

Circle K Station # 1461  
Release ID#: 1548  
Seattle



EA Engineering, Science, and Technology, Inc.

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21 November 2006  
61994.01 LN0036

Mr. Roger Nye  
Washington Department of Ecology  
Toxics Cleanup Program  
3190 – 160<sup>th</sup> Avenue Southeast  
Bellevue, Washington 98008-5452

RE: Circle K Station #1461  
Groundwater Monitoring Data Summary for October 2006  
Recommendations for Additional Cleanup Action Tests  
Work Order #17079, Contract Number: 30700

RECEIVED

NOV 27 2006

DEPT OF ECOLOGY

Dear Mr. Nye:

This letter provides a summary of the results from the groundwater sampling event conducted on 25 October 2006 at Circle K Station #1461, in the Montlake area of Seattle.

## 1.0 FIELD ACTIVITIES

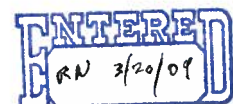
On 25 October 2006, EA Engineering, Science, and Technology, Inc. (EA) personnel gauged all monitoring wells at the site for the presence of free product and depth to water. Free product was measured in four wells at the following thicknesses: 0.17 ft in MW-4, 0.03 ft in MW-8, 0.06 ft in MW-9, and 0.30 ft in MW-13. Free product was not observed in wells MW-6, MW-7, MW-10, MW-11, MW-14, MW-15 or MW-16.

EA collected groundwater samples from MW-7 and MW-15 in accordance with the sampling process described in the Sampling and Analysis Plan (SAP)<sup>1</sup>, using a peristaltic pump and low-flow sampling procedures. Wells with measurable free product (MW-4, MW-8, MW-9, and MW-13) were not sampled. (The remaining wells are not included in quarterly sampling, per the SAP.)

In the monitoring wells sampled, the tubing intake was placed three to four feet from the bottom of the well during sampling. Groundwater was purged at a rate of 300-500 milliliters per minute. Groundwater quality parameters were measured every three minutes during purging until parameters stabilized. MW-15 was pumped dry during purging. The tubing intake was lowered and the well was allowed to recover before sampling. A duplicate sample was collected from MW-15 (CK-MW15D).

Table 1 summarizes monitoring well construction information, water level measurements, and field parameter measurements obtained after the readings stabilized. A site map showing monitoring well locations is attached as Figure 1.

<sup>1</sup> EA Engineering, Science, and Technology, Inc. 2006. Sampling and Analysis Plan for Amendment No. 2, Revision 1, Work Order #17079, Contract Number: 30700. March 8.



In accordance with the SAP, groundwater samples were submitted for laboratory analysis of gasoline range organics (GRO); benzene, toluene, ethylbenzene, and xylenes (BTEX); diesel range organics (DRO); and lube oil range organics (LRO). Samples were not analyzed for lead due to historical non-detect or near non-detect concentrations. Groundwater purged during monitoring well sampling was contained in a 55-gallon drum within the fenced enclosure at the rear of the Jays Cleaners/Mont's Market building.

## 2.0 GROUNDWATER MONITORING RESULTS

Laboratory reports for groundwater samples are attached. Analytical results are summarized in Table 2, along with prior sampling results. GRO, DRO, and benzene concentrations for the October 2006 sampling event are also shown on Figure 1. Analytical results for the October 2006 sampling event are generally consistent with previous results. Following is a discussion of the findings.

- Results for the sample collected from MW-7 were below the laboratory reporting limits for all analytes.
- In the sample from MW-15, GRO was detected at a concentration of 8,130 micrograms per liter ( $\mu\text{g/L}$ ), exceeding the MTCA Method A cleanup criteria of 800  $\mu\text{g/L}$ . DRO was reported at a concentration of 2,950  $\mu\text{g/L}$ , exceeding the MTCA Method A cleanup criteria of 500  $\mu\text{g/L}$ . However, the laboratory noted that the sample chromatographic pattern for the DRO analysis did not resemble the fuel standard used for quantitation. (During previous sampling rounds, the laboratory has noted that DRO detections were primarily due to overlap from a gasoline-range product.) Benzene was detected at a concentration of 12.9  $\mu\text{g/L}$ , exceeding the MTCA Method A cleanup criteria of 5  $\mu\text{g/L}$ . Toluene, ethylbenzene, and xylenes were detected in this sample at concentrations below the MTCA criteria.

Quality control (QC) samples were collected and analyzed according to the approved SAP. Results for the field QC samples (field duplicate and trip blank samples) were within acceptance limits. The results of laboratory QC samples (*i.e.*, matrix spikes, blanks, blank spikes, and duplicates) were within the laboratory's acceptance limits.

## 3.0 GROUNDWATER ELEVATION DATA

Groundwater elevation data and contour lines for 25 October 2006 are provided on Figure 2. Groundwater flow across the site area was generally to the southeast at a gradient of approximately 0.038 ft/ft.

The previous report on groundwater sampling activities<sup>2</sup> included a summary of groundwater elevations and flow directions observed during sampling events performed by EA (May 2005, February 2006, May 2006, and August 2006). Groundwater elevation data obtained in

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<sup>2</sup> EA. 2006. Circle K Station #1461, Groundwater Monitoring Data Summary for August 2006, Recommendations for Additional Cleanup Action Tests, Letter to Roger Nye 7 November 2006.

October 2006 were similar to those collected in August 2006, except that the water elevations decreased slightly (from 0.2 to 1.4 ft decrease in different wells). In one well, MW-11, the groundwater elevation increased 0.17 ft between August and October.

In general, the highest groundwater elevations were observed during the February 2006 sampling round and the lowest groundwater elevations were observed during October 2006. This is as expected based on seasonal rainfall variations. However, the degree of water level fluctuation in site monitoring wells was not consistent between wells; a discussion of this was provided in the August 2006 report. The average annual water level fluctuation for all monitoring wells during 2006 (including all four rounds of measurements) was 4.98 ft. However, the water level fluctuation in individual wells ranged from 1.47 ft (in well MW-6) to 8.88 ft (in well MW-11).

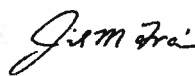
#### 4.0 DISCUSSION AND CONCLUSIONS

The free product thickness in site wells has slowly increased since the enhanced fluid recovery test conducted during June 2005, though no other strong trends are noticeable in the current data.

