September 13, 2017

Mr. Thomas Beeks
GLAM Commercial Properties I, LLC
6947 Coal Creek Pkwy SE, Suite 212
Newcastle, WA 98059

Re: 2017 Annual Environmental Compliance Report
Smokey Point Retail Center
Project No. 150294

Dear Mr. Beeks:

This letter report was prepared on behalf of GLAM Commercial Properties I, LLC (GLAM), and presents the results of annual compliance monitoring completed by Aspect Consulting, LLC (Aspect) at the Smokey Point Retail Center (the Property) in Marysville, Washington. We conducted one annual monitoring event during GLAM's second year of ownership. The purpose of the compliance monitoring was to verify that concentrations of constituents of concern (COCs) in groundwater are stable or decreasing on the Property, which is required by the Property's Environmental Covenant (Ecology, 2015). Annual compliance monitoring was conducted according to Sound Earth Strategies, Inc.'s (Sound Earth) *Compliance Monitoring Plan* (CMP; Sound Earth, 2015a), which is included in the Environmental Covenant.

Pursuant to our scope of work for Year 2, we completed the following work elements:

- Observed protective cap conditions;
- Collected annual groundwater samples in July 2017;
- Performed plume stability analyses for benzene and gasoline;
- Evaluated indoor air compliance based on groundwater data; and
- Prepared this report for submittal to Washington State Department of Ecology's (Ecology) Voluntary Cleanup Program (VCP).

This report provides a brief description of the Property and its history, describes sampling events, and discusses our monitoring results and conclusions.

Property Description and History

The Property is located at 2707 171st Place NE in the City of Marysville, Washington, as shown on Figure 1. The Property is in a general commercial area and is developed with two retail buildings and a parking lot.

Based on previous explorations completed by GeoScience Management, Inc., soil on the Property generally consists of gravelly, silty sand to at least 15 feet deep (Sound Earth, 2015b).

The north-adjacent property was developed as a retail gas station in the late 1970s, and contains petroleum-impacted soil and groundwater due to a past release from underground storage tanks (USTs). The Property contains petroleum-impacted groundwater due to groundwater flow from this north-adjacent source property.

The Property was enrolled in the VCP and underwent an investigation and cleanup by Sound Earth. The cleanup action included injection of oxidizer into groundwater and installation of engineering controls, including a vapor barrier beneath both buildings on the Property to mitigate potential soil vapor concerns, and a 4-inch-thick asphalt cap covering most of the Property to mitigate the potential for direct contact with contaminated material (Sound Earth, 2015b).

Sound Earth presented this information to Ecology in a Cleanup Action Report, and the Property was issued a Property-specific No Further Action (NFA) with Environmental Covenant from Ecology.

Protective Cap Condition

The condition of the asphalt cap and concrete slabs was monitored in July 2017, and consisted of walking the Property to look for evidence of cracking, erosion, animal burrows, ponded water, sloughing, seepage, or other potentially damaging conditions. During the July 2017 monitoring, the condition of the cap appeared intact on all areas within the Property boundary. Based on this assessment, the protective cap is still mitigating direct contact with impacted groundwater below the surface.

Groundwater Monitoring

Per the CMP (Sound Earth, 2015a), annual groundwater monitoring is scheduled to take place during the annual period of highest groundwater (typically April). In 2017, groundwater monitoring was completed in July because it represented the highest concentrations of TPH in groundwater at our sentinel well (MW-119) during the prior year (2016). We will resume spring/high water table events in 2018.

Groundwater samples were collected from three existing monitoring wells located within the plume area (MW-112, MW-113, and MW-114) and two existing monitoring wells near the downgradient (south) property line (MW-116 and MW-119) (Figure 2). Groundwater sample collection and analysis methods, and analytical results are presented below.

Groundwater Sample Collection and Analysis Methods

Groundwater samples were collected by low-flow sampling techniques using a peristaltic pump and disposable polyethylene tubing. We measured the static water level in each well prior to well purging and sample collection (Table 1). The field parameters temperature, pH, electrical conductance (specific conductance), dissolved oxygen, and redox potential were monitored during purging. Purging continued until the field parameters stabilized, defined as three successive readings where the parameters varied by less than 10 percent, or by less than 0.5 milligrams per liter (mg/L) dissolved oxygen if the readings were below 5 mg/L.

Once purging was complete, groundwater samples were collected by directly filling laboratory-supplied containers from the pump discharge tubing. Groundwater samples were placed in an iced cooler and delivered to Friedman & Bruya, Inc., in Seattle, Washington, under proper chain-of-custody procedures. Samples from all wells were analyzed for the following:

- Gasoline-range total petroleum hydrocarbons (TPH-G) by Method NWTPH-Gx; and
- Benzene, toluene, ethyl-benzene, and xylene (BTEX) compounds by U.S. Environmental Protection Agency (EPA) Method 8260.

The results are presented in Table 2, and laboratory certificates of analysis are included in Attachment A.

Groundwater Elevations and Flow Direction

During Year 2, groundwater elevations ranged from 93.45 to 94.24 relative to the Property-specific datum. Groundwater flow direction during Year 2 ranged from south-southwest to south, which is consistent with historical measurements.

Groundwater Analytical Results

Year 2 groundwater quality results show continued evidence of natural attenuation and a trend toward Property-wide Model Toxics Control Act (MTCA) Method A Cleanup Level compliance. Groundwater quality results are shown in Table 2, and summarized below.

Constituents and areas in compliance with MCTA Method A Cleanup Levels:

- TPH-G was detected at concentrations below the 800 micrograms per liter (µg/L) MTCA Method A Cleanup Level for the plume wells (MW-112, MW-113, and MW-114).
- Benzene was either not detected or was detected at concentrations below the 5 µg/L MTCA Method A cleanup level for MW-112.
- Toluene, ethylbenzene, and xylenes were either not detected, or were detected at concentrations below MTCA Method A cleanup levels in plume wells during Year 2 monitoring.
- TPH-G and BTEX at downgradient sentinel wells MW-116 and MW-119 were either not detected, or were detected at concentrations below MTCA Method A cleanup levels during Year 2 monitoring.

Results trending towards compliance with MCTA Method A Cleanup Levels:

- The October 2016 result for TPH-G in MW-114 appears to be an anomaly, as this was the only historical result above the MTCA Method A cleanup level for this well. Subsequent sampling results, including the Year 2 result, were below the MTCA Method A cleanup level.
- Benzene was detected above the 5 µg/L MTCA Method A cleanup level for MW-113 and MW-114, which is consistent with historical results.

Plume Stability Analyses

Per CMP (Sound Earth, 2015a), plume stability analyses were performed to evaluate TPH-G and benzene trends in the groundwater plume. A linear regression analysis was used to determine if each plume was expanding, shrinking, or stable. If the linear regression indicated the plume was stable, the stability of the plume was confirmed using a nonparametric statistical analysis (Mann-Kendall Trend Test [MKTT]). These analyses were performed using Ecology's *Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Groundwater* (Ecology, 2007). Module 2 of this tool package is the linear regression, and module 1 of this tool package is the MKTT. Data inputs and analysis outputs for the TPH-G and benzene plumes are included in Attachments B and C, respectively. The results of these analyses are discussed below.

TPH-G Plume

The TPH-G plume analysis was conducted using groundwater results for samples collected between May 2014 and July 2017. The October 2016 result for MW-114 (discussed in the previous section) was considered an outlier and was not included in the analysis[1]. Linear regression analysis of the plume at wells MW-113 and MW-114 indicated the plume is stable. The nonparametric MKTT analysis confirmed the plume is stable at MW-113 and MW-114. Linear regression analysis of the plume at well MW-112 indicated the plume is shrinking; therefore, the nonparametric MKTT analysis was not necessary.

Benzene Plume

The Benzene plume analysis was conducted using groundwater results for samples collected between May 2014 and July 2017. Linear regression analysis of the plume at well MW-114 indicated the plume is stable. The nonparametric MKTT analysis confirmed the plume is stable at MW-114. Linear regression analysis of the plume at well MW-112 indicated the plume is shrinking; therefore, the nonparametric MKTT analysis was not necessary. Linear regression analysis of the plume at well MW-113 came back as undetermined. The nonparametric MKTT analysis of the plume also came back as undetermined. Per the CMP (South Earth, 2015a), a Mann-Whitney test can also be used to determine the stability of the plume. The Mann-Whitney Test of the plume at well MW-113 indicated the plume is shrinking.

Indoor Air Compliance Evaluation

Per the CMP (Sound Earth, 2015a), indoor air compliance is based on the concentrations of TPH-G and benzene at wells MW-113 and MW-114. Section 5.2 of the CMP states, "If the concentrations […] are greater than two times the historical maximum concentrations for two consecutive sampling events, this will trigger an indoor air sampling event at Building 1." Year 1 results for MW-113 and MW-114 did not have results meeting this criterion; therefore, an indoor air sampling event was not necessary, and the Property is considered to be in compliance.

[1] When the test was performed including the outlier, the result came back "undetermined."

Conclusions and Recommendations

Annual monitoring results collected during 2017 (Year 2) indicate that the residual TPH-G and BTEX concentrations in groundwater on the Property are consistent with historical results, and the groundwater plumes are either stable or shrinking.

Aspect recommends continuing monitoring in accordance with the CMP in the Environmental Covenant. Year 3 (2018) monitoring will consist of:

- Observing protective cap conditions;
- Collecting one round of groundwater samples in April 2018;
- Performing plume stability analyses for benzene and gasoline;
- Evaluating indoor air compliance based on groundwater data; and
- Preparing a Year 3 Annual Compliance Report for submittal to Ecology's Voluntary Cleanup Program (VCP).

References

Sound Earth Strategies, Inc. (Sound Earth), 2015a, Compliance Monitoring Plan, Smokey Point Retail Center, November 11, 2015.

Sound Earth Strategies, Inc. (Sound Earth), 2015b, Cleanup Action Report, Smokey Point Retail Center, June 12, 2015.

Washington State Department of Ecology (Ecology), 2007, Natural Attenuation Analysis Tool Package for Petroleum-Contaminated Groundwater, July 2005, updated for Excel version 2007.

Washington State Department of Ecology (Ecology), 2015, Environmental Covenant, 2707 171st Place NE, Marysville, WA, December 4, 2015.

Limitations

Work for this project was performed and this letter prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. It is intended for the exclusive use of GLAM Commercial Properties I, LLC for specific application to the referenced property. This letter does not represent a legal opinion. No other warranty, expressed or implied, is made.

Sincerely,

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Attachments

Table 1 Groundwater Elevation Data
Table 2 Groundwater Quality Data
Figure 1 Vicinity Map
Figure 2 Site Plan
Attachment A Laboratory Certificates of Analysis
Attachment B Gasoline Plume Stability Analysis
Attachment C Benzene Plume Stability Analysis

TABLES

Table 1 - Groundwater Elevation Data

Project No.150294, Smokey Point Retail Center
Marysville, Washington

Well ID	TOC Elevation (feet)	Sample Date	Sampled By	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-111	100.78	9/27/2006	GeoScience	7.69	93.09
		12/6/2008	GeoScience	5.46	95.32
		9/27/2009	GeoScience	7.29	93.49
		4/11/2011	GeoScience	3.50	97.28
		9/14/2012	SoundEarth	4.83	95.95
		4/5/2013	SoundEarth	5.15	95.63
		1/16/2014	SoundEarth	4.19	96.59
		5/20/2015	SoundEarth	6.05	94.73
		4/13/2016	Aspect	--	--
		7/22/2016	Aspect	6.25	94.53
		10/18/2019	Aspect	6.28	94.50
		1/16/2017	Aspect	4.27	96.51
		7/31/2017	Aspect	6.54	94.24
MW-112	99.50	12/6/2008	GeoScience	4.21	95.29
		9/27/2009	GeoScience	6.11	93.39
		4/11/2011	GeoScience	2.51	96.99
		9/14/2012	SoundEarth	5.39	94.11
		4/5/2013	SoundEarth	4.02	95.48
		1/16/2014	SoundEarth	3.00	96.50
		5/30/2014	SoundEarth	4.04	95.46
		7/1/2014	SoundEarth	5.00	94.50
		8/7/2014	SoundEarth	5.30	94.20
		5/20/2015	SoundEarth	4.86	94.64
		4/13/2016	Aspect	3.54	95.96
		7/22/2016	Aspect	5.06	94.44
		10/18/2016	Aspect	5.03	94.47
		1/16/2017	Aspect	4.00	95.50
		7/31/2017	Aspect	5.37	94.13
MW-113	100.03	12/6/2008	GeoScience	4.86	95.17
		9/27/2009	GeoScience	6.73	93.30
		4/11/2011	GeoScience	3.18	96.85
		9/14/2012	SoundEarth	5.99	94.04
		4/5/2013	SoundEarth	4.71	95.32
		1/16/2014	SoundEarth	3.58	96.45
		5/30/2014	SoundEarth	4.59	95.44
		8/7/2014	SoundEarth	5.97	94.06
		5/20/2015	SoundEarth	5.46	94.57
		4/13/2016	Aspect	4.12	95.91
		7/22/2016	Aspect	5.68	94.35
		10/18/2016	Aspect	5.65	94.38
		1/16/2017	Aspect	4.61	95.42
		7/31/2017	Aspect	6.03	94.00
MW-114	99.62	12/6/2008	GeoScience	4.71	94.91
		9/27/2009	GeoScience	6.55	93.07
		4/11/2011	GeoScience	3.07	96.55
		9/14/2012	SoundEarth	5.92	93.70
		4/5/2013	SoundEarth	4.65	94.97
		1/16/2014	SoundEarth	3.49	96.13
		5/30/2014	SoundEarth	4.47	95.15
		8/7/2014	SoundEarth	5.83	93.79
		5/20/2015	SoundEarth	5.33	94.29
		4/13/2016	Aspect	4.05	95.57
		7/22/2016	Aspect	5.59	94.03
		10/18/2016	Aspect	5.49	94.13
		1/16/2017	Aspect	4.53	95.09
		7/31/2017	Aspect	5.93	93.69
MW-115	99.9	12/6/2008	GeoScience	4.93	94.97
		9/27/2009	GeoScience	6.49	93.41
		4/11/2011	GeoScience	3.15	96.75
		9/14/2012	SoundEarth	6.08	93.82
		4/5/2013	SoundEarth	4.85	95.05
		1/16/2014	SoundEarth	3.67	96.23
		5/30/2014	SoundEarth	4.65	95.25
		8/7/2014	SoundEarth	6.03	93.87
		5/20/2015	SoundEarth	5.52	94.38
		4/13/2016	Aspect	--	--
		7/22/2016	Aspect	5.79	94.11
		10/18/2016	Aspect	5.70	94.20
		1/16/2017	Aspect	4.74	95.16
		7/31/2017	Aspect	6.11	93.79

