

According to the building tenant, no interior painting has occurred since the mid-1980's. Numerous products containing petroleum constituents are stored on shelves near the front of the building. These products are for retail sales and appeared to be properly stored.

Other than the water line under the front check-out counter, no penetrations of the concrete slab were noted. The water line was replaced in 2004 and sealant was applied around the surface penetration. There were no PID readings above background measurements within the store. No odors were noted during the building survey.

A copy of the complete building survey including a chemical inventory and building sketch are provided in Attachment C of this report.

2.5.2 Outdoor Air

Benzene was detected in both outdoor air samples at concentrations of 0.38 and 0.40 micrograms per cubic meter ($\mu g/m^3$). Toluene was detected in both outdoor air samples at concentrations of 0.55 and 0.30 $\mu g/m^3$. None of the other VOCs selected for analysis were reported at or above their respective laboratory method reporting limits (LRLs).

2.5.3 Indoor Air

Propylbenzene and 1,3,5-trimethylbenzene were not detected above LRLs in either indoor air sample. Benzene (1.2 and 0.59 µg/m^3); toluene (13 and 2.1 µg/m^3); ethylbenzene (0.81 and 0.32 µg/m^3); 4-ethyltoluene (1.2 µg/m^3-IA-1 only); m,p-xylenes (3.7 and 1.7 µg/m^3); o-xylene (1.3 and 0.59 µg/m^3), 1,2,4-trimethylbenzene (1.5 and 0.85 µg/m^3) and TPH-G referenced to gasoline with a molecular weight equal to 100 (280 and 110 µg/m^3) were detected in indoor air samples IA-1 and IA-2 respectively (except where otherwise noted).

A summary of all air sample laboratory results is provided in Table 1 of this report.

2.5.4 Data Usability Assessment

Review of field notes and sample collection forms indicated that there were no unacceptable departures from sampling procedures set forth in the *Air Sampling Scope of Work, The Hungry Whale, Westport, Washington,* prepared by Stantec and submitted to Ecology in February 2012.

Review of field notes, chain-of-custody documentation and laboratory sample acceptance forms indicates that all samples were collected and stored at ambient temperature and received by the laboratory within the 30 day hold-time established for canister analysis.

Review of final laboratory reports indicates that there were no laboratory modifications to the US EPA method TO-15. All canister dilutions and adjusted final pressures were appropriate for the sample volume collected. There were no detections of target compounds reported in laboratory method blanks which would indicate instrument carryover between sample runs. The laboratory conformed to method requirements for continuing instrument calibration, spike, and surrogate analysis and reporting of % Recovery and Relative Percent Difference (RPD).

Based on the foregoing information, no corrective action was required either in field or at the laboratory. Stantec concludes that all data are considered acceptable for use and meet the requirements necessary for decision making.

3.0 SUMMARY AND CONCLUSIONS

On March 21, 2012, Stantec on behalf of the Port of Grays Harbor performed a building survey of the Hungry Whale convenience store in Westport, Washington. Following completion of the survey, two indoor and two outdoor air samples were collected over approximately 8-hours and submitted for analysis of volatile organic compounds using U.S. EPA Method TO-15 SIM/Full Scan analysis. VOCs selected for analysis included only those previously detected in shallow soil vapor samples collected at the Site.

Chemicals detected in the air sample collected at the front of the building are approximately twice the concentrations present in the sample collected from the rear of the building. One exception to this pattern was noted: toluene was detected at a concentration approximately six times higher than present in the sample collected from the rear of the building. This suggests the use of a product containing that chemical within the building near the front check-out counter (the location of sample IA-1). All chemicals identified in indoor air (BTEX) were detected at concentrations well below 95th percentile concentrations of VOCs in indoor air established as part of national studies[3].

The results indicate that none of the VOCs analyzed were detected at concentrations at or above the Method C indoor air screening levels presented in Table B-1 of the *Washington Department of Ecology Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and* Remedial *Action, Review Draft, October 2009.*

[3] *Background Indoor Air Concentrations of Volatile Organic Compounds in North American Residences (1990-2005): A compilation of Statistics for Assessing Vapor Intrusion,* U.S. EPA OSWER, 530-R-10-001, June 2011.

4.0 Standard Limitations

This report was prepared in accordance with generally accepted professional engineering and environmental consulting practices existing at the time this report was prepared and applicable to the location of the site. It was prepared for the exclusive use of the Port of Grays Harbor and the Washington Department of Ecology. Any re-use of this report for a different purpose or by others not identified above shall be at the user's sole risk without liability to Stantec Consulting Services Inc. (Stantec). The opinions expressed and data collected are based on the conditions of the site existing at the time of the field investigation. No other warranties, expressed or implied are made by Stantec.

Prepared by:

Patrick H. Vaughan, MS, CEM, REA II
Senior Scientist

Reviewed by:

Marc Sauze, PE
PCML

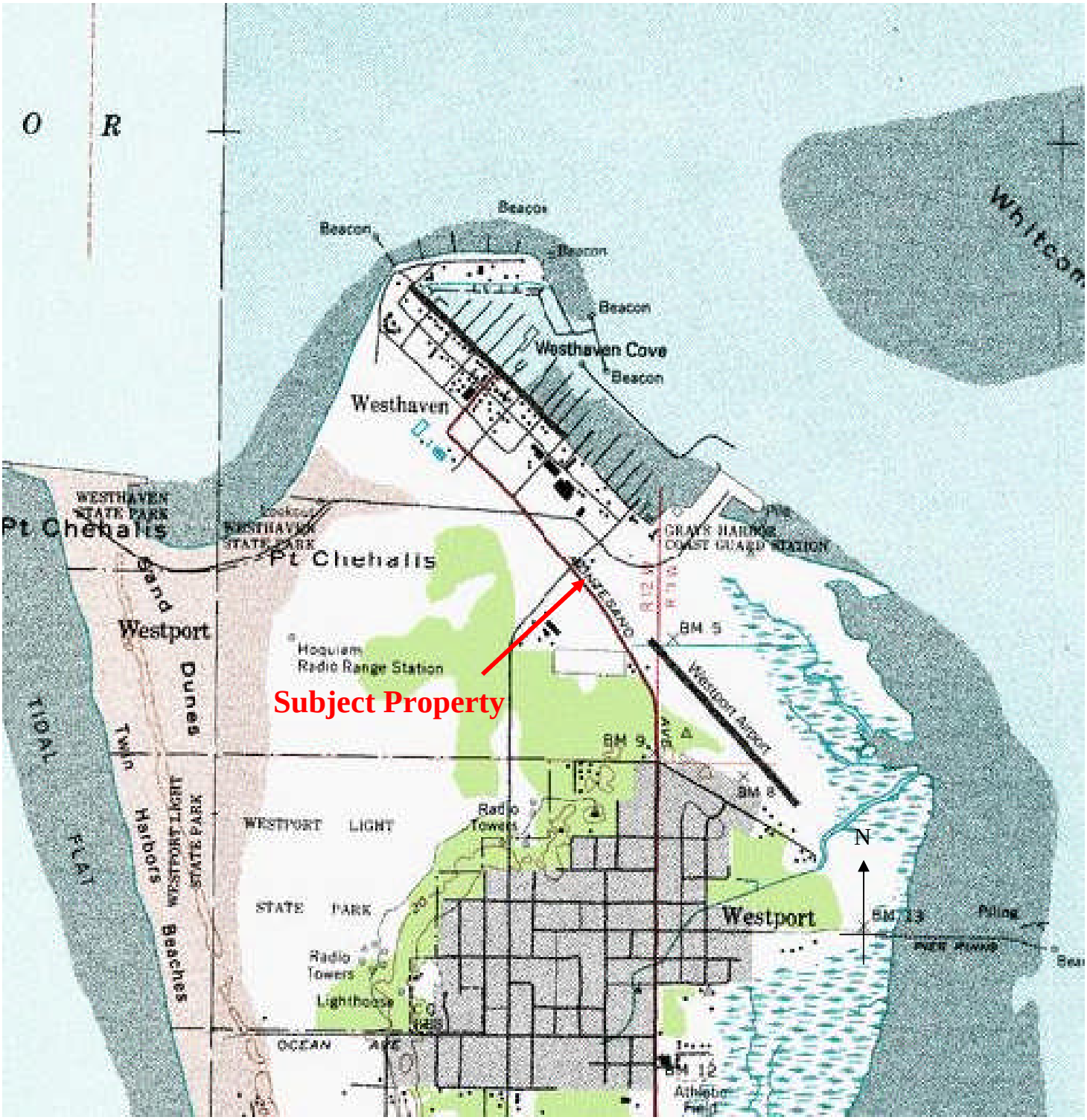
TABLES

Table 1
Indoor/Outdoor Air Sample Results
The Hungry Whale
Westport, Washington

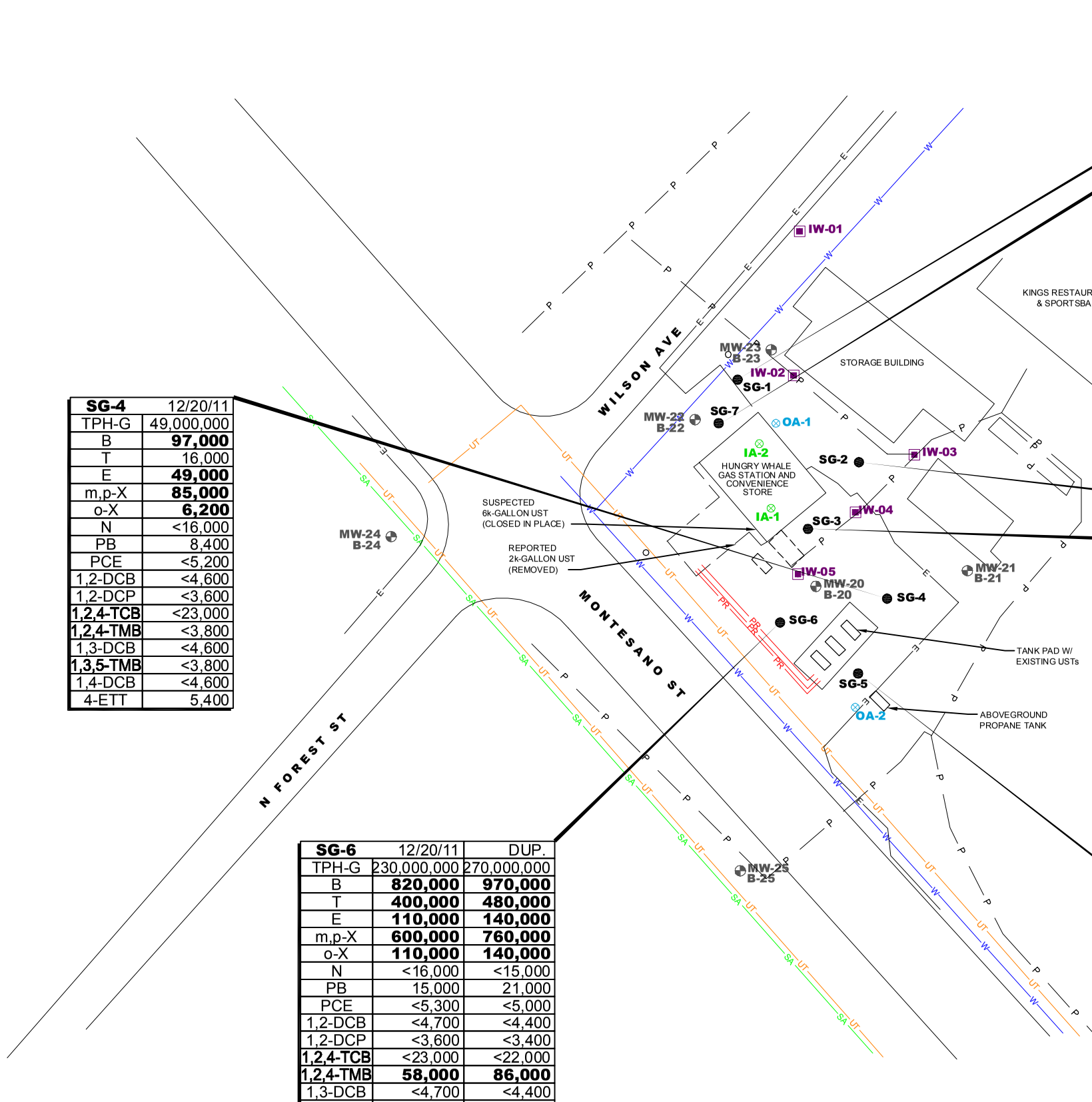
Compound	Table B-1 Indoor Air Screening Levels[1] (µg/m^3)	Sample # and Reported Concentration (µg/m^3)			
		OA-1	**OA-2**	**IA-1**	**IA-2**
		3/21/2012	3/21/2012	3/21/2012	3/21/2012
TPH-g	NE[2]	<62	<65	280	110
Benzene	3.2	0.38	0.40	1.2	0.59
Toluene	4,900	0.55	0.30	13	2.1
Ethylbenzene	1,000	<0.13	<0.14	0.81	0.32
4-Ethyltoluene	NE[2]	<0.75	<0.78	1.2	<0.78
m,p-Xylene	100	<0.26	<0.27	3.7	1.7
o-Xylene	100	<0.13	<0.14	1.3	0.59
Propylbenzene	NE[2]	<0.75	<0.78	<0.79	<0.78
1,3,5-Trimethylbenzene	6	<0.75	<0.78	<0.79	<0.78
1,2,4-Trimethylbenzene	6	<0.75	<0.78	1.5	0.85

Notes:
All analysis by EPA Method TO-15 GC/MS SIM/Full Scan
[1] - Washington Department of Ecology Method C Indoor Air Screening Levels, Table B-1, Review Draft October 2009
[2] - MTCA Method C CUL not established for this analyte.
OA = Outdoor Air
IA = Indoor Air
Analytical values in **BOLD** indicate a value exceeding Table B-1 Screening Level

FIGURES



Stantec 12034 134th Ct NE, Suite 102 Redmond, WA 98052 Phone: (425) 298-1000 FAX: (425) 298-1019	The Hungry Whale 1600 North Montesano Street Westport, Washington 98595		**Site Location Map**		Figure: **1**
	Job Number: 212302770	Drawn By: ATM	Checked By: MS	Approved By: MS	Date: 1/24/2012



SG-4	12/20/11
TPH-G	49,000,000
B	**97,000**
T	16,000
E	**49,000**
m,p-X	**85,000**
o-X	**6,200**
N	<16,000
PB	8,400
PCE	<5,200
1,2-DCB	<4,600
1,2-DCP	<3,600
1,2,4-TCB	<23,000
1,2,4-TMB	<3,800
1,3-DCB	<4,600
1,3,5-TMB	<3,800
1,4-DCB	<4,600
4-ETT	5,400

SG-6	12/20/11	DUP.
TPH-G	230,000,000	270,000,000
B	**820,000**	**970,000**
T	**400,000**	**480,000**
E	**110,000**	**140,000**
m,p-X	**600,000**	**760,000**
o-X	**110,000**	**140,000**
N	<16,000	<15,000
PB	15,000	21,000
PCE	<5,300	<5,000
1,2-DCB	<4,700	<4,400
1,2-DCP	<3,600	<3,400
1,2,4-TCB	<23,000	<22,000
1,2,4-TMB	**58,000**	**86,000**
1,3-DCB	<4,700	<4,400
1,3,5-TMB	**28,000**	**40,000**
1,4-DCB	<4,700	<4,400
4-ETT	86,000	120,000

SG-7	12/20/11
TPH-G	650
B	<2.4
T	8.7
E	<3.3
m,p-X	9.2
o-X	<3.3
N	<16
PB	<3.8
PCE	<5.2
1,2-DCB	<4.6
1,2-DCP	<3.5
1,2,4-TCB	<23
1,2,4-TMB	3.9
1,3-DCB	<4.6
1,3,5-TMB	<3.8
1,4-DCB	<4.6
4-ETT	<3.8