As presented in the August 2006 report of groundwater sampling activities<sup>2</sup>, a test of surfactant combined with multiphase recovery is recommended to determine the effectiveness of surfactant use at this site. It is recommended that the quarterly sampling be discontinued until the recommended test is conducted, since a full year of monitoring data is available to evaluate trends in groundwater flow and contaminant concentration, and no further information is needed prior to conducting the test.

Please feel free to contact me at (425) 451-7400 if you have any questions about the enclosed.

Sincerely,  
EA ENGINEERING, SCIENCE,  
AND TECHNOLOGY, INC.



Jil Frain, P.E.  
Project Manager  
[jfrain@eaest.com](mailto:jfrain@eaest.com)

#### Attachments:

- Figure 1 – Site Map with Groundwater Monitoring Results – Circle K Station #1461
- Table 1 – Monitoring Well Construction and Field Measurement Data – Circle K Station #1461
- Table 2 – Summary of Groundwater Analytical Data – Circle K Station #1461
- Appendix A – Purge and Sampling Forms
- Appendix B – Laboratory Reports

## Figures

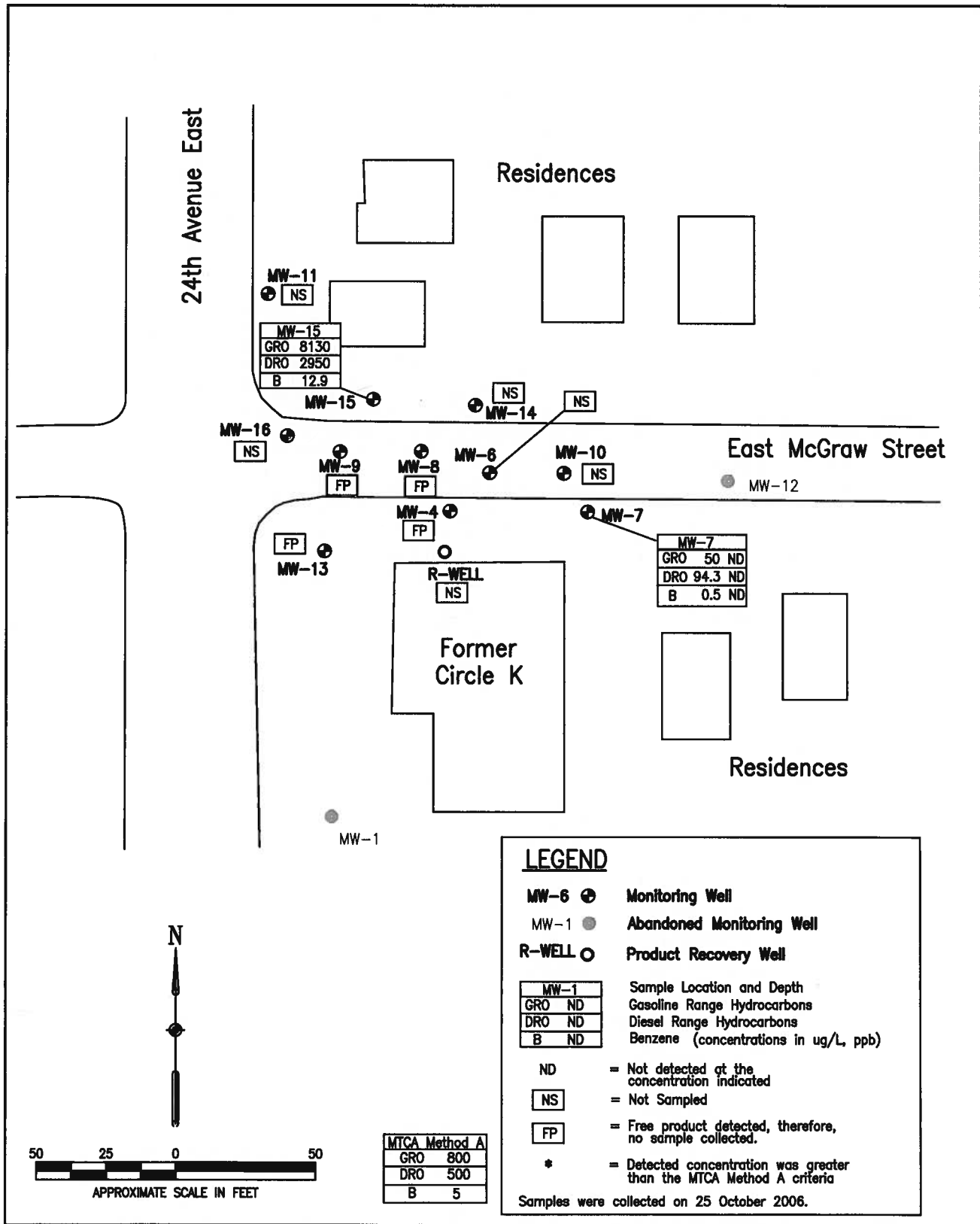
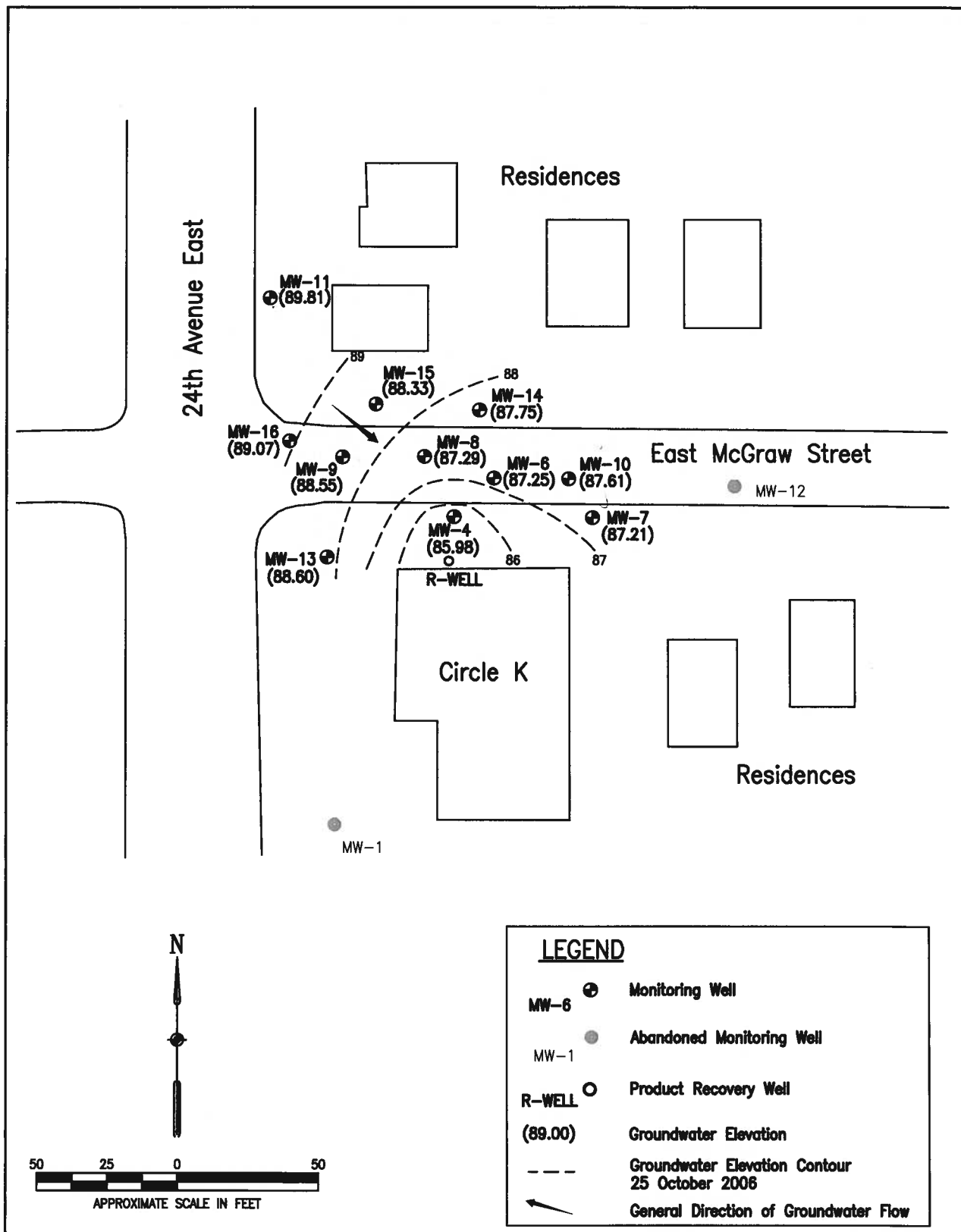