Table 1 - Groundwater Elevation Data

Project No.150294, Smokey Point Retail Center
Marysville, Washington

Well ID	TOC Elevation (feet)	Sample Date	Sampled By	Depth to Water (feet BTOC)	Groundwater Elevation (feet)
MW-116	100.17	12/6/2008	GeoScience	5.30	94.87
		9/27/2009	GeoScience	7.17	93.00
		4/11/2011	GeoScience	3.75	96.42
		9/14/2012	SoundEarth	6.53	93.64
		4/5/2013	SoundEarth	5.28	94.89
		1/16/2014	SoundEarth	4.06	96.11
		5/30/2014	SoundEarth	5.02	95.15
		8/7/2014	SoundEarth	6.42	93.75
		5/20/2015	SoundEarth	5.90	94.27
		4/13/2016	Aspect	4.63	95.54
		7/22/2016	Aspect	6.19	93.98
		10/18/2019	Aspect	6.03	94.14
		1/16/2017	Aspect	5.15	95.02
		7/31/2017	Aspect	6.54	93.63
MW-117	100.65	12/6/2008	GeoScience	5.59	95.06
		9/27/2009	GeoScience	7.45	93.20
		4/11/2011	GeoScience	3.78	96.87
		9/14/2012	SoundEarth	6.78	93.87
		4/5/2013	SoundEarth	5.50	95.15
		1/16/2014	SoundEarth	4.30	96.35
		5/30/2014	SoundEarth	5.27	95.38
		8/7/2014	SoundEarth	6.69	93.96
		5/20/2015	SoundEarth	6.16	94.49
		4/13/2016	Aspect	--	--
		7/22/2016	Aspect	6.44	94.21
		10/18/2016	Aspect	6.36	94.29
		1/16/2017	Aspect	5.39	95.26
		7/31/2017	Aspect	6.78	93.87
MW-118	100.2	12/6/2008	GeoScience	4.91	95.29
		9/27/2009	GeoScience	6.78	93.42
		4/11/2011	GeoScience	3.19	97.01
		9/14/2012	SoundEarth	6.00	94.20
		4/5/2013	SoundEarth	4.74	95.46
		1/16/2014	SoundEarth	3.61	96.59
		5/30/2014	SoundEarth	4.62	95.58
		8/7/2014	SoundEarth	6.00	94.20
		5/20/2015	SoundEarth	5.50	94.70
		4/13/2016	Aspect	--	--
		7/22/2016	Aspect	5.73	94.47
		10/18/2016	Aspect	5.72	94.48
		1/16/2017	Aspect	4.65	95.55
		7/31/2017	Aspect	6.63	93.57
MW-119	98.76	5/20/2015	SoundEarth	4.67	94.09
		4/13/2016	Aspect	3.46	95.30
		7/22/2016	Aspect	4.96	93.80
		10/18/2016	Aspect	4.82	93.94
		1/16/2017	Aspect	3.93	94.83
		7/31/2017	Aspect	5.31	93.45

Notes

Elevations are relative to an arbitrarily chosen site datum.

Definitions:

BTOC = Below top of casing

-- = Not measured

TOC = Top of casing

Table 2 - Groundwater Quality Data

Project No.150294, Smokey Point Retail Center
Marysville, Washington

Well ID	Sample Date	Sampled by	TPH as Gasoline (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)
MTCA Method A Groundwater Cleanup Level (µg/L)			800 (1)	5	1,000	700	1,000
MW-111	9/27/2006	GeoScience	ND	ND	ND	ND	ND
	12/6/2008	GeoScience	ND	ND	ND	ND	ND
	9/27/2009	GeoScience	ND	1	1	ND	ND
	4/11/2011	GeoScience	**4,500**	**6.9**	45	220	130
	9/14/2012	SoundEarth	ND	ND	ND	ND	ND
	4/5/2013	SoundEarth	ND	ND	ND	ND	ND
MW-112	12/6/2008	GeoScience	ND	1.5	1.2	ND	ND
	9/27/2009	GeoScience	ND	ND	ND	ND	ND
	4/11/2011	GeoScience	700	**140**	54	35	67
	9/14/2012	SoundEarth	180	**21**	1.6	3.4	5.6
	4/5/2013	SoundEarth	63	**25.6**	ND	ND	3
	1/16/2014	SoundEarth	ND	ND	ND	ND	ND
	5/30/2014	SoundEarth	**4,100**	**570**	280	270	260
	7/1/2014	SoundEarth	**1,300**	**56**	22	30	120
	8/7/2014	SoundEarth	**5,800**	**140**	97	190	1,000
	5/20/2015	SoundEarth	**990**	**24**	10	92	110
	4/13/2016	Aspect	630	2.2	ND	7.1	2.7
	7/22/2016	Aspect	ND	0.79	ND	ND	ND
	10/18/2016	Aspect	ND	ND	ND	ND	ND
	1/16/2017	Aspect	240	**17**	ND	ND	ND
	7/31/2017	Aspect	120	1.0	ND	ND	ND
MW-113	12/6/2008	GeoScience	250	**50**	1.8	6.9	ND
	9/27/2009	GeoScience	130	**29**	4.7	5.6	7.2
	4/11/2011	GeoScience	**4,000**	**70**	110	110	260
	9/14/2012	SoundEarth	180	**17**	20	3.7	17
	4/5/2013	SoundEarth	**4,510**	**118**	209	147	792
	1/16/2014	SoundEarth	140	1.9	2.3	4.8	14
	5/30/2014	SoundEarth	ND	1.8	6.5	2.2	5.1
	8/7/2014	SoundEarth	380	**16**	13	18	48
	5/20/2015	SoundEarth	210	**11**	16	7	32
	4/13/2016	Aspect	340	**3**	1.2	ND	22.3
	7/22/2016	Aspect	ND	ND	ND	ND	ND
	10/18/2016	Aspect	160	1.6	ND	2.6	ND
	1/16/2017	Aspect	ND	0.44	ND	ND	ND
	7/31/2017	Aspect	130	**13**	ND	1.4	11.3
MW-114	12/6/2008	GeoScience	250	**28**	ND	ND	ND
	9/27/2009	GeoScience	160	**15**	1.9	1.3	ND
	4/11/2011	GeoScience	ND	**9.2**	ND	4.5	8.3
	9/14/2012	SoundEarth	120	**21**	1.1	4.1	ND
	4/5/2013	SoundEarth	288	**59**	ND	13	2.5
	1/16/2014	SoundEarth	100	1.8	2.4	6.6	6.9
	5/30/2014	SoundEarth	190	**25**	2.2	7	ND
	8/7/2014	SoundEarth	300	**43**	2.6	23	ND
	5/20/2015	SoundEarth	ND	**5.4**	2	ND	ND
	4/13/2016	Aspect	ND	**12**	ND	ND	ND
	7/22/2016	Aspect	170	**10**	ND	ND	ND
	10/18/2016	Aspect	**1,400**	**37**	9.5	71	41.5
	1/16/2017	Aspect	140	**11**	ND	4.5	ND
	7/31/2017	Aspect	310	**8.3**	ND	6.9	ND
MW-115	12/6/2008	GeoScience	540	**120**	1.1	14	ND
	9/27/2009	GeoScience	ND	**180**	ND	10	ND
	4/11/2011	GeoScience	ND	ND	ND	ND	ND
	9/14/2012	SoundEarth	ND	**5.2**	1.3	ND	ND
	4/5/2013	SoundEarth	ND	**5.75**	ND	5.34	ND
	1/16/2014	SoundEarth	390	**18**	5.6	10	16
	5/30/2014	SoundEarth	ND	ND	ND	ND	ND
	8/7/2014	SoundEarth	ND	1.8	ND	ND	ND
	5/20/2015	SoundEarth	ND	1.3	ND	ND	ND
MW-116	12/6/2008	GeoScience	380	**49**	ND	ND	ND
	9/27/2009	GeoScience	ND	**32**	ND	1.2	ND
	4/11/2011	GeoScience	ND	ND	ND	ND	ND
	9/14/2012	SoundEarth	ND	1.1	ND	ND	ND
	4/5/2013	SoundEarth	ND	ND	ND	ND	ND
	1/16/2014	SoundEarth	ND	ND	ND	ND	ND
	5/30/2014	SoundEarth	ND	ND	ND	ND	ND
	8/7/2014	SoundEarth	ND	ND	ND	ND	ND
	5/20/2015	SoundEarth	ND	ND	ND	ND	ND
	4/13/2016	Aspect	ND	ND	ND	ND	ND
	7/22/2016	Aspect	ND	0.44	ND	ND	ND
	10/18/2016	Aspect	ND	1	ND	ND	ND
	1/16/2017	Aspect	ND	ND	ND	ND	ND
	7/31/2017	Aspect	ND	0.58	ND	ND	ND
MW-117	12/6/2008	GeoScience	100	12	1.6	ND	ND
	9/27/2009	GeoScience	ND	1.4	1	ND	ND
	4/11/2011	GeoScience	ND	ND	ND	ND	ND
	9/14/2012	SoundEarth	ND	ND	ND	ND	ND
	4/5/2013	SoundEarth	ND	ND	ND	ND	ND
	8/7/2014	SoundEarth	ND	ND	ND	ND	ND
MW-118	12/6/2008	GeoScience	**2,400**	**290**	3	20	5.1
	9/27/2009	GeoScience	ND	4.1	21	2	14
	4/11/2011	GeoScience	ND	1.1	3.1	1.9	5.8
	9/14/2012	SoundEarth	ND	ND	ND	ND	ND
	4/5/2013	SoundEarth	ND	ND	ND	ND	ND
	5/30/2014	SoundEarth	ND	ND	ND	ND	ND
MW-119	5/20/2015	SoundEarth	ND	ND	1.1	ND	ND
	4/13/2016	Aspect	ND	ND	ND	ND	ND
	7/22/2016	Aspect	310	1.7	ND	ND	ND
	10/18/2016	Aspect	140	ND	ND	ND	ND
	1/16/2017	Aspect	110	1.7	ND	ND	ND
	7/31/2017	Aspect	ND	ND	ND	ND	ND

Notes
Bold values exceed MTCA Method A Groundwater Cleanup Levels for Unrestricted Land Use.
(1) Cleanup level for gasoline with benzene present.
ND = Not detected above laboratory reporting limit.
NS = Not sampled.
TPH = Total petroleum hydrocarbons
µg/L = micrograms/liter

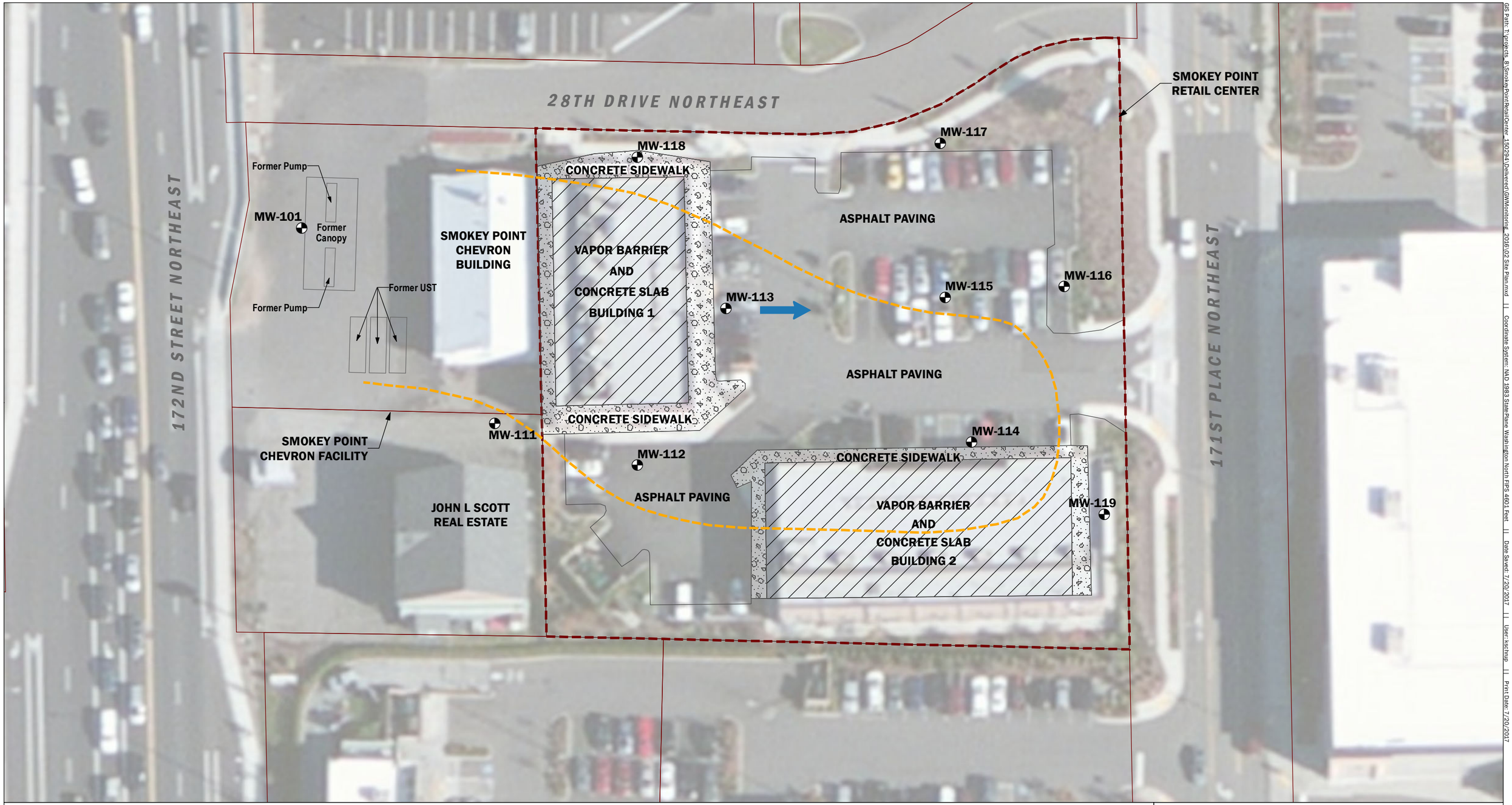
FIGURES

Vicinity Map

Groundwater Monitoring Report
Smokey Point Retail Center
Marysville, Washington

Aspect CONSULTING	MAR-2017	BY: AET / RAP	FIGURE NO. 1
	PROJECT NO. 150294	REVISED BY: EAC	

GIS Path: T:\projects_8\Smokey Point Retail Center_150294\Delivered\GW Monitoring_2016\01 Vicinity Map.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 3/3/2017 || User: ecrumbaker || Print Date: 3/3/2017



Monitoring Well

Groundwater Flow Direction (August 7, 2014)

Extent of Petroleum Benzene Contaminated Groundwater Plume Based on 5µg/L MTCA Method A Groundwater Cleanup Level.