SG-3	12/20/11
TPH-G	170,000,000
B	**370,000**
T	**380,000**
E	**310,000**
m,p-X	**1,100,000**
o-X	**270,000**
N	<16,000
PB	28,000
PCE	<5,200
1,2-DCB	<4,600
1,2-DCP	<3,600
1,2,4-TCB	<23,000
1,2,4-TMB	**63,000**
1,3-DCB	<4,600
1,3,5-TMB	**32,000**
1,4-DCB	<4,600
4-ETT	100,000

SG-1	12/20/11
TPH-G	1,800
B	<2.4
T	<2.8
E	<3.2
m,p-X	7.3
o-X	<3.2
N	<16
PB	<3.7
PCE	<5.0
1,2-DCB	<4.5
1,2-DCP	<3.4
1,2,4-TCB	<22
1,2,4-TMB	9.1
1,3-DCB	<4.5
1,3,5-TMB	7.8
1,4-DCB	<4.5
4-ETT	4.5

SG-2	12/20/11
TPH-G	11,000
B	58
T	35
E	87
m,p-X	140
o-X	34
N	<16
PB	14
PCE	<5.2
1,2-DCB	<4.6
1,2-DCP	<3.5
1,2,4-TCB	<23
1,2,4-TMB	40
1,3-DCB	<4.6
1,3,5-TMB	**130**
1,4-DCB	<4.6
4-ETT	36

SG-5	12/20/11
TPH-G	190,000,000
B	**460,000**
T	**1,200,000**
E	**260,000**
m,p-X	**1,200,000**
o-X	**350,000**
N	<16,000
PB	28,000
PCE	<5,200
1,2-DCB	<4,600
1,2-DCP	<3,500
1,2,4-TCB	<22,000
1,2,4-TMB	**99,000**
1,3-DCB	<4,600
1,3,5-TMB	**47,000**
1,4-DCB	<4,600
4-ETT	140,000

LEGEND

- E — ELECTRIC LINE
- SA — SANITARY SEWER LINE
- UT — UNDERGROUND TELEPHONE LINE
- W — WATER LINE
- P — SYSTEM PIPING
- PR — PRODUCT LINE
- MW-20 B-20 — MONITORING WELL (SES 2007)
- IW-01 — INJECTION WELL
- SG-1 — PROPOSED SOIL GAS SAMPLE POINTS
- IA-1 — INDOOR AIR SAMPLE LOCATION
- OA-1 — OUTDOOR AIR SAMPLE LOCATION

ANALYTE

WELL ID	
TPH-G	TOTAL PETROLEUM HYDROCARBONS GASOLINE RANGE
B	BENZENE
T	TOLUENE
E	ETHYL BENZENE
X	TOTAL XYLENES
m,p-X	m,p-XYLENE
o-X	o-XYLENE
N	NAPHTHALENE
PB	PROPYLBENZENE
PCE	TETRACHLOROETHANE
1,2-DCB	1,2-DICHLOROBENZENE
1,2-DCP	1,2-DICHLOROPROPANE
1,2,4-TCB	1,2,4-TRIMCHLOROBENZENE
1,2,4-TMB	1,2,4-TRIMETHYLBENZENE
1,3-DCB	1,3-DICHLOROBENZENE
1,3,5-TMB	1,3,5-TRIMETHYLBENZENE
1,4-DCB	1,4-DICHLOROBENZENE
4-ETT	4-ETHYLTOLUENE

µg/m³ MICROGRAMS PER CUBIC METER

RESULTS OR REPORTING LIMITS IN **BOLD** EXCEED THE TABLE B-1 SCREENING LEVELS

Stantec
12034 134th COURT NORTHEAST
REDMOND, WASHINGTON 98052
PHONE: (425) 298-1000 FAX: (425) 298-1020

FOR:
THE HUNGRY WHALE
1680 NORTH MONTESANO STREET
WESPORT, WASHINGTON

SOIL GAS RESULTS AND INDOOR/OUTDOOR AIR SAMPLE LOCATIONS

FIGURE: **2**

JOB NUMBER:	DRAWN BY:	CHECKED BY:	APPROVED BY:	DATE:
212302770	JCR			APRIL 2012

APPENDIX A

Laboratory Reports and Chain-of-Custody Documentation

eurofins | Air Toxics

4/6/2012
Mr. Pat Vaughan
Stantec Consulting Corporation
9400 SW Barnes Road
Suite 200
Portland OR 97225

Project Name: Hungry Whale
Project #: 212302770
Workorder #: 1203529

Dear Mr. Pat Vaughan

The following report includes the data for the above referenced project for sample(s) received on 3/23/2012 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Air Toxics Ltd. for your air analysis needs. Air Toxics Ltd. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Kelly Buettner at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Kelly Buettner

Project Manager

eurofins | Air Toxics

WORK ORDER #: 1203529

Work Order Summary

CLIENT:	Mr. Pat Vaughan Stantec Consulting Corporation 9400 SW Barnes Road Suite 200 Portland, OR 97225	**BILL TO:**	Mr. Pat Vaughan Stantec Consulting Corporation 9400 SW Barnes Road Suite 200 Portland, OR 97225
PHONE:	503-297-1631	**P.O. #**	212302770
FAX:	503-297-5429	**PROJECT #**	212302770 Hungry Whale
DATE RECEIVED:	03/23/2012	**CONTACT:**	Kelly Buettner
DATE COMPLETED:	04/06/2012		

FRACTION #	NAME	TEST	RECEIPT VAC./PRES.	FINAL PRESSURE
01A	OA-1	Modified TO-15	3.5 "Hg	5 psi
01B	OA-1	Modified TO-15	3.5 "Hg	5 psi
02A	OA-2	Modified TO-15	4.5 "Hg	5 psi
02B	OA-2	Modified TO-15	4.5 "Hg	5 psi
03A	IA-1	Modified TO-15	5.0 "Hg	5 psi
03B	IA-1	Modified TO-15	5.0 "Hg	5 psi
04A	IA-2	Modified TO-15	4.5 "Hg	5 psi
04B	IA-2	Modified TO-15	4.5 "Hg	5 psi
05A	Lab Blank	Modified TO-15	NA	NA
05B	Lab Blank	Modified TO-15	NA	NA
06A	CCV	Modified TO-15	NA	NA
06B	CCV	Modified TO-15	NA	NA
07A	LCS	Modified TO-15	NA	NA
07AA	LCSD	Modified TO-15	NA	NA
07B	LCS	Modified TO-15	NA	NA
07BB	LCSD	Modified TO-15	NA	NA

CERTIFIED BY: Linda D. Frumarn DATE: 04/06/12

Laboratory Director

Certfication numbers: AZ Licensure AZ0719, CA NELAP - 02110CA, LA NELAP - 02089,
NY NELAP - 11291, TX NELAP - T104704434-11-3, UT NELAP -CA009332011-1, WA NELAP - C935
Name of Accrediting Agency: NELAP/Florida Department of Health, Scope of Application: Clean Air Act,
Accreditation number: E87680, Effective date: 07/01/11 , Expiration date: 06/30/12.
Air Toxics Ltd. certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 985-1020

LABORATORY NARRATIVE
Modified TO-15 Full Scan/SIM
Stantec Consulting Corporation
Workorder# 1203529

Four 6 Liter Summa Canister (100% Certified) samples were received on March 23, 2012. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the Full Scan and SIM acquisition modes. The method involves concentrating up to 1.0 liters of air. The concentrated aliquot is then flash vaporized and swept through a water management system to remove water vapor. Following dehumidification, the sample passes directly into the GC/MS for analysis.

This workorder was independently validated prior to submittal using 'USEPA National Functional Guidelines' as generally applied to the analysis of volatile organic compounds in air. A rules-based, logic driven, independent validation engine was employed to assess completeness, evaluate pass/fail of relevant project quality control requirements and verification of all quantified amounts.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the ATL modifications.