Figure 1. Site Map with Groundwater Monitoring Results -- Circle K Station #1461





I:\1994.01\_2006\_2007 Ecology LUST Sites\Circle K\GW report-Aug 2006\Fig2 evalions and contours-Oct 2006.dwg, 11/20/2006 11:36:23 AM, emarhofer

Figure 2. Groundwater Elevations and Contour Lines, 25 October 2006, Circle K Station #1461



## Tables

**TABLE 1. MONITORING WELL CONSTRUCTION AND FIELD MEASUREMENT DATA - CIRCLE K STATION #1461**

Well ID	Date Installed	Well Diameter (inches)	Reported Screen Depth (ft bgs)	Total Depth (ft btoc)	Top of Casing Elevation (ft)	Depth to Water 25-Oct-06 (ft btoc)	Depth to Product 25-Oct-06 (ft btoc)	Groundwater Elevation 25-Oct-06 (ft)
MW-4	9/12/1989	2	4 - 18.5	17.90	100.73	14.92	14.75	85.98
MW-6	10/2/1989	2	5 - 20	20.43	100.24	12.99	NA	87.25
MW-7	10/2/1989	2	5 - 20	20.49	99.75	12.54	NA	87.21
MW-8	10/3/1989	2	5 - 20	19.45	100.70	13.44	13.41	87.29
MW-9	10/3/1989	2	5 - 21	20.35	101.41	12.92	12.86	88.55
MW-10	10/3/1989	2	5 - 20	20.47	99.96	12.35	NA	87.61
MW-11	10/4/1989	2	5 - 20	20.31	100.89	11.08	NA	89.81
MW-12	10/4/1989	2	5 - 20	abandoned	abandoned	NA	NA	NA
MW-13	12/20/1989	2	4 - 19	18.81	102.19	13.89	13.59	88.60
MW-14	12/20/1989	2	4 - 19	18.87	100.40	12.65	NA	87.75
MW-15	12/21/1989	2	4 - 18.5	16.81	101.29	12.96	NA	88.33
MW-16	12/21/1989	2	4 - 19	18.94	101.15	12.08	NA	89.07

Well ID	Date Measured	Water Quality Parameters					
		pH	Conductivity (mS/cm)	Turbidity (NTUs)	Dissolved Oxygen (mg/L)	Temperature (°C)	Oxidation-Reduction Potential (mV)
MW-7	10/25/2006	6.43	0.207	2	0.26	15.3	170
MW-15	10/25/2006	5.98	0.204	264	0.10	15.0	-200

**NOTES:**

- °C = degrees Celsius.
- ft bgs = feet below ground surface.
- ft btoc = feet below top of casing.
- NA = Not applicable.
- NTUs = Nephelometric turbidity units.
- mS/cm = milliSiemens per centimeter.
- mg/L = milligrams per liter.
- mV = milliVolts