Vapor Barrier

Property Boundary

King County Parcels

N

0 40 80

Feet

Site Plan

Groundwater Monitoring Report
Smokey Point Retail Center
Marysville, Washington

Aspect CONSULTING	JUL-2017	BY: AET / EAC	FIGURE NO. 2
	PROJECT NO. 150294	REVISED BY: AET/ KES	

Basemap Layer Credits || Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

GIS Path: T:\projects_8\SmokeyPointRetailCenter_150294\Deliverables\GWMonitoring_2016\02 Site Plan.mxd || Coordinate System: NAD 1983 StatePlane Washington North FIPS 4601 Feet || Date Saved: 7/20/2017 || User: kschrup || Print Date: 7/20/2017

ATTACHMENT A

Laboratory Certificates of Analysis

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 8, 2017

Eric Knoedler, Project Manager
Aspect Consulting, LLC
401 2nd Ave S, Suite 201
Seattle, WA 98104

Dear Mr Knoedler:

Included are the results from the testing of material submitted on August 1, 2017 from the Smokey Point 150294, F&BI 708012 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: data@aspectconsulting.com
ASP0808R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 1, 2017 by Friedman & Bruya, Inc. from the Aspect Consulting, LLC Smokey Point 150294, F&BI 708012 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Aspect Consulting, LLC
708012 -01	MW-112-073117
708012 -02	MW-113-073117
708012 -03	MW-114-073117
708012 -04	MW-116-073117
708012 -05	MW-119-073117

All quality control requirements were acceptable.

Date of Report: 08/08/17
Date Received: 08/01/17
Project: Smokey Point 150294, F&BI 708012
Date Extracted: 08/06/17
Date Analyzed: 08/06/17

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-112-073117 708012-01	120	85
MW-113-073117 708012-02	130	87
MW-114-073117 708012-03	310	85
MW-116-073117 708012-04	<100	85
MW-119-073117 708012-05	<100	92
Method Blank 07-1616 MB	<100	73

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-112-073117	Client:	Aspect Consulting, LLC
Date Received:	08/01/17	Project:	Smokey Point 150294, F&BI 708012
Date Extracted:	08/01/17	Lab ID:	708012-01
Date Analyzed:	08/01/17	Data File:	080128.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	103	91	108
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)
Benzene	1.0
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-113-073117	Client:	Aspect Consulting, LLC
Date Received:	08/01/17	Project:	Smokey Point 150294, F&BI 708012
Date Extracted:	08/01/17	Lab ID:	708012-02
Date Analyzed:	08/01/17	Data File:	080129.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	106	91	108
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)
Benzene	13
Toluene	<1
Ethylbenzene	1.4
m,p-Xylene	2.6
o-Xylene	8.7

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-114-073117	Client:	Aspect Consulting, LLC
Date Received:	08/01/17	Project:	Smokey Point 150294, F&BI 708012
Date Extracted:	08/01/17	Lab ID:	708012-03
Date Analyzed:	08/01/17	Data File:	080130.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	85	117
Toluene-d8	107	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Benzene	8.3
Toluene	<1
Ethylbenzene	6.9
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-116-073117	Client:	Aspect Consulting, LLC
Date Received:	08/01/17	Project:	Smokey Point 150294, F&BI 708012
Date Extracted:	08/01/17	Lab ID:	708012-04
Date Analyzed:	08/01/17	Data File:	080131.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	106	91	108
4-Bromofluorobenzene	99	76	126

Compounds:	Concentration ug/L (ppb)
Benzene	0.58
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	MW-119-073117	Client:	Aspect Consulting, LLC
Date Received:	08/01/17	Project:	Smokey Point 150294, F&BI 708012
Date Extracted:	08/01/17	Lab ID:	708012-05
Date Analyzed:	08/01/17	Data File:	080132.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	104	91	108
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Aspect Consulting, LLC
Date Received:	Not Applicable	Project:	Smokey Point 150294, F&BI 708012
Date Extracted:	08/01/17	Lab ID:	07-1630 mb
Date Analyzed:	08/01/17	Data File:	080120.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	103	91	108
4-Bromofluorobenzene	97	76	126

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Date of Report: 08/08/17
Date Received: 08/01/17
Project: Smokey Point 150294, F&BI 708012

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 707458-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	81	70-119

Date of Report: 08/08/17
Date Received: 08/01/17
Project: Smokey Point 150294, F&BI 708012

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 707455-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	50	<0.35	100	75-114
Toluene	ug/L (ppb)	50	<1	92	73-117
Ethylbenzene	ug/L (ppb)	50	<1	94	66-124
m,p-Xylene	ug/L (ppb)	100	<2	96	63-128
o-Xylene	ug/L (ppb)	50	<1	94	64-129

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	103	101	75-116	2
Toluene	ug/L (ppb)	50	93	91	79-115	2
Ethylbenzene	ug/L (ppb)	50	95	94	83-111	1
m,p-Xylene	ug/L (ppb)	100	98	96	84-112	2
o-Xylene	ug/L (ppb)	50	97	94	81-117	3

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

708012

SAMPLE CHAIN OF CUSTODY

ME 08-01-17 VWZ

Page # 1 of 1

Report To Eric Knoedler

Company Aspect Consulting

Address 401 2nd Ave S. Ste 201

City, State, ZIP Seattle WA 98104

Phone 206-328-7443 Email eknoedler@aspectconsulting.com ATTN: @ASPECTCONSULTING.COM

SAMPLERS (signature)

PROJECT NAME: Smokey Point 150294

PO #:

REMARKS: THANKS

INVOICE TO:

TURNAROUND TIME
- [X] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	BTEX (8260)				Notes
MW-112-073117	01AF	07-31-17	1045	H_2O	6			X					X				
MW-113-073117	02AF	07-31-17	1125	↓	↓			X					X				
MW-114-073117	03AF	07-31-17	1205					X					X				
MW-116-073117	04AF	07-31-17	1305					X					X				
MW-119-073117	05AF	07-31-17	1350	↓	↓			X					X				
																	Samples received at 4 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Eric Knoedler	Aspect	8/1/17	8:57AM
Received by:	Joel Underdahl	Fedex	8-1-17	8:57AM
Relinquished by:				
Received by:	HONG NGUYEN	FBI	8/1/17	10:15

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

ATTACHMENT B

Gasoline Plume Stability Analysis

Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	

Well (Sampling) Location?	**MW113**
Level of Confidence (Decision Criteria)?	**85%**

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

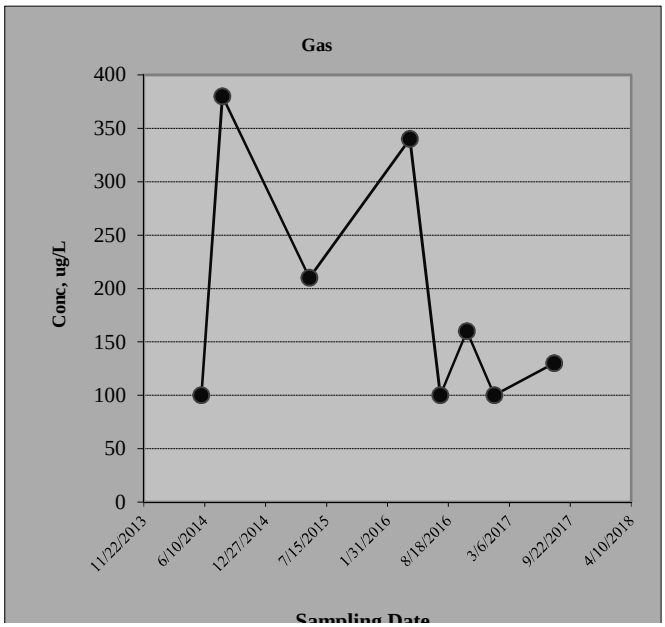
		Hazardous Substances (unit is ug/L)					
Sampling Event	Date Sampled	Gas					
#1	5/30/2014	100					
#2	8/7/2014	380					
#3	5/20/2015	210					
#4	4/13/2016	340					
#5	7/22/2016	100					
#6	10/18/2016	160					
#7	1/16/2017	100					
#8	7/31/2017	130					
#9							
#10							
#11							
#12							
#13							
#14							
#15							
#16							

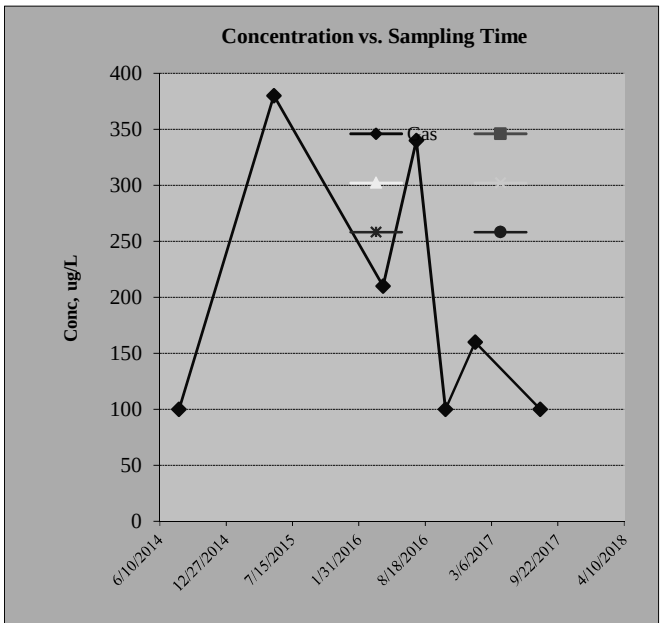
2. Mann-Kendall Non-parametric Statistical Test Results

Hazardous Substance?	**Gas**					
Confidence Level Calculated?	72.60%	NA	NA	NA	NA	NA
Plume Stability?	Stable	NA	NA	NA	NA	NA
Coefficient of Variation?	CV <= 1	n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	-7	0	0	0	0	0
Number of Sampling Rounds?	8	0	0	0	0	0
Average Concentration?	190.00	NA	NA	NA	NA	NA
Standard Deviation?	111.99	NA	NA	NA	NA	NA
Coefficient of Variation?	0.59	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance?	**Gas**
Plume Stability?	**Stable**





Sampling Date

Sampling Date

Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	

Well (Sampling) Location?	**MW114**
Level of Confidence (Decision Criteria)?	**85%**

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

		Hazardous Substances (unit is ug/L)					
Sampling Event	Date Sampled	Gas					
#1	5/30/2014	190					
#2	8/7/2014	300					
#3	5/20/2015	100					
#4	4/13/2016	100					
#5	7/22/2016	170					
#6	10/18/2016	1400					
#7	1/16/2017	140					
#8	7/31/2017	310					
#9							
#10							
#11							
#12							
#13							
#14							
#15							
#16							

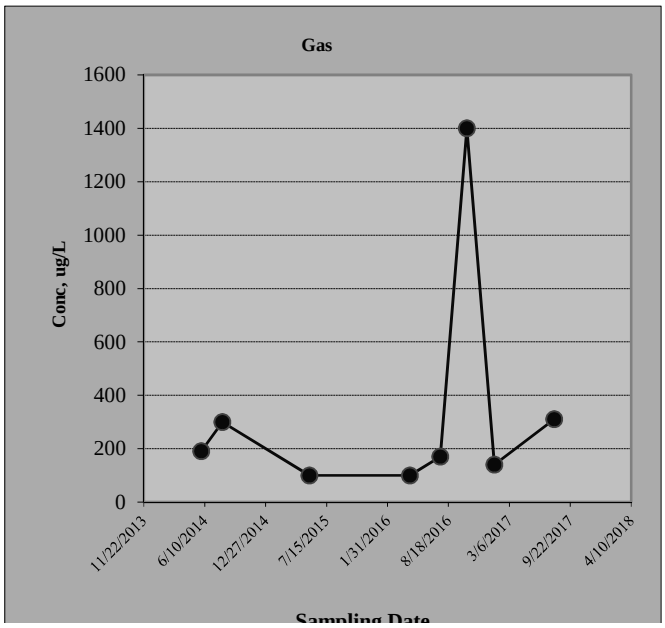
2. Mann-Kendall Non-parametric Statistical Test Results