Requirement	***TO-15***	***ATL Modifications***
ICAL %RSD acceptance criteria	</=30% RSD with 2 compounds allowed out to < 40% RSD	For Full Scan: 30% RSD with 4 compounds allowed out to < 40% RSD For SIM: Project specific; default criteria is </=30% RSD with 10% of compounds allowed out to < 40% RSD
Daily Calibration	+- 30% Difference	For Full Scan: </= 30% Difference with four allowed out up to </=40%.; flag and narrate outliers For SIM: Project specific; default criteria is </= 30% Difference with 10% of compounds allowed out up to </=40%.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The results for each sample in this report were acquired from two separate data files originating from the same analytical run. The two data files have the same base file name and are differentiated with a "sim" extension on the SIM data file.

A single point calibration for TPH referenced to Gasoline was performed for each daily analytical

batch. Recovery is reported as 100% in the associated results for each CCV.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV and/or LCS.

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: OA-1

Lab ID#: 1203529-01A

No Detections Were Found.

Client Sample ID: OA-1

Lab ID#: 1203529-01B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.076	0.12	0.24	0.38
Toluene	0.030	0.15	0.11	0.55

Client Sample ID: OA-2

Lab ID#: 1203529-02A

No Detections Were Found.

Client Sample ID: OA-2

Lab ID#: 1203529-02B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.13	0.25	0.40
Toluene	0.032	0.080	0.12	0.30

Client Sample ID: IA-1

Lab ID#: 1203529-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
4-Ethyltoluene	0.16	0.23	0.79	1.2
1,2,4-Trimethylbenzene	0.16	0.31	0.79	1.5
TPH ref. to Gasoline (MW=100)	16	69	66	280

Client Sample ID: IA-1

Lab ID#: 1203529-03B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.39	0.26	1.2

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Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

Client Sample ID: IA-1

Lab ID#: 1203529-03B

Toluene	0.032	3.4	0.12	13
Ethyl Benzene	0.032	0.19	0.14	0.81
m,p-Xylene	0.064	0.86	0.28	3.7
o-Xylene	0.032	0.29	0.14	1.3

Client Sample ID: IA-2

Lab ID#: 1203529-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
1,2,4-Trimethylbenzene	0.16	0.17	0.78	0.85
TPH ref. to Gasoline (MW=100)	16	28	65	110

Client Sample ID: IA-2

Lab ID#: 1203529-04B

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.19	0.25	0.59
Toluene	0.032	0.55	0.12	2.1
Ethyl Benzene	0.032	0.074	0.14	0.32
m,p-Xylene	0.063	0.39	0.27	1.7
o-Xylene	0.032	0.14	0.14	0.59

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Client Sample ID: OA-1

Lab ID#: 1203529-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032715**	**Date of Collection: 3/21/12 4:30:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 3/27/12 07:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Propylbenzene	0.15	Not Detected	0.75	Not Detected
4-Ethyltoluene	0.15	Not Detected	0.75	Not Detected
1,3,5-Trimethylbenzene	0.15	Not Detected	0.75	Not Detected
1,2,4-Trimethylbenzene	0.15	Not Detected	0.75	Not Detected
TPH ref. to Gasoline (MW=100)	15	Not Detected	62	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: OA-1

Lab ID#: 1203529-01B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032715sim**	**Date of Collection: 3/21/12 4:30:00 PM**	
Dil. Factor:	**1.52**	**Date of Analysis: 3/27/12 07:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.076	0.12	0.24	0.38
Toluene	0.030	0.15	0.11	0.55
Ethyl Benzene	0.030	Not Detected	0.13	Not Detected
m,p-Xylene	0.061	Not Detected	0.26	Not Detected
o-Xylene	0.030	Not Detected	0.13	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: OA-2

Lab ID#: 1203529-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032717**	**Date of Collection: 3/21/12 3:53:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 3/27/12 09:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Propylbenzene	0.16	Not Detected	0.78	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.78	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,2,4-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
TPH ref. to Gasoline (MW=100)	16	Not Detected	65	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	110	70-130

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Client Sample ID: OA-2

Lab ID#: 1203529-02B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032717sim**	**Date of Collection: 3/21/12 3:53:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 3/27/12 09:17 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.13	0.25	0.40
Toluene	0.032	0.080	0.12	0.30
Ethyl Benzene	0.032	Not Detected	0.14	Not Detected
m,p-Xylene	0.063	Not Detected	0.27	Not Detected
o-Xylene	0.032	Not Detected	0.14	Not Detected

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	120	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: IA-1

Lab ID#: 1203529-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032716**	**Date of Collection: 3/21/12 4:30:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 3/27/12 08:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Propylbenzene	0.16	Not Detected	0.79	Not Detected
4-Ethyltoluene	0.16	0.23	0.79	1.2
1,3,5-Trimethylbenzene	0.16	Not Detected	0.79	Not Detected
1,2,4-Trimethylbenzene	0.16	0.31	0.79	1.5
TPH ref. to Gasoline (MW=100)	16	69	66	280

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	94	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: IA-1

Lab ID#: 1203529-03B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032716sim**	**Date of Collection: 3/21/12 4:30:00 PM**	
Dil. Factor:	**1.61**	**Date of Analysis: 3/27/12 08:28 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.080	0.39	0.26	1.2
Toluene	0.032	3.4	0.12	13
Ethyl Benzene	0.032	0.19	0.14	0.81
m,p-Xylene	0.064	0.86	0.28	3.7
o-Xylene	0.032	0.29	0.14	1.3

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	119	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: IA-2

Lab ID#: 1203529-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032718**	**Date of Collection: 3/21/12 4:40:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 3/27/12 10:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Propylbenzene	0.16	Not Detected	0.78	Not Detected
4-Ethyltoluene	0.16	Not Detected	0.78	Not Detected
1,3,5-Trimethylbenzene	0.16	Not Detected	0.78	Not Detected
1,2,4-Trimethylbenzene	0.16	0.17	0.78	0.85
TPH ref. to Gasoline (MW=100)	16	28	65	110

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	124	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	109	70-130

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Client Sample ID: IA-2

Lab ID#: 1203529-04B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032718sim**	**Date of Collection: 3/21/12 4:40:00 PM**	
Dil. Factor:	**1.58**	**Date of Analysis: 3/27/12 10:02 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.19	0.25	0.59
Toluene	0.032	0.55	0.12	2.1
Ethyl Benzene	0.032	0.074	0.14	0.32
m,p-Xylene	0.063	0.39	0.27	1.7
o-Xylene	0.032	0.14	0.14	0.59

Container Type: 6 Liter Summa Canister (100% Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	121	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1203529-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032707**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 12:47 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Propylbenzene	0.10	Not Detected	0.49	Not Detected
4-Ethyltoluene	0.10	Not Detected	0.49	Not Detected
1,3,5-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
1,2,4-Trimethylbenzene	0.10	Not Detected	0.49	Not Detected
TPH ref. to Gasoline (MW=100)	10	Not Detected	41	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	96	70-130
4-Bromofluorobenzene	107	70-130

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Client Sample ID: Lab Blank

Lab ID#: 1203529-05B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032707sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 12:47 PM**	

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.020	Not Detected	0.075	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	97	70-130
4-Bromofluorobenzene	105	70-130

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Client Sample ID: CCV

Lab ID#: 1203529-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032702**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 09:02 AM**	

Compound	**%Recovery**
Propylbenzene	108
4-Ethyltoluene	113
1,3,5-Trimethylbenzene	113
1,2,4-Trimethylbenzene	120
TPH ref. to Gasoline (MW=100)	100

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	112	70-130

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Client Sample ID: CCV

Lab ID#: 1203529-06B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032702sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 09:02 AM**	

Compound	**%Recovery**
Benzene	85
Toluene	93
Ethyl Benzene	100
m,p-Xylene	109
o-Xylene	113

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: LCS

Lab ID#: 1203529-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032703**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 09:48 AM**	

Compound	**%Recovery**
Propylbenzene	107
4-Ethyltoluene	105
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	114
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	**%Recovery**	**Method Limits**
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	110	70-130