**TABLE 2. SUMMARY OF GROUNDWATER ANALYTICAL DATA  
CIRCLE K STATION #1461**

Well ID	Date Sampled	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (total) (ug/L)	GRO (ug/L)	DRO (ug/L)	LRO (ug/L)	Product Thickness	
MW-4	4/11/2001	7,370	28,000	2,680	17,100	117,000	NA	NA	0.03	
	6/16/2003	Not Sampled - Free product measured in well								0.09
	5/31/2005	Not Sampled - Free product measured in well								0.3
	6/23/2005	240	3,750	1,640	10,700	65,600	1,870 D-08	500 U	Trace?	
	2/14/2006	Not Sampled - Free product measured in well								0.02
	5/18/2006	Not Sampled - Free product measured in well								0.14
	8/3/2006	Not Sampled - Free product measured in well								0.12
	10/25/2006	Not Sampled - Free product measured in well								0.20
MW-6	4/11/2001	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	6/16/2003	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	2/14/2006	0.982	0.500 U	3.84	7.13	67.5	243 U	485 U	ND	
	5/18/2006	0.514	0.500 U	1.48	1.00 U	50.0 U	243 U	485 U	ND	
	8/3/2006	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	238 U	476 U	ND	
MW-7	4/11/2001	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	6/16/2003	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	10/25/2006	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	94.3 U	94.3 U	ND	
CK-MW8	4/11/2001	802	9,770	1,520	7,030	46,400	NA	NA	0.01	
	6/16/2003	Not Sampled - Free product measured in well								0.01
	6/23/2005	Not Sampled - Free product measured in well								Trace?
	2/14/2006	342	14,300	2,670	14,800	102,000	2,390 D-08	472 U	Trace?	
	5/18/2006	Not Sampled - Free product measured in well								0.05
	8/3/2006	Not Sampled - Free product measured in well								0.01
	10/25/2006	Not Sampled - Free product measured in well								0.03
MW-9	4/11/2001	420	2,310	1,500	7,350	35,400	NA	NA	0.01	
	6/16/2003	Not Sampled - Free product measured in well								0.02
	5/31/2005	Not Sampled - Free product measured in well								0.02
	6/23/2005	1,820	6,140	1,820	9,350	71,300	1,810 D-08	500 U	Trace?	
	2/14/2006	Not Sampled - Free product measured in well								0.02
	5/18/2006	535	2,300	1,730	8,390	52,200	2,530 D-08	485 U	Trace?	
	8/3/2006	Not Sampled - Free product measured in well								0.01
	10/25/2006	Not Sampled - Free product measured in well								0.06
MW-10	4/11/2001	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	6/18/2003	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	5/18/2006	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	236 U	472 U	ND	
MW-11	4/11/2001	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	6/16/2003	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	2/14/2006	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	240 U	481 U	ND	
MW-13	7/11/2003	Not Sampled - Free product measured in well								0.02
	5/31/2005	Not Sampled - Free product measured in well								0.01
	6/23/2005	8,560	16,800	1,920	12,900	115,000	3,720 D-08	500 U	ND	
	2/14/2006	2,270	6,660	1,530	14,100	74,700	3,010 D-08	472 U	Trace?	
	5/18/2006	7,260	14,700	1,810	15,500	109,000	4,650 D-08	481 U	Trace?	
	8/3/2006	Not Sampled - Free product measured in well								0.03
	10/25/2006	Not Sampled - Free product measured in well								0.30
MW-14	4/11/2001	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	6/16/2003	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	2/14/2006	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	243 U	485 U	Trace?	
MW-15	4/11/2001	58.4	310.0	526	2,920	23,800	NA	NA	ND	
	6/16/2003	6.22	83.3	12.6	199	3,150	NA	NA	ND	
	5/31/2005	1.26	0.500 U	2.60 I-06	3.39 I-06	878	NA	NA	ND	
	6/23/2005	2.01	3.18	2.48	6.34	950	749 D-08	500 U	ND	
	2/14/2006	0.500 U	0.500 U	0.500 U	1.00 U	137	552	472 U	ND	
	5/18/2006	0.791	1.69	0.816	5.82	381	236 U	472 U	ND	
	8/3/2006	2.92	6.86	6.03	41.9	1,350	520 D-06	481 U	ND	
10/25/2006	12.9	8.61	45.8	266	8,130	2,950	481 U	ND		
MW-16	4/11/2001	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	6/16/2003	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	NA	NA	ND	
	2/14/2006	0.500 U	0.500 U	0.500 U	1.00 U	50.0 U	236 U	472 U	Trace?	
MTCA Method A		5	1,000	700	1,000	800/1,000	500	500		

NOTES:

This table includes information for dates on which each well was sampled.

Sample results from 2001 and 2003 were provided by the Washington Department of Ecology.

Shaded cells indicate the results exceed the cleanup criteria.

MTCA Method A cleanup level for gasoline is 800 ug/L instead of 1,000 ug/L when benzene is present.

D-08 = Results in the diesel organics range are primarily due to overlap from a gasoline range product.

D-06 = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

I-06 = The analyte concentration may be artificially elevated due to coeluting compounds or components.

U = Not detected at or above the specified reporting limit.

DRO = Diesel range organics.

GRO = Gasoline range organics.

LRO = Lube-oil range organics.

ug/L = micrograms per liter.

mg/L = milligrams per liter

NA = not analyzed

ND = no free product detected in this well

Trace? = <0.01 ft free product in well

**Appendix A**  
**Purge and Sampling Forms**



# Ground Water Purge and Sampling Form

Well Identification	MW - 7	Site Location: Ecology - Circle K Station # 1461	Date: 10/25/06
Well Diameter (inches)	2"	Project Number: 6199401 6000 B	Personnel: MBB
Well Monument Locked and Good Condition?	<input checked="" type="checkbox"/>	Purge Method: <input checked="" type="checkbox"/> Low Flow <input type="checkbox"/> Conventional <input type="checkbox"/> None	
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WBC	Purge Equipment: <input checked="" type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Bailer <input type="checkbox"/> Grundfos submersible	
Well Casing Plug Locked and Good Condition?	yes	Sampling Equipment: <input checked="" type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Bailer <input type="checkbox"/> Grundfos submersible	
Initial Depth to Water (ft btoc)	125.4	Weather Conditions: <i>Overcast, Dry ~ 50°F</i>	
Well Total Depth (ft btoc)	203.39	Well Volume Calculation: 2"=.16, 4"=.64, 6"=1.44 gallons	

Time	11:52	11:55	1:58	12:01	12:04	12:07	12:10
Depth to Ground water (ft btoc)	—	13.96	—	14.68	14.85	—	15.09
Total Groundwater Purged (gallons)	—	—	—	—	—	—	3.5
Purge Rate (gpm, ml/min, other)	500	—	450	—	—	—	—
pH	6.03	5.99	6.19	6.28	6.37	6.42	6.43
Conductivity (mS/cm)	215	217	214	206	206	205	207
Turbidity (NTU)	17.2	18.2	47	5	6	4	2
Dissolved Oxygen (mg/L)	1.75	1.95	3.62	1.85	0.79	0.30	0.26
Temperature (°C)	14.7	15.1	15.4	15.5	15.4	15.3	15.3
ORP/eH (mV)	175	180	183	181	176	172	170
Color of Purged Water (gray, brown, red, clear)	cloudy	—	—	clear	—	—	—