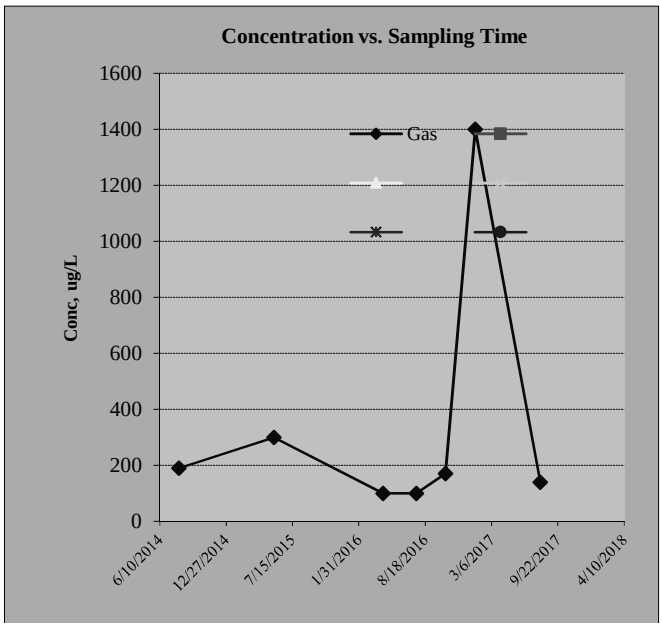
Hazardous Substance?	**Gas**					
Confidence Level Calculated?	64.00%	NA	NA	NA	NA	NA
Plume Stability?	Undetermined	NA	NA	NA	NA	NA
Coefficient of Variation?	CV > 1	n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	5	0	0	0	0	0
Number of Sampling Rounds?	8	0	0	0	0	0
Average Concentration?	338.75	NA	NA	NA	NA	NA
Standard Deviation?	436.33	NA	NA	NA	NA	NA
Coefficient of Variation?	1.29	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance? **Gas**

Plume Stability? **Undetermined**





Sampling Date

Sampling Date

Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	

Well (Sampling) Location?	**MW114**
Level of Confidence (Decision Criteria)?	**85%**

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

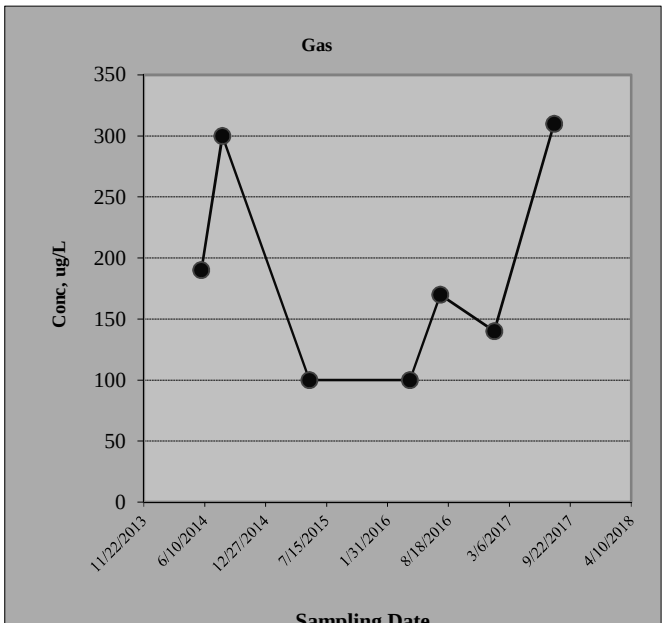
		Hazardous Substances (unit is ug/L)					
Sampling Event	Date Sampled	Gas					
#1	5/30/2014	190					
#2	8/7/2014	300					
#3	5/20/2015	100					
#4	4/13/2016	100					
#5	7/22/2016	170					
#6	1/16/2017	140					
#7	7/31/2017	310					
#8							
#9							
#10							
#11							
#12							
#13							
#14							
#15							
#16							

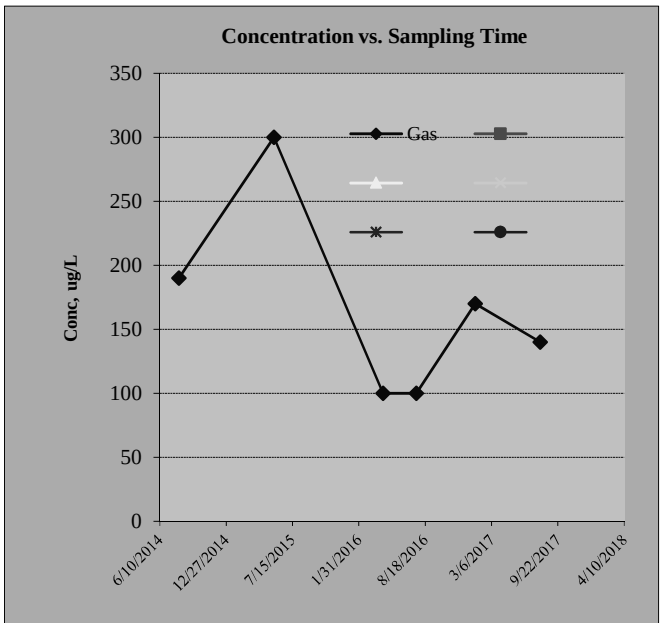
2. Mann-Kendall Non-parametric Statistical Test Results

Hazardous Substance?	**Gas**					
Confidence Level Calculated?	50.00%	NA	NA	NA	NA	NA
Plume Stability?	Stable	NA	NA	NA	NA	NA
Coefficient of Variation?	CV <= 1	n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	2	0	0	0	0	0
Number of Sampling Rounds?	7	0	0	0	0	0
Average Concentration?	187.14	NA	NA	NA	NA	NA
Standard Deviation?	87.12	NA	NA	NA	NA	NA
Coefficient of Variation?	0.47	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance?	**Gas**
Plume Stability?	**Stable**



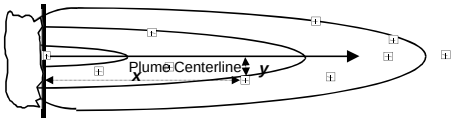


Sampling Date

Sampling Date

Module 2: Inputs: Enter Historical Ground Water Data

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	
Hazardous Substance	*Gasoline-range petroleum hydrocarbons*



1. Monitoring Well information: Contaminant Concentration at a well: Note: relationship of "y/x ≤ 0.33" is preferred

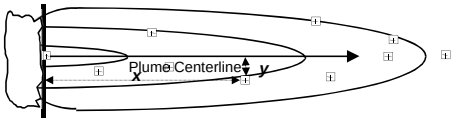
Well Location:		Unit		MW112	MW113	MW114													
Dist from source, x-direction		ft																	
Off-centerline dist, y-direction		ft																	
Sampling Event	Date sampled	day	Unit of concentration is ug/L																
#1	5/30/14	0		4100	100	190													
#2	8/7/14	69		5800	380	300													
#3	5/20/15	355		990	210	100													
#4	4/13/16	684		630	340	100													
#5	7/22/16	784		100	100	170													
#6	10/18/16	872		100	160	1400													
#7	1/16/17	962		240	100	140													
#8	7/31/17	1158		120	130	310													
#9																			
#10																			
#11																			
#12																			
#13																			
#14																			
#15																			
#16																			
#17																			
#18																			
#19																			
#20																			
Average Concentration			na	1510.0	190.0	338.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum Concentration			NA	5800	380	1400	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Minimum Concentration			NA	100	100	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2. Groundwater Elevation:

Well Location:																			
Sampling Event	Date sampled	Day																	
#1	5/30/14	0		95.46	95.44	95.15													
#2	8/7/14	69		94.2	94.06	93.79													
#3	5/20/15	355		94.64	94.57	94.29													
#4	4/13/16	684		95.96	95.91	95.57													
#5	7/22/16	784		94.44	94.35	94.03													
#6	10/18/16	872		94.47	94.38	94.13													
#7	1/16/17	962		95.5	95.42	95.09													
#8	7/31/17	1158		94.13	94	93.69													
#9																			
#10																			
#11																			
#12																			
#13																			
#14																			
#15																			
#16																			
#17																			
#18																			
#19																			
#20																			

Module 2: Inputs: Enter Historical Ground Water Data

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	
Hazardous Substance	*Gasoline-range petroleum hydrocarbons*



1. Monitoring Well information: Contaminant Concentration at a well: Note: relationship of "y/x ≤ 0.33" is preferred

Well Location:		Unit		MW112	MW113	MW114													
Dist from source, x-direction		ft																	
Off-centerline dist, y-direction		ft																	
Sampling Event	Date sampled	day	Unit of concentration is ug/L																
#1	5/30/14	0		4100	100	190													
#2	8/7/14	69		5800	380	300													
#3	5/20/15	355		990	210	100													
#4	4/13/16	684		630	340	100													
#5	7/22/16	784		100	100	170													
#6	1/16/17	962		240	100	140													
#7	7/31/17	1158		120	130	310													
#8																			
#9																			
#10																			
#11																			
#12																			
#13																			
#14																			
#15																			
#16																			
#17																			
#18																			
#19																			
#20																			
Average Concentration			na	1711.4	194.3	187.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum Concentration			NA	5800	380	310	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Minimum Concentration			NA	100	100	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2. Groundwater Elevation:

Well Location:																			
Sampling Event	Date sampled	Day																	
#1	5/30/14	0		95.46	95.44	95.15													
#2	8/7/14	69		94.2	94.06	93.79													
#3	5/20/15	355		94.64	94.57	94.29													
#4	4/13/16	684		95.96	95.91	95.57													
#5	7/22/16	784		94.44	94.35	94.03													
#6	1/16/17	962		95.5	95.42	95.09													
#7	7/31/17	1158		94.13	94	93.69													
#8																			
#9																			
#10																			
#11																			
#12																			
#13																			
#14																			
#15																			
#16																			
#17																			
#18																			
#19																			
#20																			

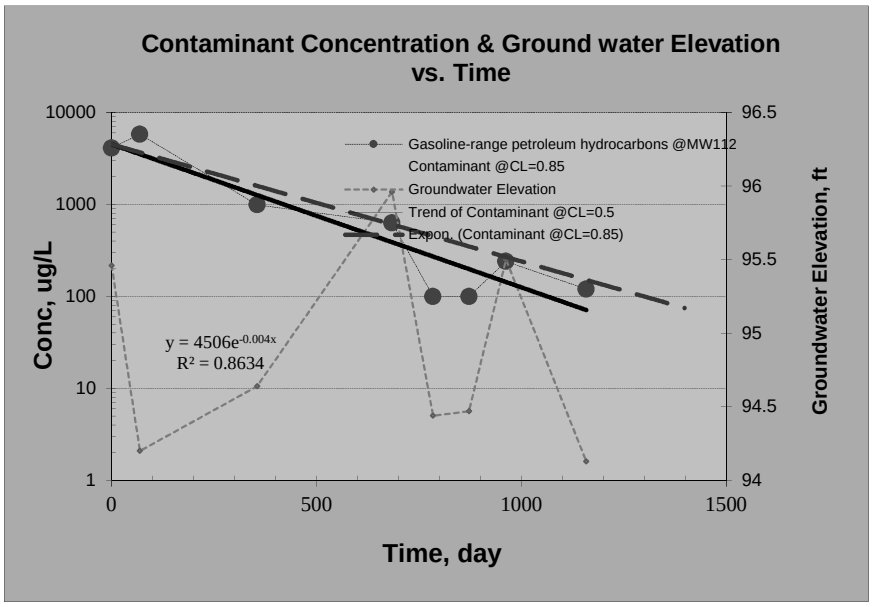
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

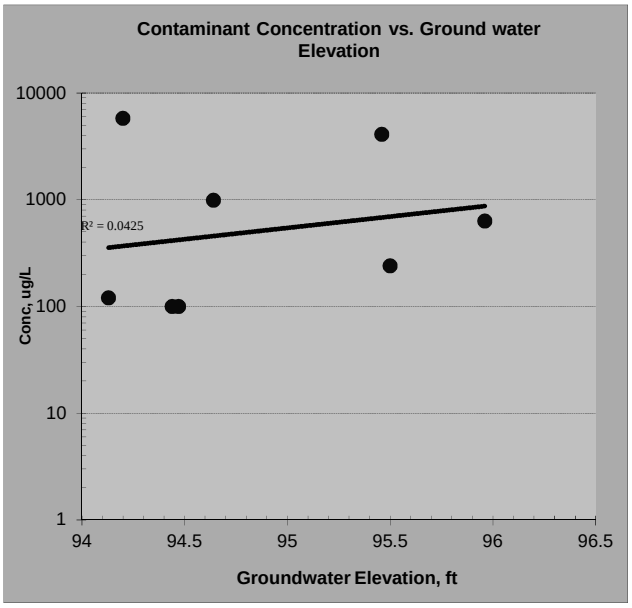
Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Gasoline-range petroleum hydrocarbons*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	**MW112**	Confidence Level (Decision Criteria)?	85.0%

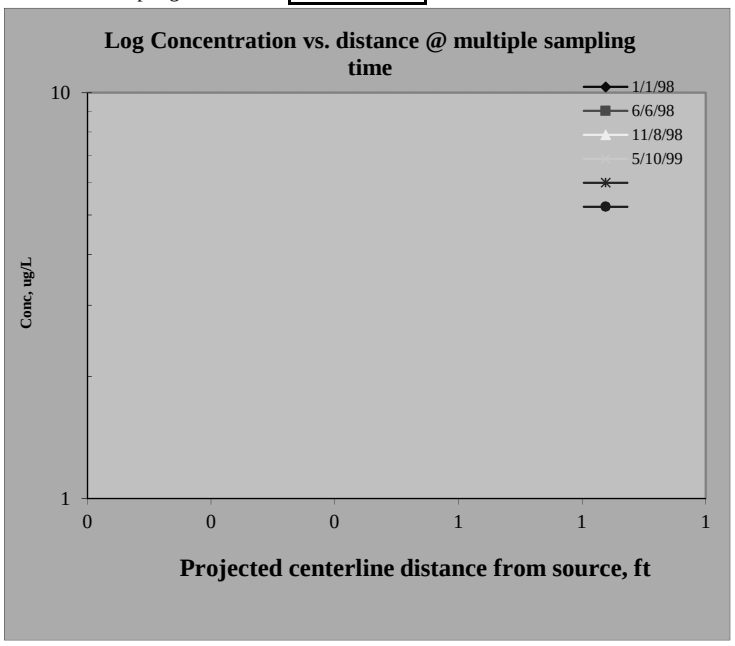
Confidence Level calculated with log-linear regression is?	*99.916%*			
Plume Stability?	Shrinking	; Decision Criteria is 85%.		
Slope: Point decay rate constant (k_{point}), yr^{-1}	*1.308*	@50% C.L.;	*1.070*	@85% C.L.
Half Life for k_{point}, yr	*0.530*	@50% C.L.;	*0.648*	@85% C.L.