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Client Sample ID: LCSD

Lab ID#: 1203529-07AA

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032704**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 10:26 AM**	

Compound	%Recovery
Propylbenzene	106
4-Ethyltoluene	105
1,3,5-Trimethylbenzene	110
1,2,4-Trimethylbenzene	115
TPH ref. to Gasoline (MW=100)	Not Spiked

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	110	70-130
Toluene-d8	102	70-130
4-Bromofluorobenzene	106	70-130

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Client Sample ID: LCS

Lab ID#: 1203529-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032703sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 09:48 AM**	

Compound	%Recovery
Benzene	85
Toluene	93
Ethyl Benzene	99
m,p-Xylene	110
o-Xylene	113

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	104	70-130
4-Bromofluorobenzene	108	70-130

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Client Sample ID: LCSD

Lab ID#: 1203529-07BB

MODIFIED EPA METHOD TO-15 GC/MS SIM/FULL SCAN

File Name:	**e032704sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 3/27/12 10:26 AM**	

Compound	%Recovery
Benzene	83
Toluene	91
Ethyl Benzene	96
m,p-Xylene	106
o-Xylene	108

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	103	70-130
4-Bromofluorobenzene	104	70-130

Air Toxics LTD.

CHAIN-OF-CUSTODY RECORD

Sample Transportation Notice
Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Air Toxics Limited assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922

180 BLUE RAVINE ROAD, SUITE B
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Project Manager PAT VAUGHAN

Collected by: (Print and Sign) ROBERT McALISTER

Company STANTEC CONSULTING Email PAT.VAUGHAN@STANTEC.COM

Address 9400 SW BARNES RD SUITE 200 City PORTLAND State OR Zip 97225

Phone 503 297-1631 Fax 503 297-5429

Project Info:

P.O. # 212302770

Project # 212302770

Project Name HUNGRY WHALE

Turn Around Time:

☒ Normal

☐ Rush

specify

Lab Use Only
Pressurized by:
Date:
Pressurization Gas: N_2 He

Lab I.D.	Field Sample I.D. (Location)	Can #	Date of Collection	Time of Collection	Analyses Requested	Canister Pressure/Vacuum Initial	Final	Receipt	Final (psi)
	OA-1	10791	3/21/12	0740-1630	TO-15 (SIM)*	-26.5	-5.0		
	OA-2	12045		0745-1553		-30.5	-5.0		
	IA-1	34393		0800-1630		-30.0	-5.0		
	IA-2	34378		0805-1610		-30.5	-5.0		
					*See attached Target Compound list				

Relinquished by: (signature) Date/Time — STANTEC

Received by: (signature) Date/Time

Relinquished by: (signature) Date/Time

Received by: (signature) Date/Time

Relinquished by: (signature) Date/Time

Received by: (signature) Date/Time

Notes: INITIAL AND FINAL PRESSURES IN inHg

*STANDARD TAT

Lab Use Only

Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact? Yes / No / None	Work Order #

Form 1293 rev.11

APPENDIX B

Air Sample Data Logs

SITE OBSERVATION REPORT

Stantec

Project:	HUNGRY WHALE AMB. AIR	File No.	
Contractor:	—	Project No.	
Owner:	—	Project No.	
Location:	WESTPORT, WA	Date:	3/21/12
		Page	1 of 2

The following items were noted: **Weather:** PARTLY CLOUDY

700 - ARRIVED ON-SITE

- DISCUSSED SCOPE OF WORK W/ STATION OWNER

730 - COMMENCED SETTING SAMPLERS

① UPWIND - OUTDOOR "OA-1"

CAN # 10791 / FLOW CON. # FC0211

- 26.5 inHg @ START

START TIME 0740

END TIME

- 5.0 inHg @ END

② DOWNWIND - OUTDOOR "OA-2"

CAN # 12045 / FLOW CON. # FC0419

- 30.5 inHg @ START

START TIME 0745

END TIME

- 5.0 inHg @ END

③ COUNTER - INDOOR "IA-1"

CAN # 34393 / FLOW CON. # FC0639

- 30.0 inHg @ START

START TIME 0800

END TIME

- 5.0 inHg @ END

④ BACK ROOM - INDOOR "IA-2"

CAN # 34378 / FLOW CON. # FC0399

- 30.5 inHg @ START

START TIME 0805

END TIME

- 5.0 inHg @ END

Prepared by: ROBERT MCALISTER
Print Name

Signature

SITE OBSERVATION REPORT

Stantec

Project: HUNGRY WHALE AMB. AIR
Contractor:
Owner:
Location:

File No.
Project No.
Project No.
Date: 3/21/12
Page 2 of 2

The following items were noted: **Weather:**

1245 - INSPECTED FLOORING FOR CRACK(S) / OTHER CONDUITS FOR VAPOR INTRUSION
- NO CONDUITS OBSERVED
- SPOKE W/ STATION OWNER RE: REPORTED PETRO. ODOR IN CABINET HISTORICALLY
- DURING BIOREMEDIATION IN ~2002, HOLLOW STEM ENVIRONMENTAL INJECTED HOT WATER INTO THE SUBSURFACE
- THIS CAUSED THE METAL H_2O SUPPLY LINE OUTSIDE TO CRACK, LEADING TO HC VAPOR INTRUSION INSIDE CABINET
- WATER LINE WAS REPLACED ~2004, NO ODORS IN STORE AFTERWARDS

1300 - COLLECTED PID READINGS INSIDE STORE (SEE SKETCH)

1: 0.0	ppm	5: 0.0	ppm
2: 0.0	↓	6: 0.0	↓
3: 0.0		7: 0.0	
4: 0.0		8: 0.0	

1330 - NO GAPS / CONDUITS IN BATHROOM (AROUND TOILET, SINK ...)
- ALL ELEC. / UTILITIES ENTER SIDE OF BUILDING OR THROUGH ROOF

1650 - OFF-SITE

Prepared by:

Print Name

Signature

HUNGRY WHALE AMBIENT AIR

3/21/12

ROBERT MCALISTER

OUTDOOR				INDOOR			
UPWIND		DOWNWIND		COUNTER		BACKROOM	
OA-1		OA-2		IA-1		IA-2	
TIME	PRESSURE	TIME	PRESSURE	TIME	PRESSURE	TIME	PRESSURE
(START) 0740	-26.5	(START) 0745	-30.5	(START) 0800	-30.0	(START) 0805	-30.5
0845	-26.0	0847	-26.5	0848	-27.5	0849	-27.5
0956	-23.0	0958	-21.5	1000	-23.0	1002	-22.5
1120	-17.5	1121	-16.5	1117	-18.0	1115	-18.0
1218	-14.0	1220	-13.5	1221	-14.5	1222	-14.5
1314	-11.5	1315	-12.0	1316	-12.0	1316	-12.0
1418	-9.0	1419	-8.0	1420	-9.5	1421	-9.5
1444	-8.0	1445	-7.0	1445	-8.5	1446	-9.0
1511	-7.0	1512	-6.5	1513	-8.0	1514	-8.0
1552	-6.0	1553	-5.0 (END)	1554	-6.5	1555	-6.5
1630	-5.0 (END)	—	—	1630	-5.0 (END)	1631	-6.0
						1640	-5.0 (END)

WEATHER

OUTSIDE ~40°F / INSIDE ~60°F

WIND ENE ~10 mph

59% HUMIDITY

NO RAIN ALL DAY

Stantec

Designed by:

Checked by:

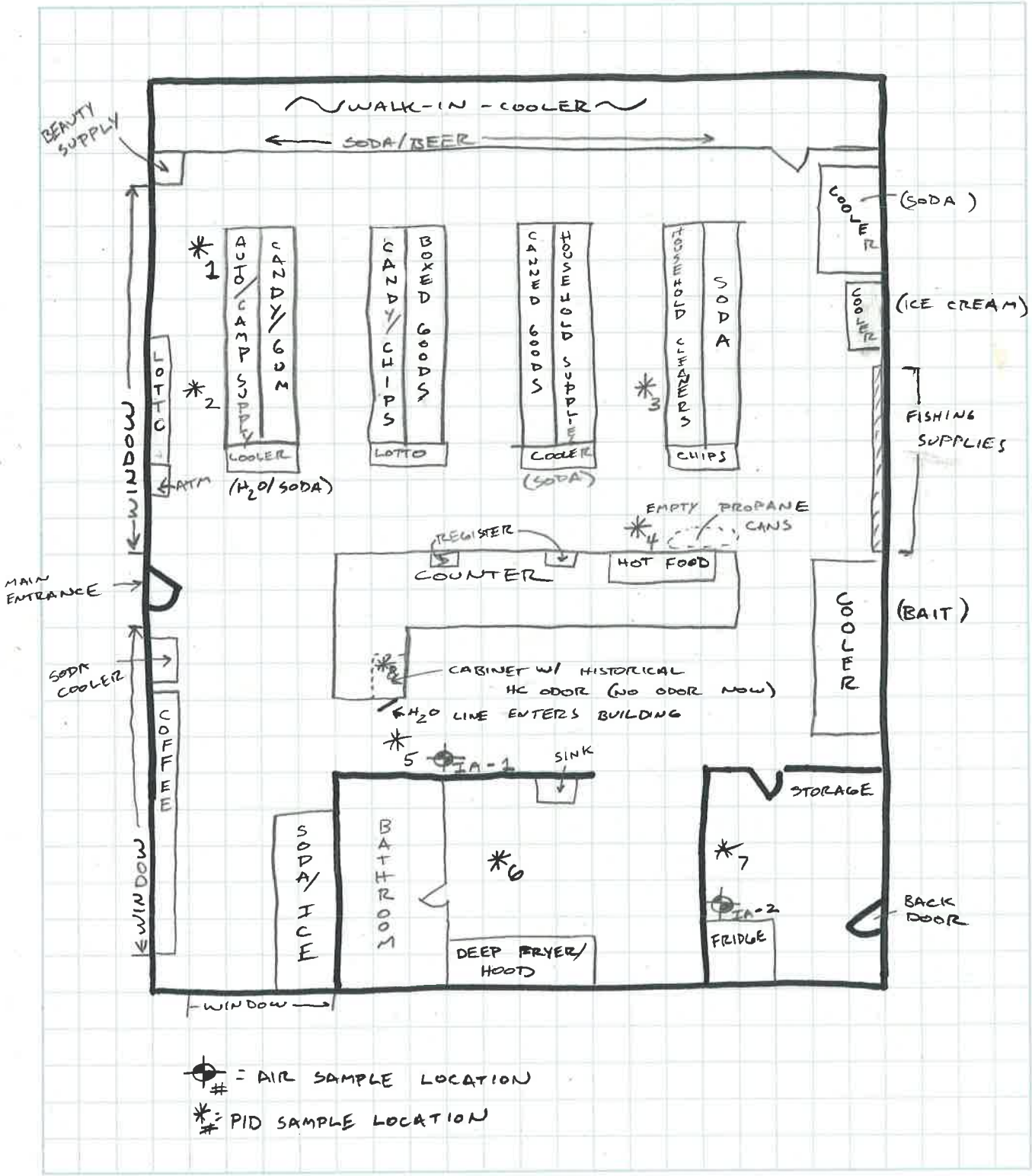
Stantec

HUNGRYWHALE AMB. AIR - STORE SKETCH

3/21/12

ROBERT McALISTER

NOT TO SCALE N



Designed by: Checked by:

APPENDIX C

Building Survey Form

INDOOR AIR QUALITY BUILDING SURVEY

This form must be completed for each building involved in an indoor air investigation.

Preparer's Name: ROBERT MCALISTER Date Prepared: 3/21/12

Preparer's Affiliation: Stantec Consulting Company

Telephone Number: _____

OCCUPANT INFORMATION	
Name	
Address	
City, State ZIP	
Home Telephone	
Office Telephone	

OWNER or LANDLORD INFORMATION	
Name (if different from Occupant)	
Address	
City, State ZIP	
Telephone	

A. Building Construction

☐Single Family ☐Multiple Dwelling ☒Commercial

1. Type (check appropriate responses):

☐Ranch ☐Two-Family

☐Raised Ranch ☐Duplex

☐Split Level ☐Office

☐Colonial ☐Warehouse

☐Mobile Home ☐Strip Mall

☒ RETAIL GASOLINE STATION WITH STORE

☐Apartment Building: # of Units: N/A

☐Other: N/A

2. Building Age: BUILT IN 1950's Number of Floors: ONE

3. Area of the Building (square feet): ~2,000

4. Is the building insulated? ☒YES ☐NO

5. How sealed is the building?_____

6. Roll-up Doors Present? NO Normally Open? N/A

7. Number of elevators in the building: NONE

8. Condition of the elevator pits (sealed, open earth, etc.) N/A

9. General description of building construction materials: CONCRETE SLAB FOUNDATION w/ CINDERBLOCK WALLS

B. Foundation Characteristics (check all that apply)

1. ☐Full basement ☐Crawlspace ☐Slab on Grade- Post Tension
Slab? CONCRETE
☐Other: NO CRAWLSPACE

2. N/A Basement Floor Description: ☐Concrete ☐Dirt ☐Wood
☐Other:_____

a) N/A Basement is: ☐Wet ☐Dry ☐Damp

b) N/A Sump present? ☐YES ☐NO Water in sump? ☐YES ☐NO

c) N/A Basement is: ☐Finished ☐Unfinished ☐Other:_____

d) N/A Is basement sealed? ☐YES ☐NO
Provide a description:_____

3. Concrete floor description: ☐Unsealed ☐Painted ☒Covered
with: LINOLEUM TILE

4. Foundation walls: ☒Poured Concrete ☒Block ☐Stone ☐Wood
☐Other:_____

C. Identify all potential soil gas entry points and their size (e.g., cracks, voids, pipes, utility ports, sumps, drain holes, etc.). Include these points on the building diagram.

D. Heating, Ventilation, and Air Conditioning (check all that apply)

1. Type of heating system(s): NONE
☐Hot Air Circulation ☐Steam Radiation
☐Hot Water Radiation ☐Electric Baseboard
PORTABLE SPACE HEATER USED IN WINTER

☐Heat Pump ☐Wood Stove

☐Un-Vented Kerosene Heater ☐Other (specify):_____

2. Type of fuel used: N/A

☐Natural Gas ☐Electric ☐Coal

☐Fuel Oil ☐Wood ☐Solar

☐Other:_____

3. Location of heating system: N/A

4. Is there air conditioning? ☐YES ☒NO

If YES: ☐Central Air ☐Window Units
Specify location: N/A

5. Are there air distribution ducts present? ☐YES ☒NO

6. Describe the supply and cold air return duct work including whether there is a cold air return and comment on the tightness of duct joints: N/A

7. Is there a whole house fan? ☐YES ☒NO
What is the size of the fan? N/A

8. Temperature settings inside during sampling (note day and night temperatures).
   a. Daytime Temperature(s) N/A
   b. Nighttime Temperature(s) N/A
   (Note times if system cycles during non-occupied hours during the day.)

9. Estimate the average time doors and windows are open to allow fresh outside air into the building. Note rooms that frequently have open windows or doors: DURING SUMMERTIME FRONT DOOR LEFT OPEN

D. Potential Indoor Sources of Pollution

1. Is the laundry room located inside the building? ☐YES ☐NO N/A
2. Has the building ever had a fire? ☐YES ☒NO
3. Is there an attached garage? ☐YES ☒NO
4. Is a vehicle normally parked in the garage? ☐YES ☐NO N/A
5. Is there a kerosene heater present? ☐YES ☒NO

6. Is there a workshop, hobby or craft area in the building? ☐YES ☒NO

7. An inventory of all products used or stored in the building should be performed. Any products that contain volatile organic compounds or chemicals similar to the target compounds should be listed. The attached **Products Inventory Form** (see page 7) should be used for this purpose.