Sample Identification: CK-MW7	# of Bottles
Time Sampled: 12:15	Analysis
Purge water disposed To: Drum Onsite	<input checked="" type="checkbox"/> NWTPH-Gasoline <input checked="" type="checkbox"/> BTEX (8021B) <input checked="" type="checkbox"/> NWTPH-Dx
Comments: <i>Pushed dedicated tubing tubing pulled 4 1/2 ft bottom of well.</i>	

CK MW 7 12:15 x 7  
 Drum Onsite



# Ground Water Purge and Sampling Form

Well Identification	M10	Site Location: Ecology - Circle K Station # 1461	Date: 10/25/06
Well Diameter (inches)	2"	Project Number: 6199401 6000 B	Personnel: MBB
Well Monument <u>Locked</u> and Good Condition?	yes	Purge Method: <input checked="" type="checkbox"/> Low Flow	<input type="checkbox"/> Conventional
Inside Well Head and Outside Well Casing (D=dry), (WAC=Water above Casing), WBC=Water Below Casing)	WAC	Purge Equipment: <input checked="" type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Bailer
Well Casing Plug <u>Locked</u> and Good Condition?	yes	Sampling Equipment: <input checked="" type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Bailer
Initial Depth to Water (ft btoc)	12.46	Weather Conditions: Overcast, dry ~50°F	
Well Total Depth (ft btoc)	16.81	Well Volume Calculation: 2"= .16, 4"=.64, 6"=1.44 gallons	
Time			
Depth to Ground water (ft btoc)	12.58	13.01	13.04
Total Groundwater Purged (gallons)	450	14.09	14.29
Purge Rate (gpm, ml/min, other)	5.89	5.91	5.92
pH	7.99	7.93	7.88
Conductivity (mS/cm)	6.3	5.7	5.33
Turbidity (NTU)	0.04	0.04	0.04
Dissolved Oxygen (mg/L)	15.1	15.1	15.1
Temperature (°C)	-71	-75	-88
ORP/eH (mV)	clear	clear	clear
Color of Purged Water (gray, brown, red, clear)			
Sample Identification: CK-MW 15	(1345)		
Time Sampled:	CK-MW 15 D (1350)		
Purge water disposed To: Drum Onsite			

Analysis:  NWTPH-Gasoline  
 BTEX (8021B)  
 NWTPH-Dx

# of Bottles: 4

Comments: Tubing pulled up 1' off bottom - surface  
 \* Slowed flow, lowered tubing to 1' off bottom  
 \* Well went dry, wait for recharge + sample.

## **Appendix B**

### **Laboratory Reports**

November 16, 2006

Jil Frain  
EA Engineering, Science and Technology  
12011 NE 1st Street, Suite 100  
Bellevue, WA/USA 98005

RE: Circle K

Enclosed are the results of analyses for samples received by the laboratory on 10/27/06 10:16.  
The following list is a summary of the Work Orders contained in this report, generated on 11/16/06  
11:02.

If you have any questions concerning this report, please feel free to contact me.

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<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
BPJ0629	Circle K	61994.01

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TestAmerica - Seattle, WA

*Kate Haney*

Kate Haney, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.*



<b>EA Engineering, Science and Technology</b> 12011 NE 1st Street, Suite 100 Bellevue, WA/USA 98005	Project Name:	<b>Circle K</b>	Report Created:
	Project Number:	61994.01	11/16/06 11:02
	Project Manager:	Jil Frain	

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
CK-TB-GW	BPJ0629-01	Water	10/25/06 12:00	10/27/06 10:16
CK-MW7	BPJ0629-02	Water	10/25/06 12:15	10/27/06 10:16
CK-MW15	BPJ0629-03	Water	10/25/06 13:45	10/27/06 10:16
CK-MW15D	BPJ0629-04	Water	10/25/06 13:50	10/27/06 10:16

TestAmerica - Seattle, WA

*Kate Haney*

Kate Haney, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.*



**EA Engineering, Science and Technology**

12011 NE 1st Street, Suite 100  
Bellevue, WA/USA 98005

Project Name: **Circle K**  
Project Number: 61994.01  
Project Manager: Jil Frain

Report Created:  
11/16/06 11:02

**Analytical Case Narrative**  
TestAmerica - Seattle, WA

**BPJ0629**

**SAMPLE RECIEPT**

The samples were received October 27th, 2006 by TestAmerica - Seattle. The temperature of the samples at the time of receipt was 4.9 degrees Celsius.

**PREPARATIONS AND ANALYSIS**

**TestAmerica - Seattle**

Gasoline Hydrocarbons by NWTPH-Gx and BTEX by EPA Method 8021B: No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of the report.

**TestAmerica - Nashville**

Extractable Petroleum Hydrocarbons: The detections in the samples for diesel are primarily due to overlap from a gasoline range product. There was no MS/MSD analyzed due to insufficient sample volume. No additional anomalies, discrepancies, or issues were associated with sample preparation, analysis and quality control other than those already qualified in the data and described in the Notes and Definitions page at the end of the report.

TestAmerica - Seattle, WA



Kate Haney, Project Manager

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.*





**EA Engineering, Science and Technology**

12011 NE 1st Street, Suite 100  
 Bellevue, WA/USA 98005

Project Name: **Circle K**  
 Project Number: 61994.01  
 Project Manager: Jil Frain