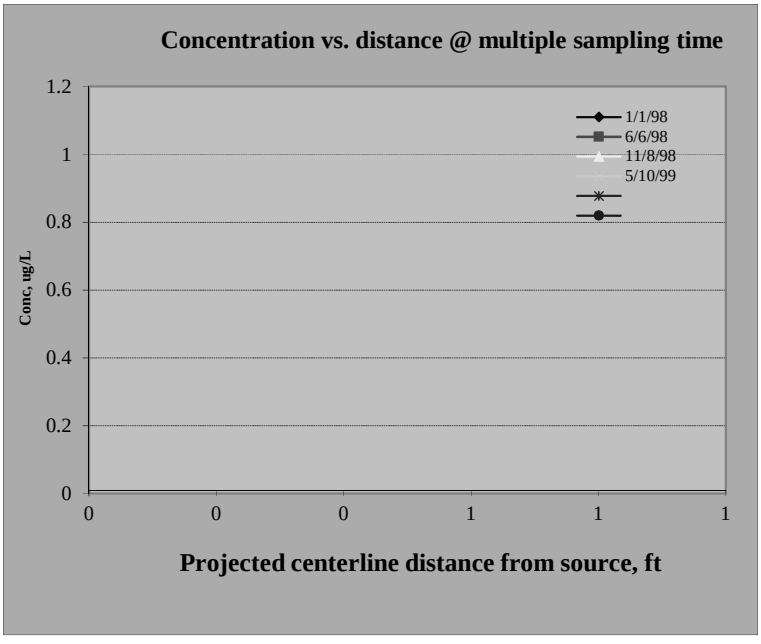




2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6	





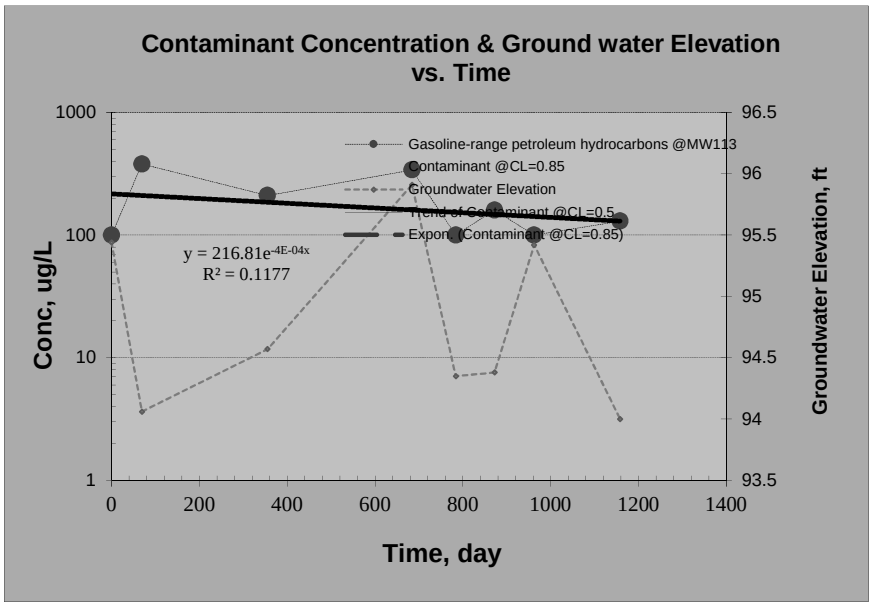
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

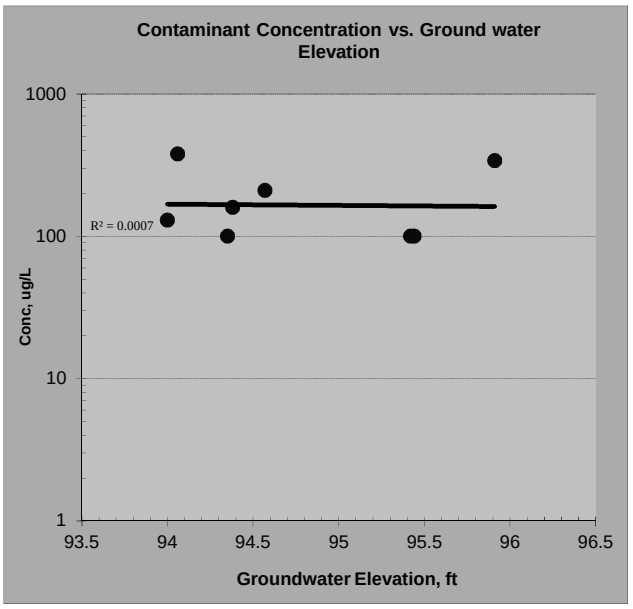
Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Gasoline-range petroleum hydrocarbons*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	**MW113**	Confidence Level (Decision Criteria)?	85.0%

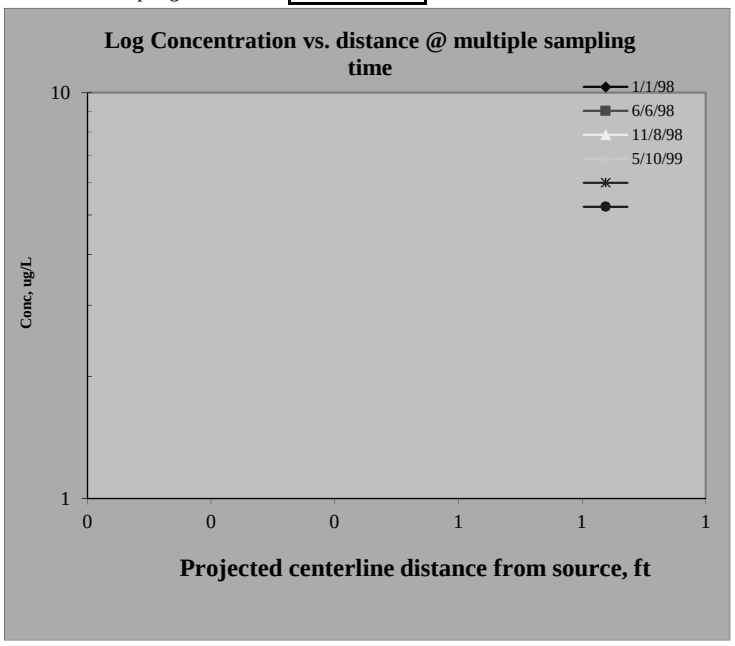
Confidence Level calculated with log-linear regression is?	*59.458%*		
Plume Stability?	Stable	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr^{-1}	*0.161* @50% C.L.;	*NA* @85% C.L.	
Half Life for k_{point}, yr	*4.298* @50% C.L.;	*NA* @85% C.L.	

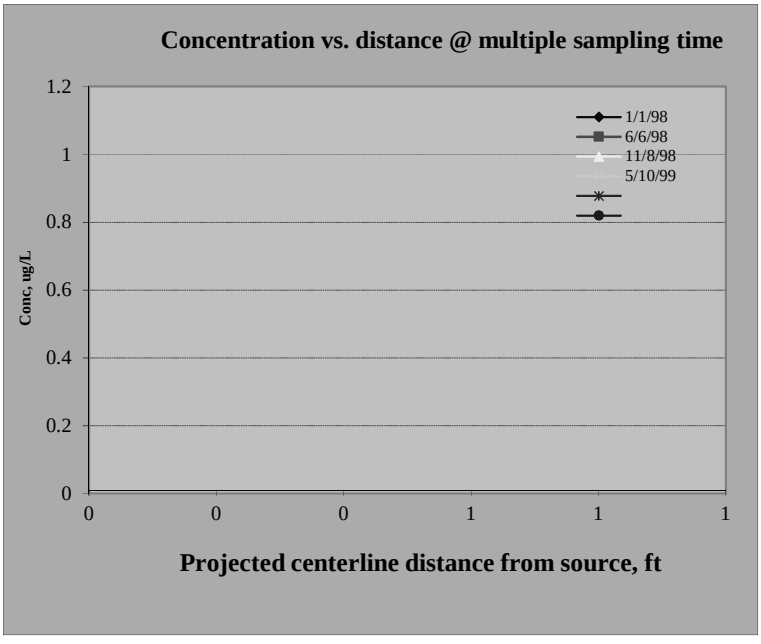




2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6	



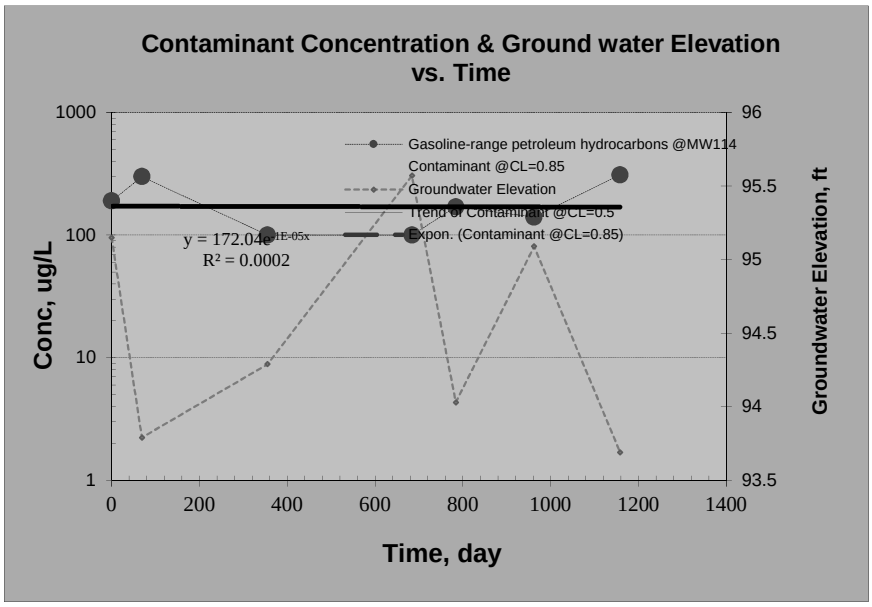


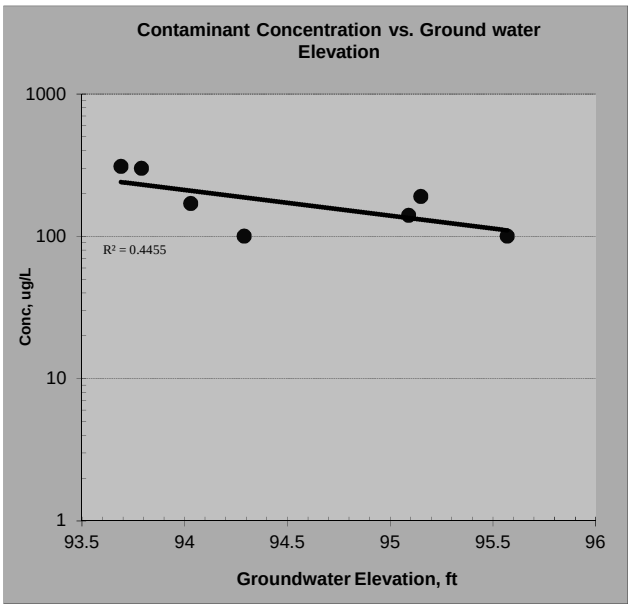
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Gasoline-range petroleum hydrocarbons*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

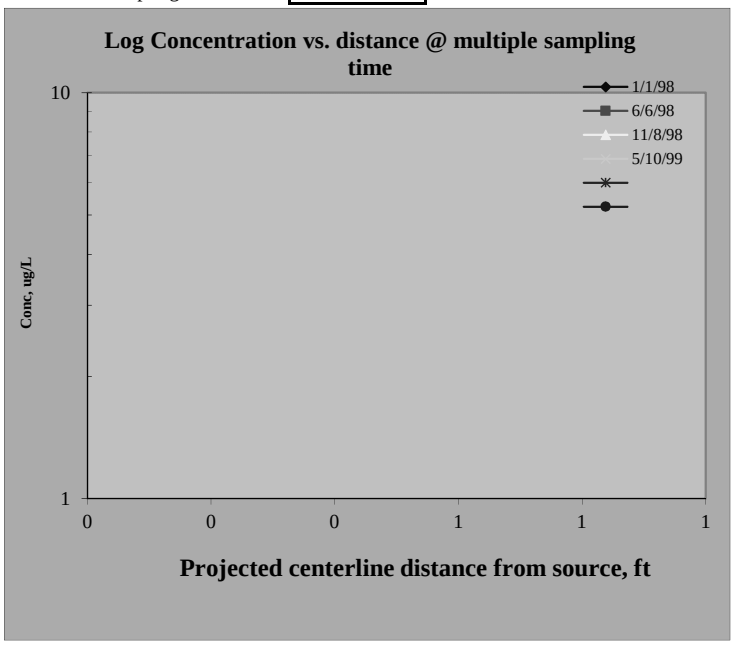
Name of Sampling Well?	**MW114**	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	*2.373%*		
Plume Stability?	Stable	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr^{-1}	*0.005* @50% C.L.;	*NA* @85% C.L.	
Half Life for k_{point}, yr	*129.584* @50% C.L.;	*NA* @85% C.L.	