8. Is there a kitchen exhaust fan? ☒YES ☐NO
Where is it vented? TO OUTSIDE, ON SOUTHEAST SIDE OF BUILDING

9. Is the stove: ☐Gas ☐Electric N/A Is the oven: ☐Gas ☐Electric N/A

10. Is there an automatic dishwasher? ☐YES ☒NO

11. Is smoking allowed in the building? ☐YES ☒NO

12. Has the building ever been fumigated or sprayed for pests? ☐YES ☒NO
If YES, give date, type and location of treatment: N/A

E. Water and Sewage

1. Source of Water (check appropriate response)

☒Public Water ☐Dug Well

☐Drilled Well ☐Other (specify):_____

☐Driven Well

2. Water Well Specifications N/A (MONITORING WELLS ON-SITE)

Well Diameter_____ Grounted or Ungrouted_____
Well Depth_____ Type of Storage Tank_____
Depth to Bedrock_____ Size of Storage Tank_____
Feet of Casing_____

Describe type(s) of Treatment: N/A

3. Water Quality

Taste and/or odor problems with water? ☐YES ☒NO
If YES, describe:_____

Is the water chlorinated, brominated, or ozonated? ☐YES ☒NO
How long has the taste and/or odor problem been present?_____

4. Sewage Disposal

☒Public Sewer ☐Leach Field

☐Septic Tank ☐Other (specify):_____

Distance from well to septic system:_____
Type of septic tank additives:_____

F. Plan View

Sketch each floor and if applicable, indicate air sampling locations, possible indoor air pollution sources, preferential pathways and field instrument readings.

G. Potential Outdoor Sources of Pollution

Draw a diagram of the area surrounding the building being sampled. If applicable, provide information on the spill locations (if known), potential air contamination sources (industries, service stations, repair shops, retail shops, landfills, etc.), outdoor air sampling locations, and field instrument readings.

Also, on the diagram, indicate barometric pressure, weather conditions, ambient and indoor temperatures, compass direction, wind direction and speed during sampling, the locations of the water wells, septic systems, and utility corridors if applicable, and a statement to help locate the site on a topographical map.

H. Date of last painting of surfaces at the facility: MID 1980'S

Location where painting occurred: INTERIOR / EXTERIOR

I. Date of last carpet replacement: N/A

Location(s): _____

I. Describe Process/Manufacturing/Storage Areas:

J. Existing Soil Vapor Control Devices (pipes, vents, blowers, HVAC Add-ons)

Describe Observations, Locations N/A

K. Wall Surfaces (painted, textured) PAINT DIRECTLY ON CINDERBLOCK

L. Noted Interior Sinks for VOCs NONE

Stantec

PRODUCTS INVENTORY FORM

Occupant of Building: _____

Address: _____

Field Investigator: ROBERT McALISTER Date: 3/21/12

ALL IN AISLE CLOSEST TO FRONT DOOR →

Product Description (Commercial name, dispenser type, container size, manufacturer)	VOCs Contained in Product	Field Instrument Reading
COLEMAN CAMP FUEL 1-GALLON CANS (4 CANS)	NONE LISTED ON CAN "PROPRIETARY FORMULATION"	0.0 PPM
COLEMAN PROPANE CANS 1-LB CANS (20 CANS)	PROPANE	
WD-40 SPRAY CANS 8-OZ AND 3-OZ CANS	NONE LISTED	
"ENGINE BRIGHT" ENGINE DEGREASER 15-OZ CANS (2 CANS)	PETRO. DISTILLATES, 2-BUTOXY ETHANOL	
POLAR STARTING FLUID 11-OZ CANS (6 CANS)	HEPTANE, DIETHYLETHER	
GUMOUT CARB/CHOKE CLEANER 19-OZ CANS (3 CANS)	PETRO SOLVENTS, ACETONE, XYLENE ORGANIC KETONE	
TURBO 108 OCTANE BOOST 16-OZ CANS (3 CANS)	PETRO DISTILLATES, METHYLCYCLOPENTADIENYL MANGANESE TRICARBONYL	
POLAR DE-ICER 11.5 OZ CANS (8 CANS)	METHANOL	
3-IN-ONE MULTI-PURPOSE OIL 3 OZ CANS (4 CANS)	PETRO. DISTILLATES	
20/10 WINSHIELD DEICER 1 GAL JUGS (6 JUGS)	METHANOL	
SPLASH WINSHIELD CLEANER 1 GAL JUGS (6 JUGS)	METHANOL	
POLAR ANTIFREEZE 1 GAL JUG (1 JUG)	ETHYLENE GLYCOL	
VARIOUS 1-QT BOTTLES OF MOTOR OIL	PETRO. OIL	
SUAVE HAIR SPRAY	ISOBUTANE, DIMETHYL ETHER, PROPANE, BUTYLENE GLYCOL	

Comments: _____

_____

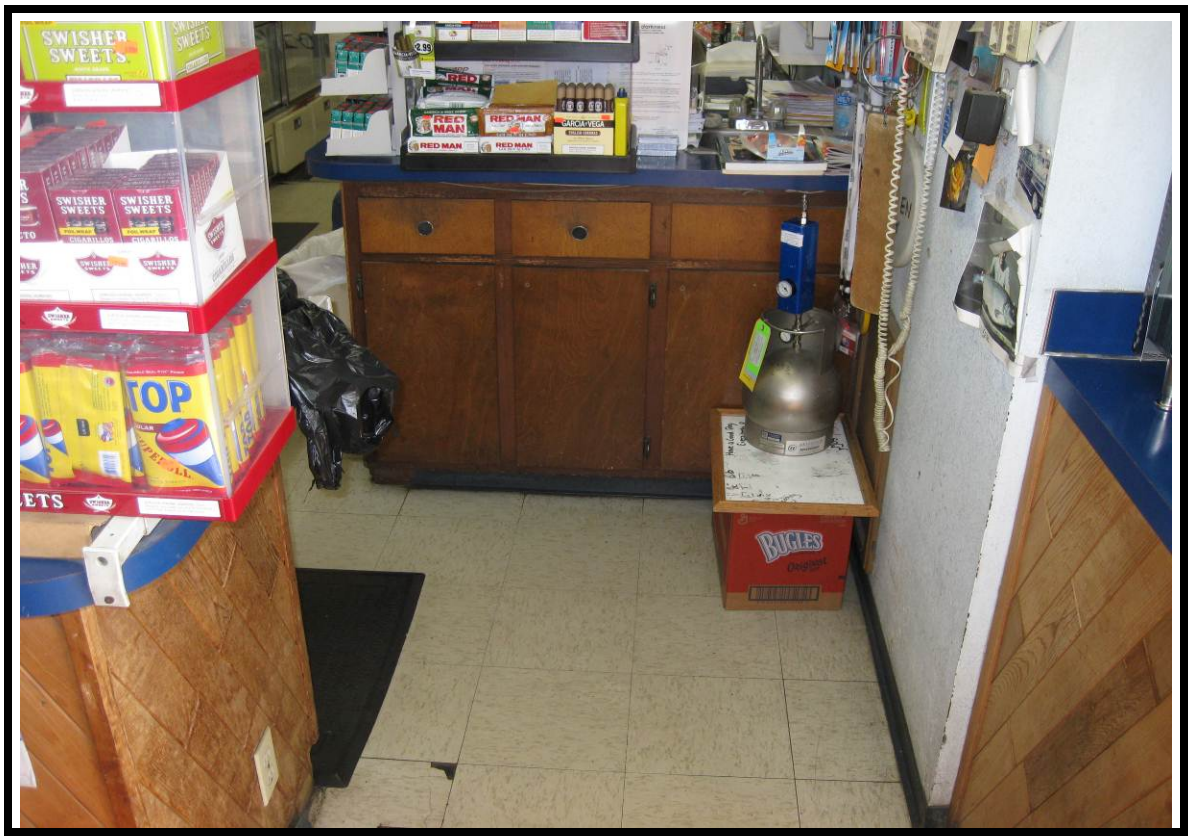
MORE ON BACK →

PRODUCT	VOCs LISTED	PID
- RAID PESTICIDE 15-OZ CANS (10 CANS)	NONE	0.0 ppm
- OFF! BUG REPELLANT 6 OZ CANS (8 CANS)	ETHYL ALCOHOL	
- EASY OFF OVEN CLEANER 16 OZ CAN (1 CAN)	MONOETHANOLAMINE, DIETHYLENE GLYCOL, N-BUTYL ETHER	
- WIZARD CHARCOAL STARTER 16 OZ CANS (3 CANS)	PETRO. DISTILLATES	
- EMPTY PROPANE TANKS (3 INSIDE)	PROPANE	