Report Created:  
 11/16/06 11:02

**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
 TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>BPJ0629-01 (CK-TB-GW)</b>		<b>Water</b>			<b>Sampled: 10/25/06 12:00</b>					
Gasoline Range Hydrocarbons	NWTPH-Gx/802 1B	ND	—	50.0	ug/l	1x	6K03024	11/03/06 12:17	11/03/06 21:48	
Benzene	"	ND	—	0.500	"	"	"	"	"	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (FID)			88.0%		58 - 144 %	"				"
4-BFB (PID)			98.8%		68 - 140 %	"				"
<b>BPJ0629-02 (CK-MW7)</b>		<b>Water</b>			<b>Sampled: 10/25/06 12:15</b>					
Gasoline Range Hydrocarbons	NWTPH-Gx/802 1B	ND	—	50.0	ug/l	1x	6K03024	11/03/06 12:17	11/03/06 16:42	
Benzene	"	ND	—	0.500	"	"	"	"	"	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (FID)			97.2%		58 - 144 %	"				"
4-BFB (PID)			98.7%		68 - 140 %	"				"
<b>BPJ0629-03 (CK-MW15)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:45</b>					
Benzene	NWTPH-Gx/802 1B	12.9	—	0.500	ug/l	1x	6K03024	11/03/06 12:17	11/03/06 23:27	
Toluene	"	8.61	—	0.500	"	"	"	"	"	
Ethylbenzene	"	45.8	—	0.500	"	"	"	"	"	
Xylenes (total)	"	266	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)			79.5%		68 - 140 %	"				"
<b>BPJ0629-03RE1 (CK-MW15)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:45</b>					
Gasoline Range Hydrocarbons	NWTPH-Gx/802 1B	8130	—	250	ug/l	5x	6K04008	11/04/06 11:06	11/04/06 15:54	
Surrogate(s): 4-BFB (FID)			103%		58 - 144 %	1x				"
<b>BPJ0629-04 (CK-MW15D)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:50</b>					
Benzene	NWTPH-Gx/802 1B	13.3	—	0.500	ug/l	1x	6K03024	11/03/06 12:17	11/04/06 00:02	
Toluene	"	7.69	—	0.500	"	"	"	"	"	
Ethylbenzene	"	26.0	—	0.500	"	"	"	"	"	
Xylenes (total)	"	141	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (FID)			160%		58 - 144 %	"				SR-2

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*Kate Haney*

Kate Haney, Project Manager

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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B**  
 TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>BPJ0629-04 (CK-MW15D)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:50</b>					
4-BFB (PID)		88.3%			68 - 140 %	1x			11/04/06 00:02	
<b>BPJ0629-04RE1 (CK-MW15D)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:50</b>					
<b>Gasoline Range Hydrocarbons</b>	NWTPH-Gx/802 1B	<b>7810</b>	---	250	ug/l	5x	6K04008	11/04/06 11:06	11/04/06 16:26	
<b>Benzene</b>	"	<b>16.1</b>	---	2.50	"	"	"	"	"	
<b>Toluene</b>	"	<b>13.2</b>	---	2.50	"	"	"	"	"	
<b>Ethylbenzene</b>	"	<b>62.4</b>	---	2.50	"	"	"	"	"	
<b>Xylenes (total)</b>	"	<b>392</b>	---	5.00	"	"	"	"	"	
<i>Surrogate(s):</i> 4-BFB (FID)			102%		58 - 144 %	1x				"
4-BFB (PID)			85.7%		68 - 140 %	"				"

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**Extractable Petroleum Hydrocarbons**  
TestAmerica - Nashville, TN

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
<b>BPJ0629-02 (CK-MW7)</b>		<b>Water</b>			<b>Sampled: 10/25/06 12:15</b>					
Diesel	NWTFPH-Dx	ND	---	94.3	ug/L	1x	6106320	11/01/06 08:46	11/01/06 19:42	
Motor Oil	"	ND	---	94.3	"	"	"	"	"	
<i>Surrogate(s): o-Terphenyl</i>			88%		51 - 142 %	"				
<b>BPJ0629-03RE1 (CK-MW15)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:45</b>					
Diesel	NWTFPH-Dx	2950	---	481	ug/L	5x	6106320	11/01/06 08:46	11/02/06 08:09	
Motor Oil	"	ND	---	481	"	"	"	"	"	<b>RL1</b>
<i>Surrogate(s): o-Terphenyl</i>			NR		51 - 142 %	"				<b>Z3</b>
<b>BPJ0629-04RE1 (CK-MW15D)</b>		<b>Water</b>			<b>Sampled: 10/25/06 13:50</b>					
Diesel	NWTFPH-Dx	3290	---	194	ug/L	2x	6106320	11/01/06 08:46	11/02/06 08:28	
Motor Oil	"	ND	---	194	"	"	"	"	"	<b>RL1</b>
<i>Surrogate(s): o-Terphenyl</i>			72%		51 - 142 %	"				

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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results**  
 TestAmerica - Seattle, WA

**QC Batch: 6K03024**      **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL <sup>A</sup>	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
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**Blank (6K03024-BLK1)** Extracted: 11/03/06 12:17

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	11/03/06 13:33	
Benzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>	<i>88.7%</i>	<i>Limits: 58-144%</i>										<i>11/03/06 13:33</i>
<i>4-BFB (PID)</i>		<i>98.7%</i>		<i>68-140%</i>										<i>"</i>

**LCS (6K03024-BS1)** Extracted: 11/03/06 12:17

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	891	---	50.0	ug/l	1x	--	1000	89.1%	(80-120)	--	--	11/03/06 14:05	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>	<i>93.5%</i>	<i>Limits: 58-144%</i>										<i>11/03/06 14:05</i>

**LCS (6K03024-BS2)** Extracted: 11/03/06 12:17

Benzene	NWTPH-Gx/ 8021B	27.9	---	0.500	ug/l	1x	--	30.0	93.0%	(80-120)	--	--	11/03/06 14:38	
Toluene	"	27.5	---	0.500	"	"	--	"	91.7%	"	--	--	"	
Ethylbenzene	"	27.9	---	0.500	"	"	--	"	93.0%	"	--	--	"	
Xylenes (total)	"	82.6	---	1.00	"	"	--	90.0	91.8%	"	--	--	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>	<i>87.8%</i>	<i>Limits: 58-144%</i>										<i>11/03/06 14:38</i>
<i>4-BFB (PID)</i>		<i>98.0%</i>		<i>68-140%</i>										<i>"</i>

**Duplicate (6K03024-DUP1)** QC Source: BPJ0629-02 Extracted: 11/03/06 12:17

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	ND	---	50.0	ug/l	1x	ND	--	--	--	NR	(25)	11/03/06 17:14	
Benzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>	<i>88.8%</i>	<i>Limits: 58-144%</i>										<i>11/03/06 17:14</i>
<i>4-BFB (PID)</i>		<i>96.5%</i>		<i>68-140%</i>										<i>"</i>

**Duplicate (6K03024-DUP2)** QC Source: BPJ0629-04 Extracted: 11/03/06 12:17

Benzene	NWTPH-Gx/ 8021B	12.8	---	0.500	ug/l	1x	13.3	--	--	--	3.83%	(25)	11/04/06 00:33	
Toluene	"	7.69	---	0.500	"	"	7.69	--	--	--	0.00%	"	"	
Ethylbenzene	"	26.1	---	0.500	"	"	26.0	--	--	--	0.384%	"	"	
Xylenes (total)	"	139	---	1.00	"	"	141	--	--	--	1.43%	"	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery:</i>	<i>91.5%</i>	<i>Limits: 68-140%</i>										<i>11/04/06 00:33</i>