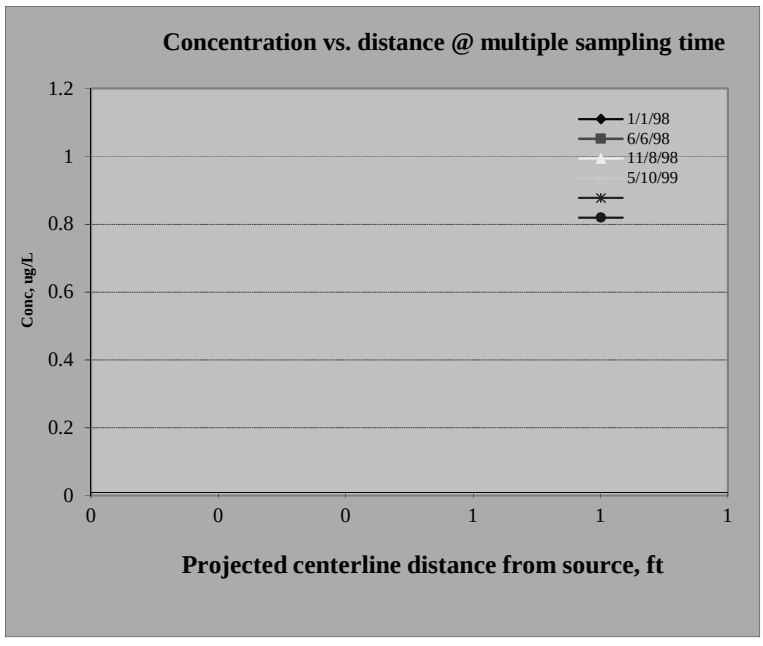




2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6	



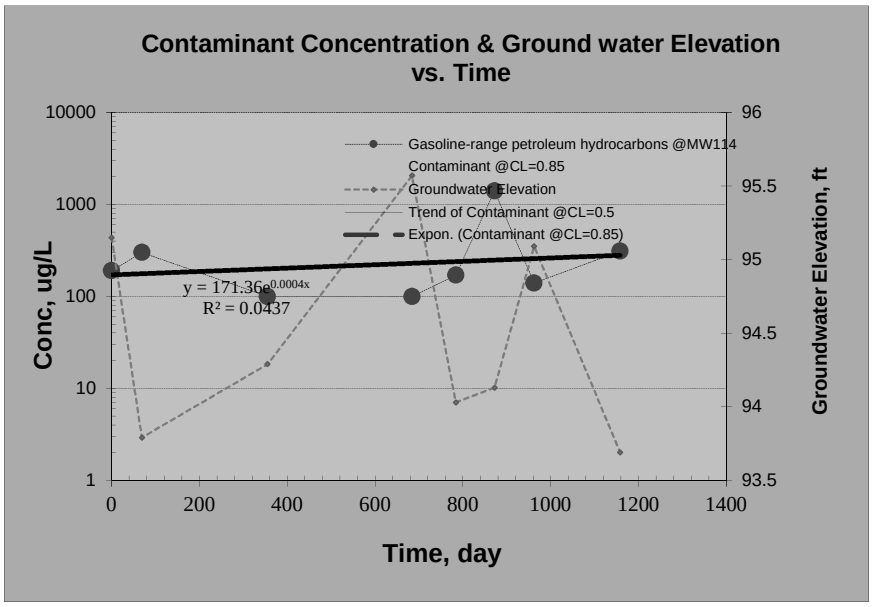


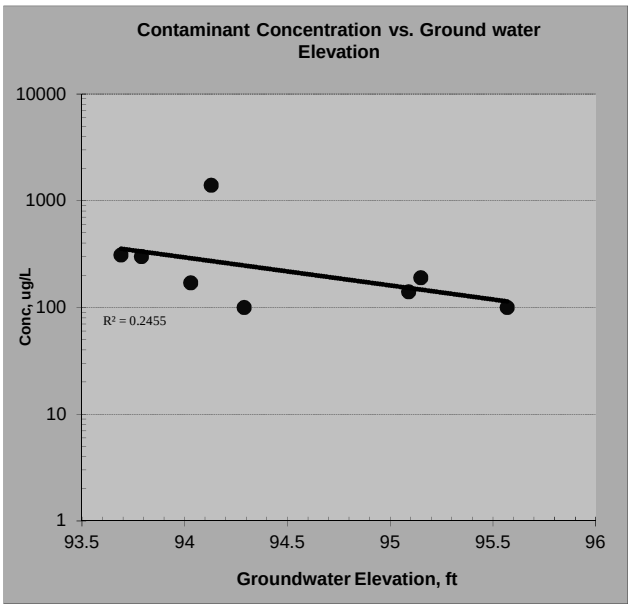
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Gasoline-range petroleum hydrocarbons*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

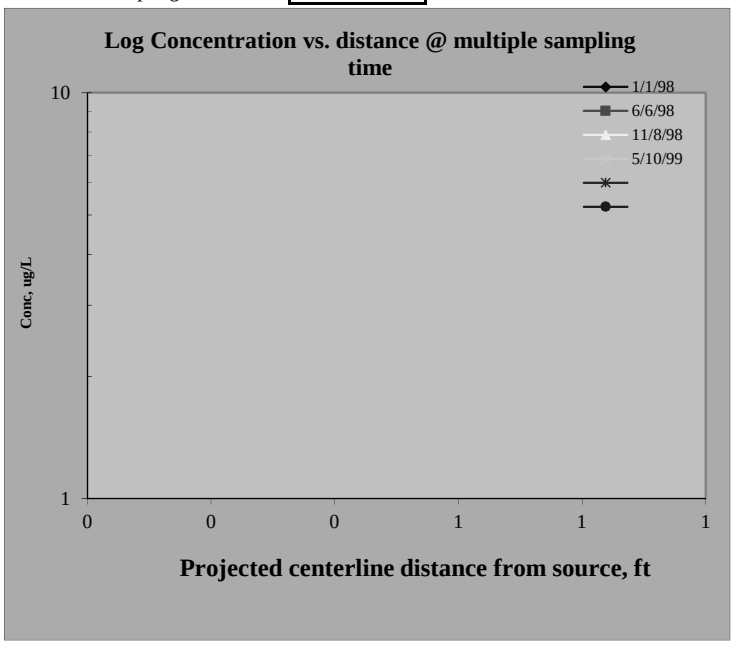
Name of Sampling Well?	**MW114**	Confidence Level (Decision Criteria)?	85.0%
Confidence Level calculated with log-linear regression is?	*38.052%*		
Plume Stability?	UD	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr^{-1}	*NA* @50% C.L.;	*NA* @85% C.L.	
Half Life for k_{point}, yr	*NA* @50% C.L.;	*NA* @85% C.L.	

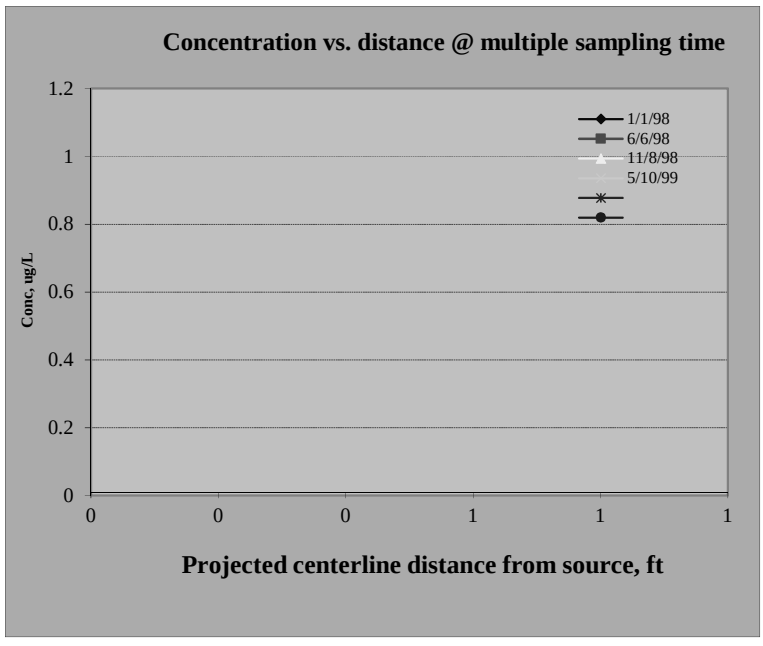




2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6	





ATTACHMENT C

Benzene Plume Stability Analysis

Module 1: Mann-Whitney U Trend Test for Plume Stability: Non-parametric Statistical Test

(Wilcoxon Rank Sum Test)

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	

Well (Sampling) Location MW113

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

			Contaminant of Concern (unit is ug/L)					
Sampling Event	$D_n - D_{n-1}$	Date Sampled	Benzene					
1		5/30/2014	1.80					
2	69	8/7/2014	16.00					
3	286	5/20/2015	11.00					
4	329	4/13/2016	3.00					
5	100	7/22/2016	0.35					
6	88	10/18/2016	1.60					
7	90	1/16/2017	0.44					
8	196	7/31/2017	13.00					

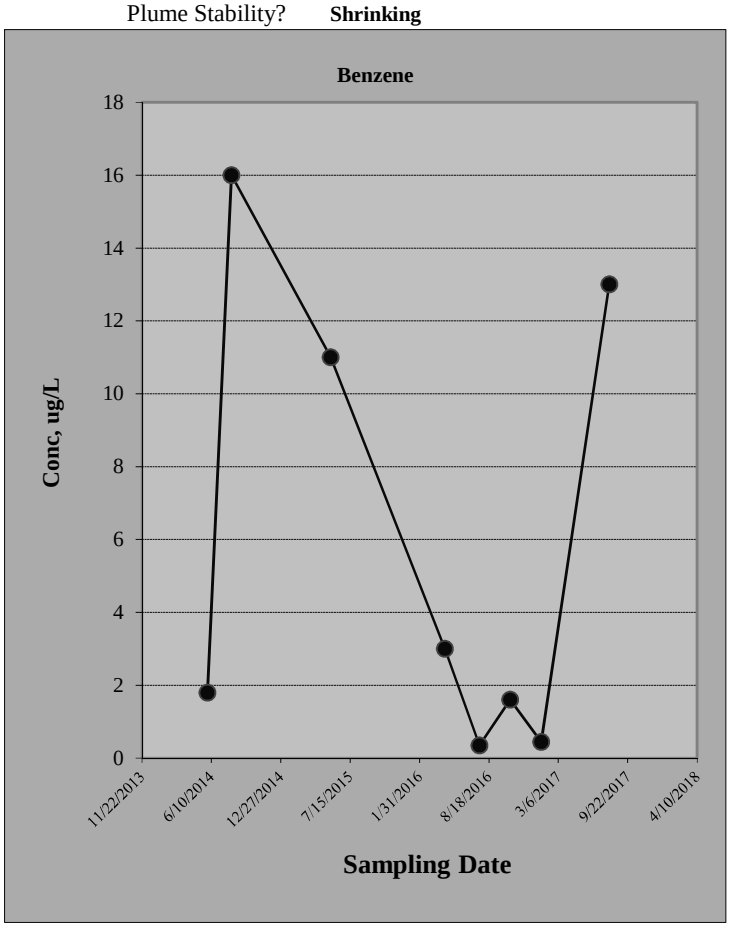
2. Mann-Whitney U Non-parametric Statistical Test Results (@ 90% Confidence Level pre-determined)

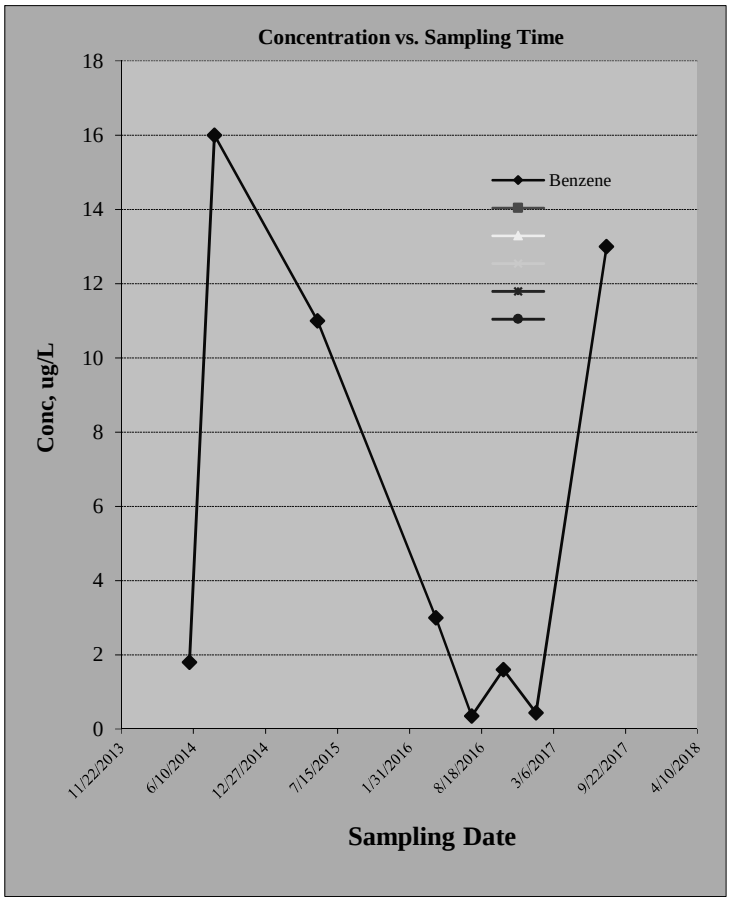
U Statistic?	3	n<8	n<8	n<8	n<8	n<8
Plume Stability?	Shrinking	n<8	n<8	n<8	n<8	n<8
Blank If No Errors found		n<8	n<8	n<8	n<8	n<8
		DATA IS NEITHER QUARTERLY OR SEMI-ANNUAL				