APPENDIX D

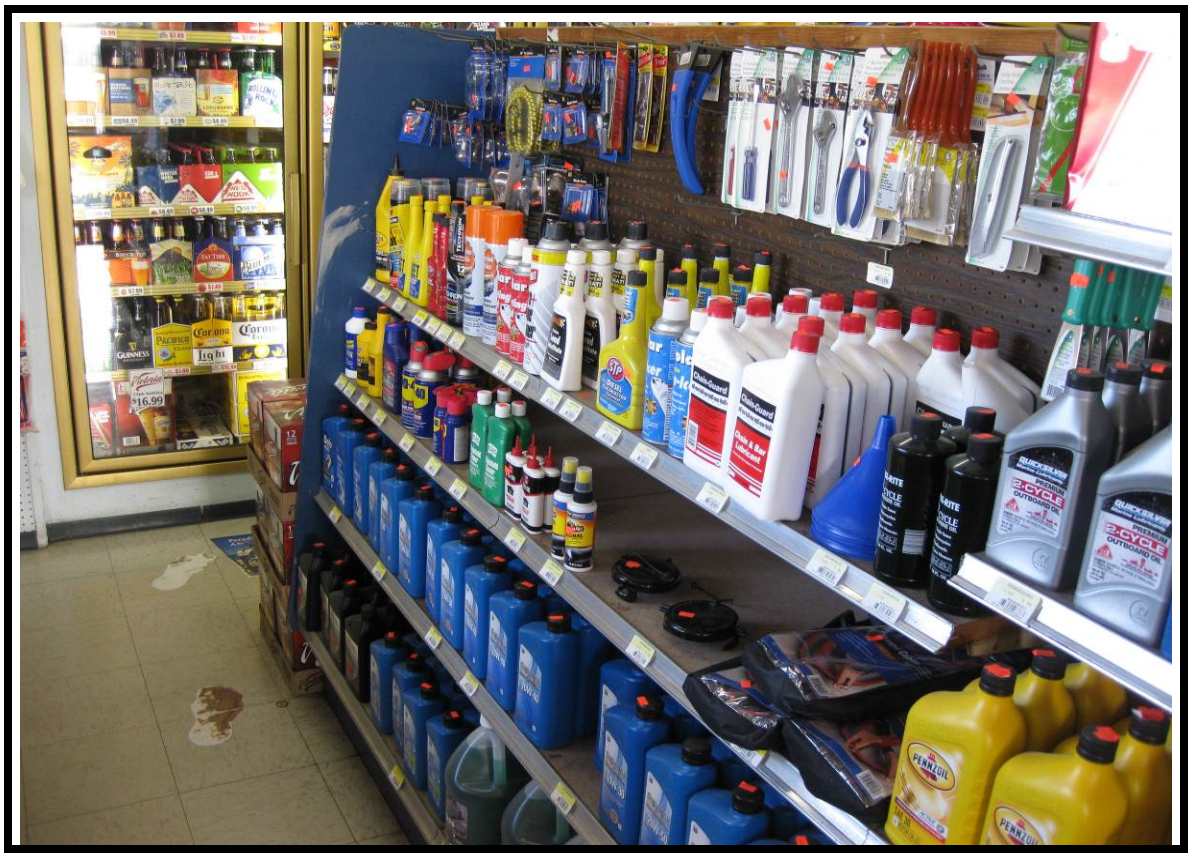
Photo-Documentation

Port of Grays Harbor – 212302770
Hungry Whale
Westport, WA

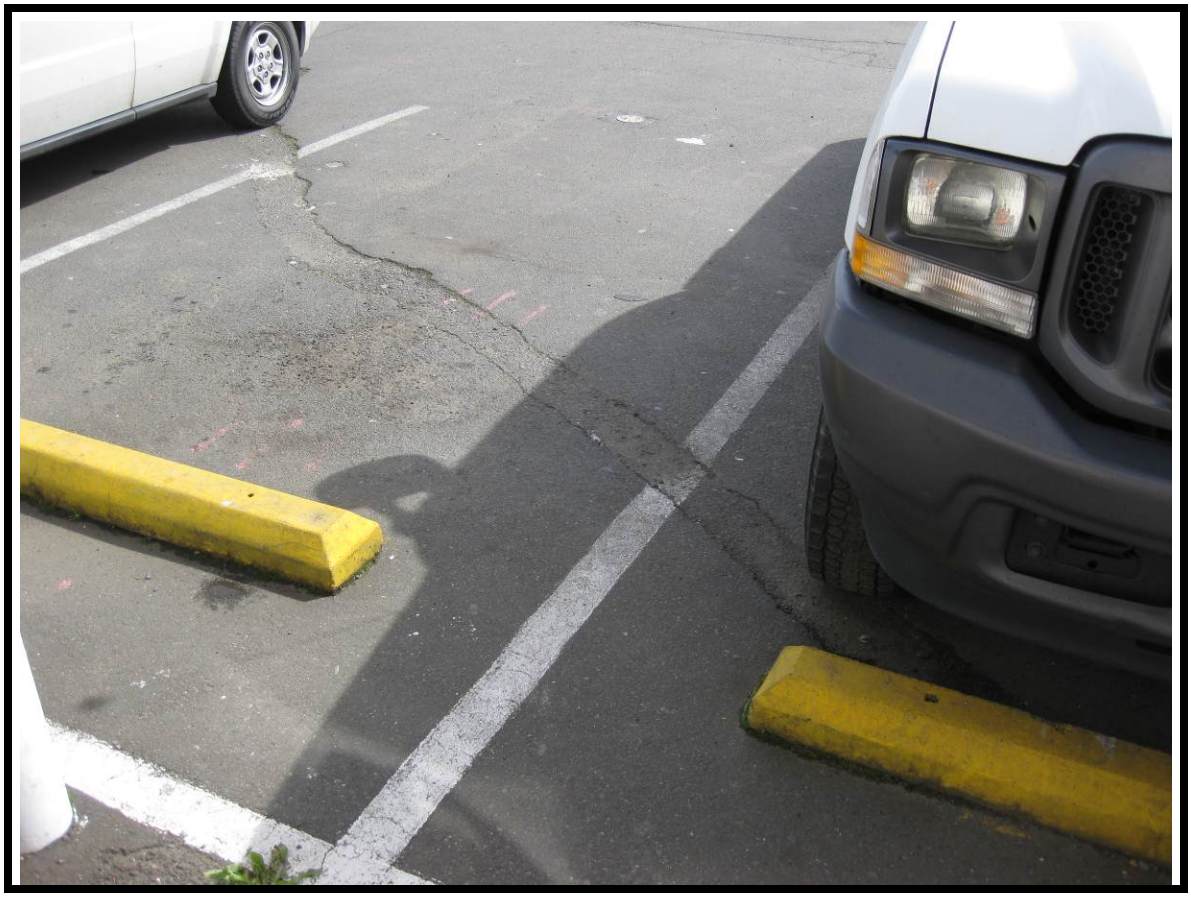

SWISHER SWEETS
SWISHER SWEETS
SWISHER SWEETS
RED MAN
RED MAN
RED MAN
RED MAN
BUGLES


SALMON
SAND
PERCH

Port of Grays Harbor – 212302770
Hungry Whale
Westport, WA



Port of Grays Harbor – 212302770
Hungry Whale
Westport, WA



Port of Grays Harbor – 212302770
Hungry Whale
Westport, WA

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Hungry Whale
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