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Kate Haney, Project Manager

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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results**  
 TestAmerica - Seattle, WA

**QC Batch: 6K03024**      **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Matrix Spike (6K03024-MS1)</b>					<b>QC Source: BPJ0628-05RE1</b>			<b>Extracted: 11/03/06 12:17</b>						
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	15000	---	250	ug/l	5x	9840	5000	103%	(75-131)	--	--	11/03/06 18:59	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 114%</i>		<i>Limits: 58-144%</i>			<i>1x</i>		<i>11/03/06 18:59</i>					
<b>Matrix Spike (6K03024-MS2)</b>					<b>QC Source: BPJ0609-01</b>			<b>Extracted: 11/03/06 12:17</b>						
Benzene	NWTPH-Gx/ 8021B	855	---	10.0	ug/l	20x	255	600	100%	(46-130)	--	--	11/04/06 02:16	
Toluene	"	944	---	10.0	"	"	357	"	97.8%	(60-124)	--	--	"	
Ethylbenzene	"	668	---	10.0	"	"	60.9	"	101%	(56-141)	--	--	"	
Xylenes (total)	"	2090	---	20.0	"	"	323	1800	98.2%	(66-132)	--	--	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 101%</i>		<i>Limits: 68-140%</i>			<i>1x</i>		<i>11/04/06 02:16</i>					
<b>Matrix Spike Dup (6K03024-MSD1)</b>					<b>QC Source: BPJ0628-05RE1</b>			<b>Extracted: 11/03/06 12:17</b>						
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	15500	---	250	ug/l	5x	9840	5000	113%	(75-131)	3.28%	(25)	11/03/06 19:34	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 114%</i>		<i>Limits: 58-144%</i>			<i>1x</i>		<i>11/03/06 19:34</i>					
<b>Matrix Spike Dup (6K03024-MSD2)</b>					<b>QC Source: BPJ0609-01</b>			<b>Extracted: 11/03/06 12:17</b>						
Benzene	NWTPH-Gx/ 8021B	854	---	10.0	ug/l	20x	255	600	99.8%	(46-130)	0.117%	(40)	11/04/06 02:51	
Toluene	"	942	---	10.0	"	"	357	"	97.5%	(60-124)	0.212%	"	"	
Ethylbenzene	"	667	---	10.0	"	"	60.9	"	101%	(56-141)	0.150%	"	"	
Xylenes (total)	"	2080	---	20.0	"	"	323	1800	97.6%	(66-132)	0.480%	"	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 100%</i>		<i>Limits: 68-140%</i>			<i>1x</i>		<i>11/04/06 02:51</i>					

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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results**  
 TestAmerica - Seattle, WA

**QC Batch: 6K04008**      **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL <sup>a</sup>	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes		
<b>Blank (6K04008-BLK1)</b>													<b>Extracted: 11/04/06 11:06</b>			
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	ND	--	50.0	ug/l	1x	--	--	--	--	--	--	11/04/06 13:04			
Benzene	"	ND	--	0.500	"	"	--	--	--	--	--	--	"			
Toluene	"	ND	--	0.500	"	"	--	--	--	--	--	--	"			
Ethylbenzene	"	ND	--	0.500	"	"	--	--	--	--	--	--	"			
Xylenes (total)	"	ND	--	1.00	"	"	--	--	--	--	--	--	"			
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 87.0%</i>		<i>Limits: 58-144%</i>										11/04/06 13:04		
<i>4-BFB (PID)</i>		<i>97.3%</i>		<i>68-140%</i>										"		
<b>LCS (6K04008-BS1)</b>													<b>Extracted: 11/04/06 11:06</b>			
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	905	--	50.0	ug/l	1x	--	1000	90.5%	(80-120)	--	--	11/04/06 13:35			
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 95.5%</i>		<i>Limits: 58-144%</i>										11/04/06 13:35		
<b>LCS (6K04008-BS2)</b>													<b>Extracted: 11/04/06 11:06</b>			
Benzene	NWTPH-Gx/ 8021B	28.4	--	0.500	ug/l	1x	--	30.0	94.7%	(80-120)	--	--	11/04/06 14:07			
Toluene	"	28.2	--	0.500	"	"	--	"	94.0%	"	--	--	"			
Ethylbenzene	"	28.4	--	0.500	"	"	--	"	94.7%	"	--	--	"			
Xylenes (total)	"	83.8	--	1.00	"	"	--	90.0	93.1%	"	--	--	"			
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 96.8%</i>		<i>Limits: 68-140%</i>										11/04/06 14:07		
<b>LCS Dup (6K04008-BSD1)</b>													<b>Extracted: 11/04/06 11:06</b>			
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	847	--	50.0	ug/l	1x	--	1000	84.7%	(80-120)	6.62%	(25)	11/04/06 19:50			
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 92.7%</i>		<i>Limits: 58-144%</i>										11/04/06 19:50		
<b>LCS Dup (6K04008-BSD2)</b>													<b>Extracted: 11/04/06 11:06</b>			
Benzene	NWTPH-Gx/ 8021B	26.9	--	0.500	ug/l	1x	--	30.0	89.7%	(80-120)	5.42%	(25)	11/04/06 20:26			
Toluene	"	26.5	--	0.500	"	"	--	"	88.3%	"	6.22%	"	"			
Ethylbenzene	"	26.8	--	0.500	"	"	--	"	89.3%	"	5.80%	"	"			
Xylenes (total)	"	79.8	--	1.00	"	"	--	90.0	88.7%	"	4.89%	"	"			
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 97.8%</i>		<i>Limits: 68-140%</i>										11/04/06 20:26		
<b>Duplicate (6K04008-DUP1)</b>													<b>QC Source: BPK0091-03</b>		<b>Extracted: 11/04/06 11:06</b>	
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	ND	--	50.0	ug/l	1x	ND	--	--	--	NR	(25)	11/04/06 15:22			
Benzene	"	ND	--	0.500	"	"	ND	--	--	--	NR	"	"			
Toluene	"	ND	--	0.500	"	"	ND	--	--	--	NR	"	"			
Ethylbenzene	"	ND	--	0.500	"	"	ND	--	--	--	NR	"	"			
Xylenes (total)	"	ND	--	1.00	"	"	ND	--	--	--	NR	"	"			
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 88.3%</i>		<i>Limits: 58-144%</i>										11/04/06 15:22		