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance? **Benzene**

Plume Stability? **Shrinking**





Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	

Well (Sampling) Location?	**MW113**
Level of Confidence (Decision Criteria)?	**85%**

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

		Hazardous Substances (unit is ug/L)					
Sampling Event	Date Sampled	Benzene					
#1	5/30/2014	1.8					
#2	8/7/2014	16					
#3	5/20/2015	11					
#4	4/13/2016	3					
#5	7/22/2016	0.35					
#6	10/18/2016	1.6					
#7	1/16/2017	0.44					
#8	7/31/2017	13					
#9							
#10							
#11							
#12							
#13							
#14							
#15							
#16							

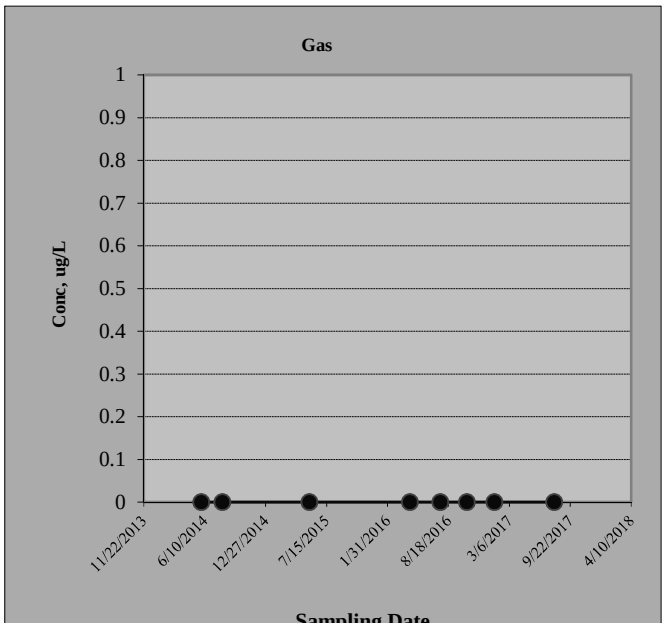
2. Mann-Kendall Non-parametric Statistical Test Results

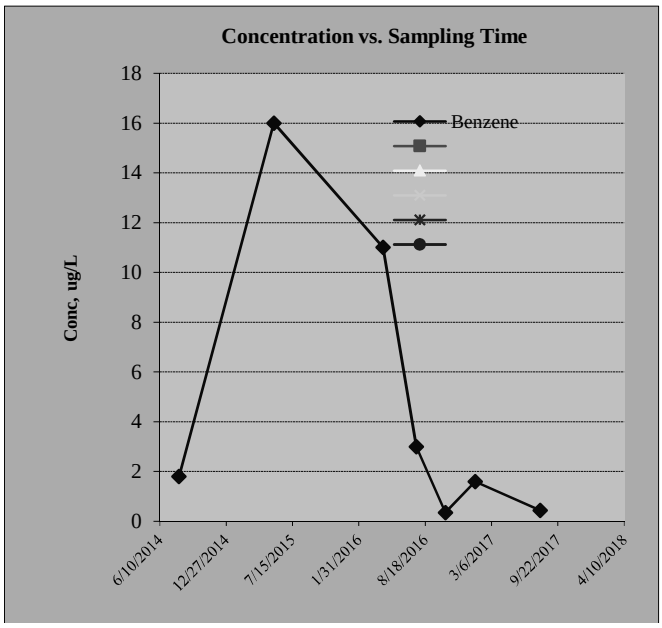
Hazardous Substance?	**Benzene**					
Confidence Level Calculated?	72.60%	NA	NA	NA	NA	NA
Plume Stability?	Undetermined	NA	NA	NA	NA	NA
Coefficient of Variation?	CV > 1	n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	-6	0	0	0	0	0
Number of Sampling Rounds?	8	0	0	0	0	0
Average Concentration?	5.90	NA	NA	NA	NA	NA
Standard Deviation?	6.36	NA	NA	NA	NA	NA
Coefficient of Variation?	1.08	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance? **Gas**

Plume Stability? **#VALUE!**





Sampling Date

Sampling Date

Module1: Mann-Kendall Trend Test for Plume Stability (Non-parametric Statistical Test)

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	

Well (Sampling) Location?	**MW114**
Level of Confidence (Decision Criteria)?	**85%**

1. Monitoring Well Information: Contaminant Concentration at a well: Quarterly sampling recommended.

		Hazardous Substances (unit is ug/L)					
Sampling Event	Date Sampled	Benzene					
#1	5/30/2014	25					
#2	8/7/2014	43					
#3	5/20/2015	5.4					
#4	4/13/2016	12					
#5	7/22/2016	10					
#6	10/18/2016	37					
#7	1/16/2017	11					
#8	7/31/2017	8.3					
#9							
#10							
#11							
#12							
#13							
#14							
#15							
#16							

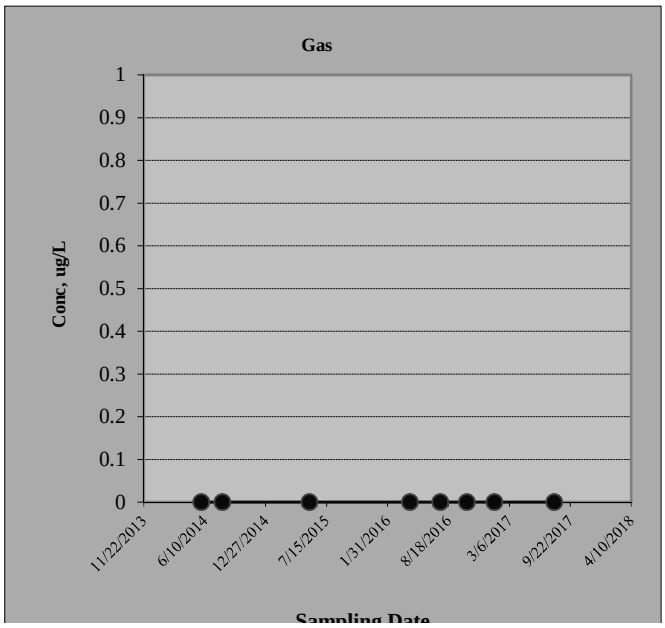
2. Mann-Kendall Non-parametric Statistical Test Results

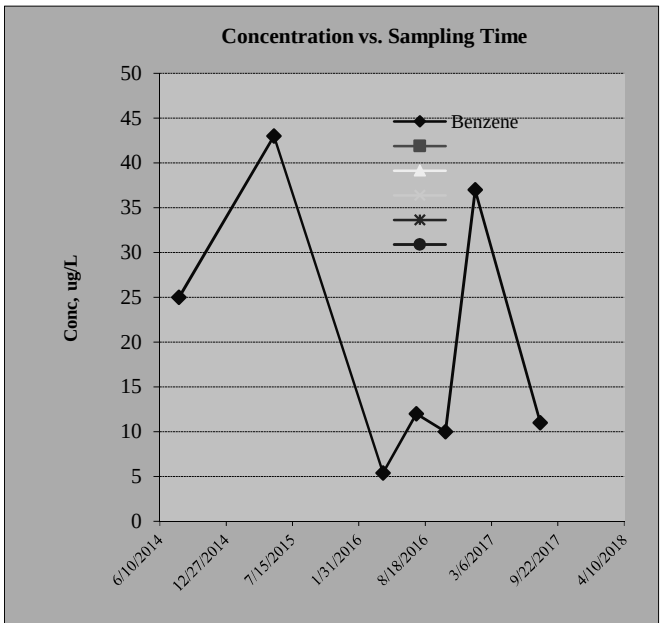
Hazardous Substance?	**Benzene**					
Confidence Level Calculated?	80.10%	NA	NA	NA	NA	NA
Plume Stability?	Stable	NA	NA	NA	NA	NA
Coefficient of Variation?	CV <= 1	n<4	n<4	n<4	n<4	n<4
Mann-Kendall Statistic "S" value?	-8	0	0	0	0	0
Number of Sampling Rounds?	8	0	0	0	0	0
Average Concentration?	18.96	NA	NA	NA	NA	NA
Standard Deviation?	14.29	NA	NA	NA	NA	NA
Coefficient of Variation?	0.75	NA	NA	NA	NA	NA
Blank if No Errors found		n<4	n<4	n<4	n<4	n<4

3. Temporal Trend: Plot of Concentration vs. Sampling Time

Hazardous substance? **Gas**

Plume Stability? **#VALUE!**



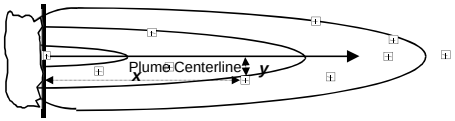


Sampling Date

Sampling Date

Module 2: Inputs: Enter Historical Ground Water Data

Site Name:	*Smokey Point Retail Center*
Site Address:	*Marysville, WA*
Additional Description:	
Hazardous Substance	*Benzene*



1. Monitoring Well information: Contaminant Concentration at a well: Note: relationship of "y/x ≤ 0.33" is preferred

Well Location:		Unit		MW112	MW113	MW114													
Dist from source, x-direction		ft																	
Off-centerline dist, y-direction		ft																	
Sampling Event	Date sampled	day	Unit of concentration is ug/L																
#1	5/30/14	0		570	1.8	25													
#2	8/7/14	69		140	16	43													
#3	5/20/15	355		24	11	5.4													
#4	4/13/16	684		2.2	3	12													
#5	7/22/16	784		0.79	0.35	10													
#6	10/18/16	872		0.35	1.6	37													
#7	1/16/17	962		17	0.44	11													
#8	7/31/17	1158		1	13	8.3													
#9																			
#10																			
#11																			
#12																			
#13																			
#14																			
#15																			
#16																			
#17																			
#18																			
#19																			
#20																			
Average Concentration			na	94.4	5.9	19.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Maximum Concentration			NA	570	16	43	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Minimum Concentration			NA	0.35	0.35	5.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

2. Groundwater Elevation:

Well Location:																			
Sampling Event	Date sampled	Day																	
#1	5/30/14	0		95.46	95.44	95.15													
#2	8/7/14	69		94.2	94.06	93.79													
#3	5/20/15	355		94.64	94.57	94.29													
#4	4/13/16	684		95.96	95.91	95.57													
#5	7/22/16	784		94.44	94.35	94.03													
#6	10/18/16	872		94.47	94.38	94.13													
#7	1/16/17	962		95.5	95.42	95.09													
#8	7/31/17	1158		94.13	94	93.69													
#9																			
#10																			
#11																			
#12																			
#13																			
#14																			
#15																			
#16																			
#17																			
#18																			
#19																			
#20																			

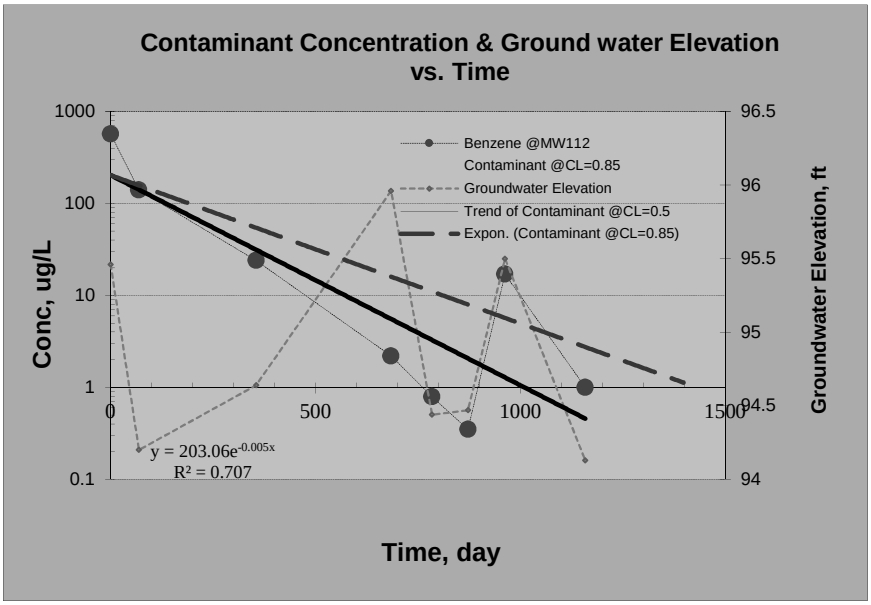
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

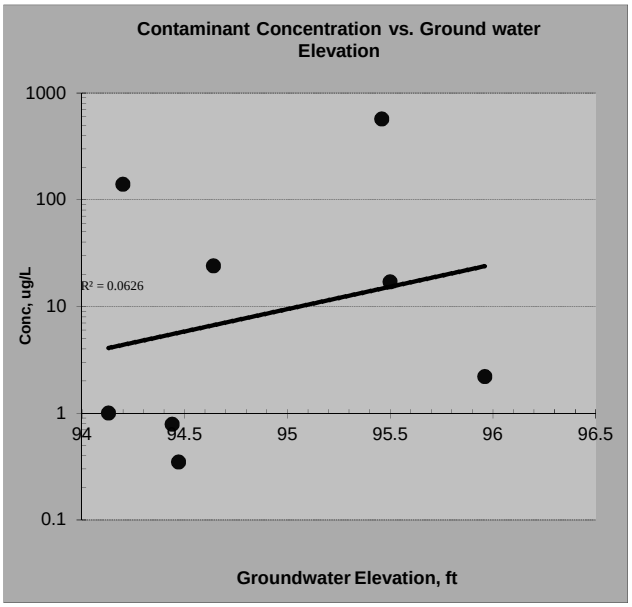
Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Benzene*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	**MW112**	Confidence Level (Decision Criteria)?	85.0%

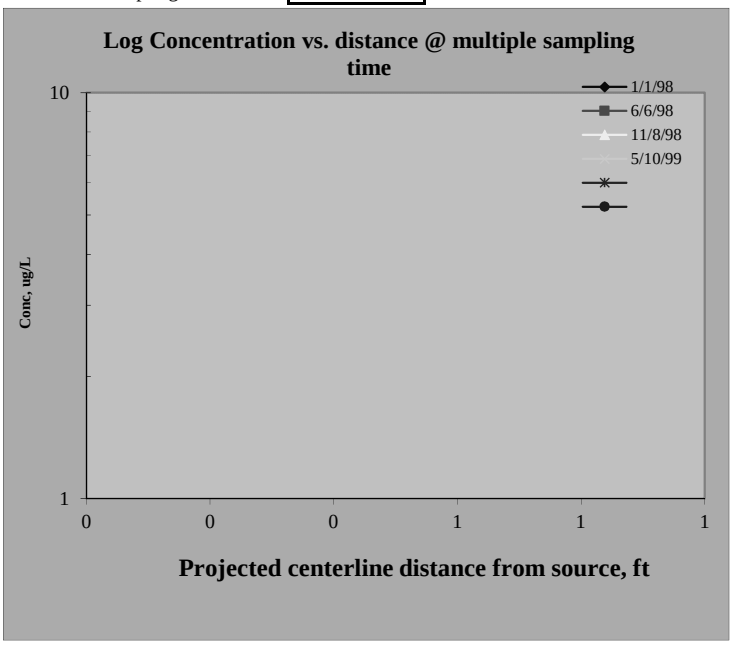
Confidence Level calculated with log-linear regression is?	*99.109%*		
Plume Stability?	Shrinking	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr^{-1}	*1.921* @50% C.L.;	*1.356*	@85% C.L.
Half Life for k_{point}, yr	*0.361* @50% C.L.;	*0.511*	@85% C.L.

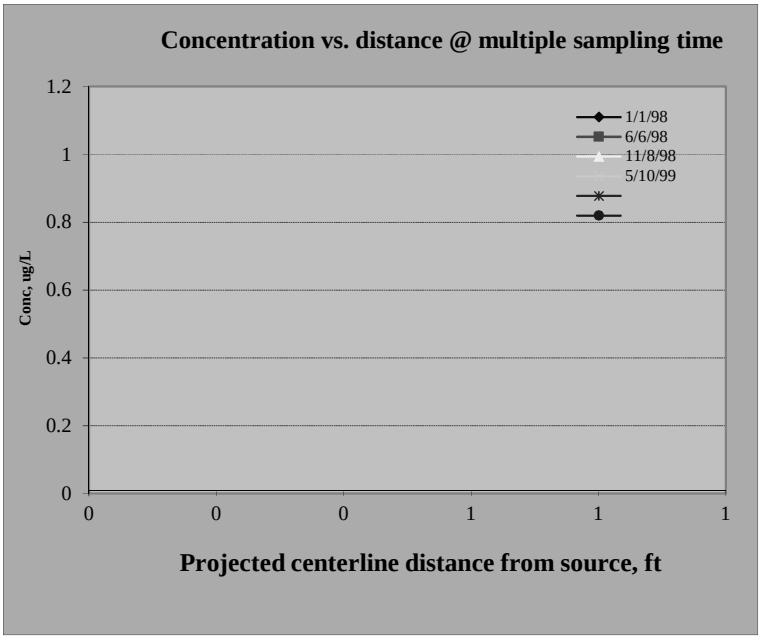




2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6	





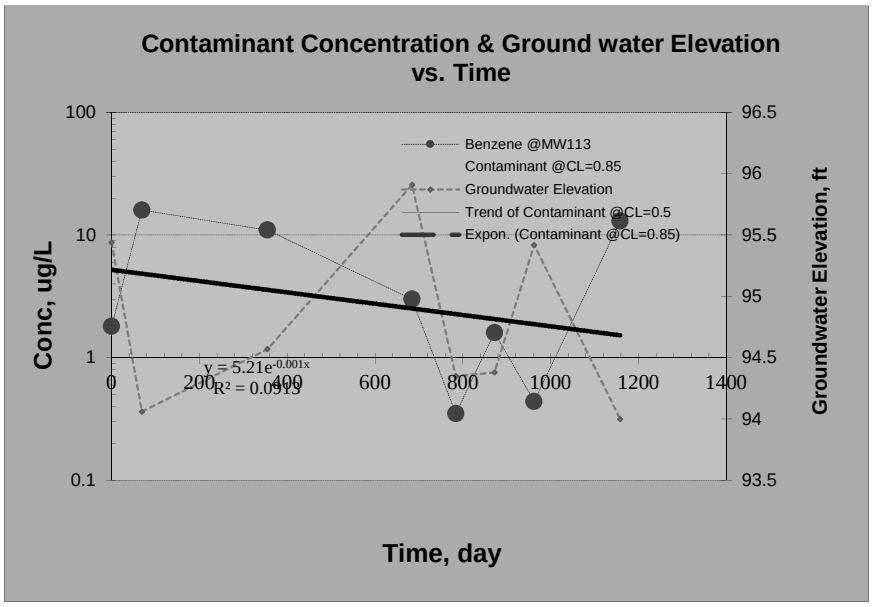
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

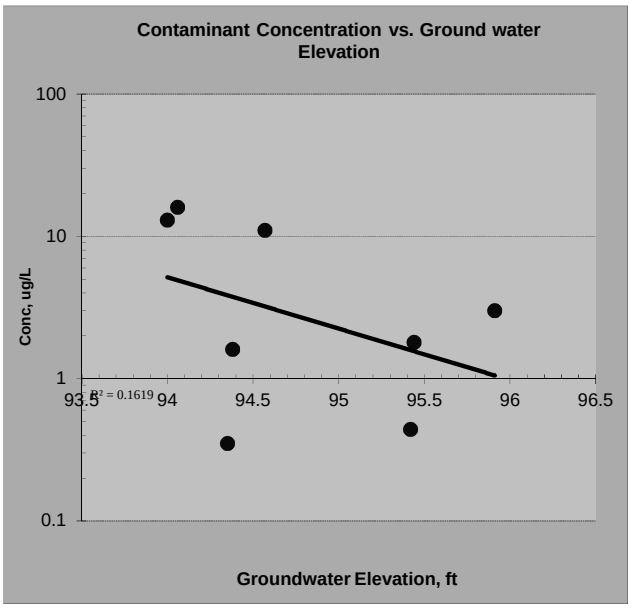
Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Benzene*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	**MW113**	Confidence Level (Decision Criteria)?	85.0%

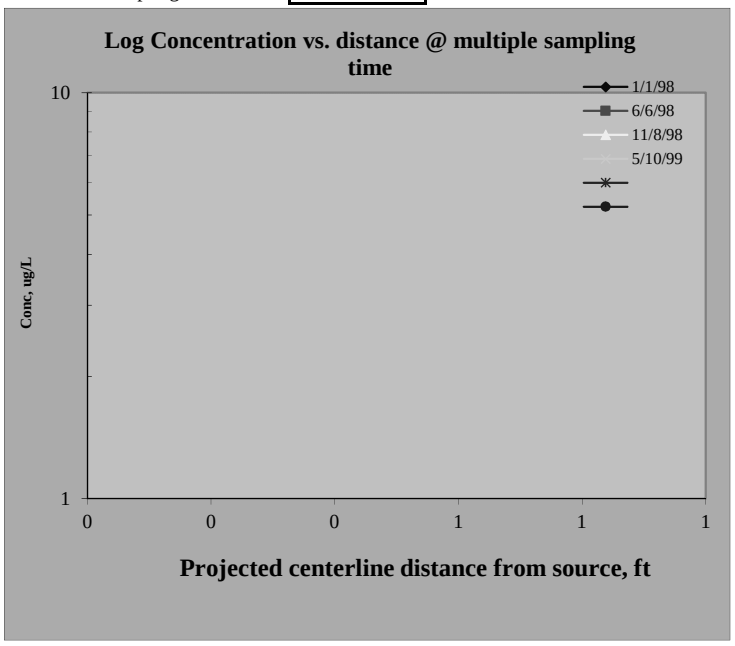
Confidence Level calculated with log-linear regression is?	*53.305%*	
Plume Stability?	UD ; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr^{-1}	*NA* @50% C.L.;	*NA* @85% C.L.
Half Life for k_{point}, yr	*NA* @50% C.L.;	*NA* @85% C.L.

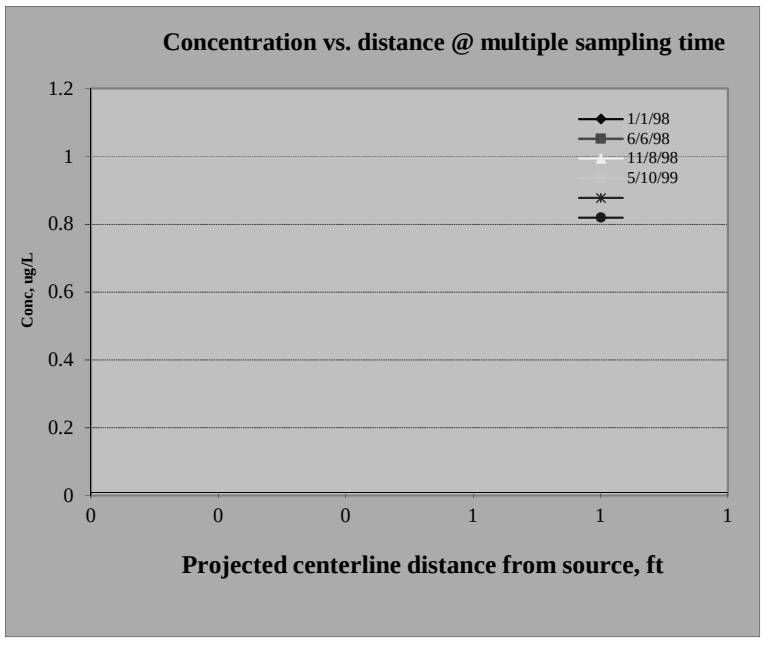




2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6	





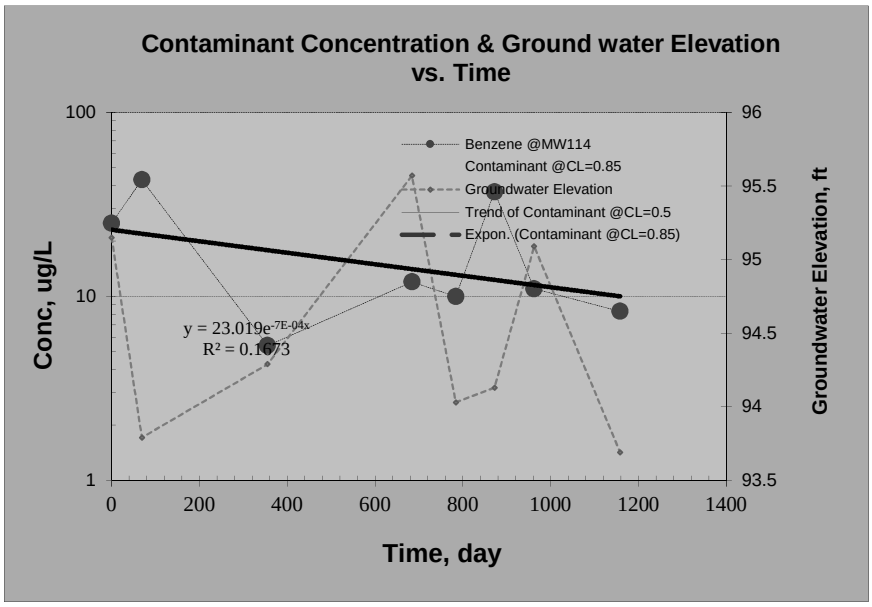
Module 2: Graphical Presentation of Historical Ground Water Data: (Well to Well Analysis)

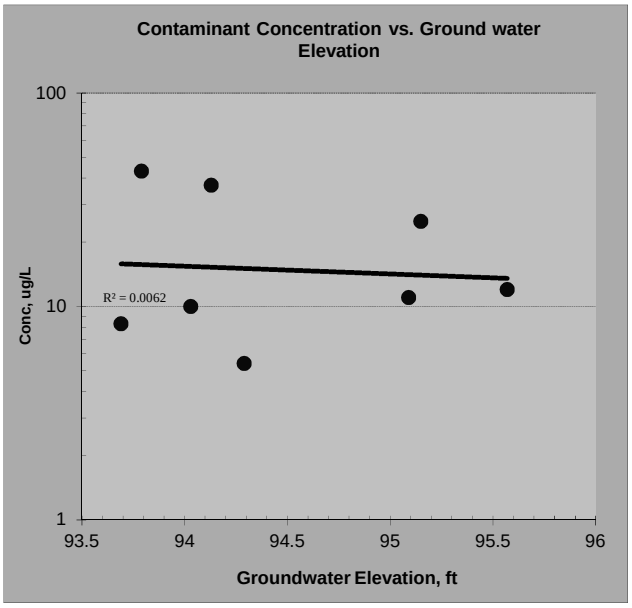
Site Name: *Smokey Point Retail Center*
Site Address: *Marysville, WA*
Additional Description: *0*
Hazardous Substance *Benzene*

1. Temporal Trend at a Well (Concentration vs. Time & Groundwater Elevation : well-to-well analysis)

Name of Sampling Well?	**MW114**	Confidence Level (Decision Criteria)?	85.0%

Confidence Level calculated with log-linear regression is?	*68.565%*		
Plume Stability?	Stable	; Decision Criteria is 85%.	
Slope: Point decay rate constant (k_{point}), yr^{-1}	*0.262* @50% C.L.;	*NA* @85% C.L.	
Half Life for k_{point}, yr	*2.641* @50% C.L.;	*NA* @85% C.L.	





2. Spatial and Temporal Trend along Overall Plume Length for Multiple Wells:

Plot #1:	Sampling date #1	**1-Jan-98**
Plot #2:	Sampling date #2	**6-Jun-98**
Plot #3:	Sampling date #3	**8-Nov-98**
Plot #4:	Sampling date #4	**10-May-99**
Plot #5:	Sampling date #5	
Plot #6:	Sampling date #6