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*Kate Haney*  
 Kate Haney, Project Manager

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**Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results**  
 TestAmerica - Seattle, WA

**QC Batch: 6K04008**      **Water Preparation Method: EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Duplicate (6K04008-DUP1)</b>			<b>QC Source: BPK0091-03</b>				<b>Extracted: 11/04/06 11:06</b>							
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 97.8%</i>			<i>Limits: 68-140% 1x</i>						<i>11/04/06 15:22</i>			
<b>Matrix Spike (6K04008-MS1)</b>			<b>QC Source: BPJ0629-04RE1</b>				<b>Extracted: 11/04/06 11:06</b>							
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	12800	---	250	ug/l	5x	7810	5000	99.8%	(75-131)	--	--	11/04/06 17:02	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 110%</i>			<i>Limits: 58-144% 1x</i>						<i>11/04/06 17:02</i>			
<b>Matrix Spike (6K04008-MS2)</b>			<b>QC Source: BPJ0629-04RE1</b>				<b>Extracted: 11/04/06 11:06</b>							
Benzene	NWTPH-Gx/ 8021B	146	---	2.50	ug/l	5x	16.1	150	86.6%	(46-130)	--	--	11/04/06 17:36	
Toluene	"	139	---	2.50	"	"	13.2	"	83.9%	(60-124)	--	--	"	
Ethylbenzene	"	189	---	2.50	"	"	62.4	"	84.4%	(56-141)	--	--	"	
Xylenes (total)	"	754	---	5.00	"	"	392	450	80.4%	(66-132)	--	--	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 86.2%</i>			<i>Limits: 68-140% 1x</i>						<i>11/04/06 17:36</i>			

TestAmerica - Seattle, WA

*Kate Haney*

Kate Haney, Project Manager

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<b>EA Engineering, Science and Technology</b> 12011 NE 1st Street, Suite 100 Bellevue, WA/USA 98005	Project Name: <b>Circle K</b> Project Number: 61994.01 Project Manager: Jil Frain	Report Created: 11/16/06 11:02
---	---	-----------------------------------

**Extractable Petroleum Hydrocarbons - Laboratory Quality Control Results**  
 TestAmerica - Nashville, TN

QC Batch: 6106320      Water Preparation Method: EPA 3510C

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
<b>Blank (6106320-BLK1)</b>										Extracted: 11/01/06 08:46				
Diesel	NWTPH-Dx	ND	---	100	ug/L	1x	--	--	--	--	--	--	11/01/06 19:03	
Motor Oil	"	ND	---	100	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): o-Terphenyl</i>		<i>Recovery: 84%</i>		<i>Limits: 51-142%</i>		"						11/01/06 19:03		
<b>LCS (6106320-BS1)</b>										Extracted: 11/01/06 08:46				
Diesel	NWTPH-Dx	944	---	100	ug/L	1x	--	1000	94%	(56-116)	--	--	11/01/06 19:23	
<i>Surrogate(s): o-Terphenyl</i>		<i>Recovery: 86%</i>		<i>Limits: 51-142%</i>		"						11/01/06 19:23		

TestAmerica - Seattle, WA

*Kate Haney*

Kate Haney, Project Manager

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**EA Engineering, Science and Technology**

12011 NE 1st Street, Suite 100  
Bellevue, WA/USA 98005

Project Name: **Circle K**

Project Number: 61994.01

Project Manager: Jil Frain

Report Created:

11/16/06 11:02

## Notes and Definitions

### Report Specific Notes:

- RL1 - Reporting limit raised due to sample matrix effects.
- SR-2 - Surrogate recovery was above the acceptance limits.
- Z3 - The sample required a dilution due to the nature of the sample matrix. Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

### Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL\* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B. \*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*. Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

TestAmerica - Seattle, WA



Kate Haney, Project Manager

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# TestAmerica

ANALYTICAL TESTING CORPORATION

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425-420-9200 FAX 420-9210  
 509-924-9200 FAX 924-9290  
 503-906-9200 FAX 906-9210  
 907-563-9200 FAX 563-9210

## CHAIN OF CUSTODY REPORT

Work Order #: **61994.01**

CLIENT: WA Dept of Ecology  
 REPORT TO: EA Engineering - Jill Frain  
 ADDRESS: 12011 NE 1st Street, Ste 101  
 Bellevue, WA 98005  
 PHONE: 425-451-7400 FAX: 7800  
 PROJECT NAME: 61994.01  
 PROJECT NUMBER: Circle K

INVOICE TO:  
 WA Dept of Ecology - NWR Office.  
 Attn: Roger Nye  
 390 160th Ave SE  
 Bellevue, WA  
 P.O. NUMBER: Field Order #: PF 313180

TURNAROUND REQUEST  
 in Business Days\*  
 Organic & Inorganic Analyses  
 Petroleum Hydrocarbon Analyses  
 10 7 4 3 2 1 <1  
 19 5 4 3 2 1 <1  
 X

SAMPLED BY:	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	REQUESTED ANALYSES		OTHER Specify:
			HCL	HCL	
MJB	CK-TB-6W	10/25/06	X	X	
	CK-MW7	10/25/06 1215	X	X	
	CK-MW15	10/25/06 1345	X	X	
	CK-MW15D	10/25/06 1350	X	X	

MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA W/O ID
W	3		01
W	5		02
W	5		03
W	5		04

RECEIVED BY:	DATE:	TIME:	FRM:	DATE:	TIME:	FRM:
Mark Blomster	10/27/06		EA Eng.	10/27/06		EA Eng.
Macie Blomster	10/16			10/16		
Tommy Karst			Blankinship			Blankinship

RECEIVED BY: Mark Blomster  
 PRINT NAME: Macie Blomster  
 RELEASED BY: Mark Blomster  
 PRINT NAME: Macie Blomster  
 ADDITIONAL REMARKS:

Note: By relinquishing samples to TestAmerica, client agrees to pay for the services requested on this chain of custody form and for any additional analyses performed on this project. Payment for services is due within 30 days from the date of invoice unless otherwise contracted. Sample(s) will be disposed of after 30 days unless otherwise contracted.