

May 4, 2012

Tim Love  
Operations Manager  
Carson Oil Company  
P.O. Box 10948  
Portland, OR 97296-0948

Re: Carson – Goldendale Fuel Spill

Tim,

The site is located at 808 South Columbus Avenue in the town of Goldendale, WA. The site has operated as a bulk fuel supplier since 1927 and is paved mostly with gravel.

Early on the morning of April 29, there was a fuel spill at the site. According to reports, up to 970 gallons of unleaded gasoline may have been spilled due to overfilling of one of the above ground tanks. An effort was made to clean up the spill immediately, but there is no record of how much of the fuel percolated into the ground. This report documents the initial response and removal of the fresh gasoline spill. At this time, there is still weathered gasoline and diesel contamination remaining at the site. Figure 1 shows the site location. Figure 2 shows the site layout.

On March 1, 2012, a series of borings were drilled around the tank area to determine how widespread the soil contamination was. A total of 14 boring locations were drilled and sampled. In addition, 12 grab samples were collected from depths ranging from 6-inches to 62 inches below grade from within the bermed area beneath the tank that was overfilled.

Volcanic bedrock was found throughout the site at depths ranging from 7-10 feet below grade also. The water was sitting on top of the bedrock in most of the borings, however no water was found in three of them. It appears that there are preferential pathways that run on top of the bedrock in areas where it is lower. The main soil type at the site is silt to clayey silt, but there were a few borings that detected a sand layer immediately above the basalt bedrock. Boring locations are found on Figure 2. Depth to bedrock in the







**Figure 1**  
**Site Location**



N45°49'1.92"

Goldendale, WA 98620



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45-4501-02, N 126-49-5620, W 98620

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**Figure 2**  
**Soil Boring Locations,**  
**Showing Bedrock Depths and**  
**Water levels in open Borings**



borings is shown as Table 1. Boring logs for the soil sample location are included in Appendix A.

Soil from the immediate area within the berm was also removed and stored on site for later disposal. During the initial excavation, ground water was detected in the pit at approximately 5-6 feet below grade. Water was pumped from the excavation and stored on site in a 19,000 gallon tank until it could be sampled and disposed of properly.

Because these samples were being collected to determine the lateral extent of the fresh gasoline spill, and not for compliance, soil and water samples that were collected from the excavation were analyzed for gasoline and diesel range hydrocarbons as well as BTEX. Tables 2, 3, and 4 show the sample results. A few of the higher concentration samples were later analyzed for TCLP Lead to determine the proper disposal methodology also.

Table 1  
Approximate Depth to bedrock

Location	Depth to bedrock (ft)	Wet?
B-1	7.2	Yes
B-2	7.5	Yes
B-3	7	No
B-4	8	Yes
B-5	9	No
B-6	9	Yes
B-7	8	No
B-8	9	Yes
B-9	8	Yes
B-10	9	Yes
B-11	9	Yes
B-12	9.5	Yes
B-13	10	Yes
B-14	7.5	Yes

Table 2  
Soil inside berm area (mg/kg)

Location	Gx	Dx
S- Center 0-6	14200	609
N-Center 0-6	18300	2560
NW 0-6	15600	686
NE 0-6	96.5	675
SE 0-6	34000	1800
SW 0-6	13600	165
S-Center 54"	ND	25.6
S-Center 56"	833	694
NW-36"	4060	3320
NW - 62"	1170	367
N- Center - 58"	2100	2020
N-Center 36"	1120	118
Exc pit Water*	44700 (ug/l)	16100 (mg/l)

\* Also have PAHs for exc pit water



Table 3 Boring Samples  
Soil Samples (mg/kg)

location	Gx	Dx	Benz	Tol	Ethyl	Xylene
1-5	ND		ND	0.316	ND	ND
2-5	ND		ND	ND	ND	ND
2-7	256		ND	0.543	1.12	2.62
3-5	ND		ND	ND	ND	ND
3-7	ND		ND	ND	ND	ND
4-5	19.9		ND	ND	ND	ND
4-7	ND		ND	ND	ND	ND
5-5	ND		ND	ND	ND	ND
5-8	ND	160	ND	ND	ND	ND
6-5	1330		29.5	155	36.3	176
6-8	36.1	1050	ND	ND	ND	ND
7-5	1380	755	ND	ND	2.52	0.946
7-8	5840	1470	ND	1.14	6.76	3.22
8-5	ND		ND	ND	ND	ND
8-8	ND		ND	ND	ND	ND
9-5	ND		ND	ND	ND	ND
9-7	ND	399	ND	ND	ND	ND
10-5	ND	ND	0.311	0.633	ND	ND
10-9	ND		ND	ND	ND	ND
11-5		909				
11-7	1090	384	0.414	2.89	4.84	6.96
12-5		215				
12-8	36.7	99.9	ND	ND	0.440	ND
13-5		113				
13-9	222	41.3	0.103	2.36	5.35	7.75
14-5		121				
14-7	752	360	0.202	4.31	9.55	13.1

Table 4  
Boring Water Samples`

Location	Gx (ug/l)	Dx (mg/l)	Benz (ug/l)	Tol (ug/l)	Ethyl (ug/l)	Xylene (ug/l)
B-1-W	227	ND	0.485	1.17	1.45	1.99
B-2-W	10500		20.7	14.0	615	961
B-4-W	2770	7.96	11.5	9.58	48.9	88.6
B-6-W	127000	8.53	11500	40000	2430	11300
B-8-W	4240	1.24	43.6	5.34	45.9	45.5
B-9-W	288	2.08	2.07	3.26	2.17	2.75
B-10-W		20.7				
B-11-W		294				
B-12-W		169				
B-13-W		36.5				
B-14-W		213				

Complete analytical results are found in Attachment B.



On April 13, 2012, the stockpiled soils from the initial excavation were removed from the site to the Columbia Ridge landfill

### **Monitoring Well Installation**

Four monitoring wells were installed on April 4, 2012. The wells were installed using push probe technology and all had 5 feet of prepacked 0.010 slot screen. Prior to installing the wells, a proposal was given to the Department of Ecology with locations and sampling methodology for the work. Unfortunately, since the site is not in the Voluntary Cleanup Program, Ecology spill response or Toxic Cleanup Program personnel could not comment on the locations.

Without any input from Ecology, the wells were installed using the following rationale:

MW-1 was placed as close as possible to the SE corner of the site. This was done to get background water from the area of the site that was assumed to be least likely to have been contaminated by site activities over the years.

MW-2 was placed in the north central portion of the site. This well was be used to see if the plume is moving to the northwest.

MW-3 was placed between boring B-6 and the fill stand. This well location was chosen because the boring program at this site seems to indicate that there is a preferential pathway for ground water flow in the B-6 area.

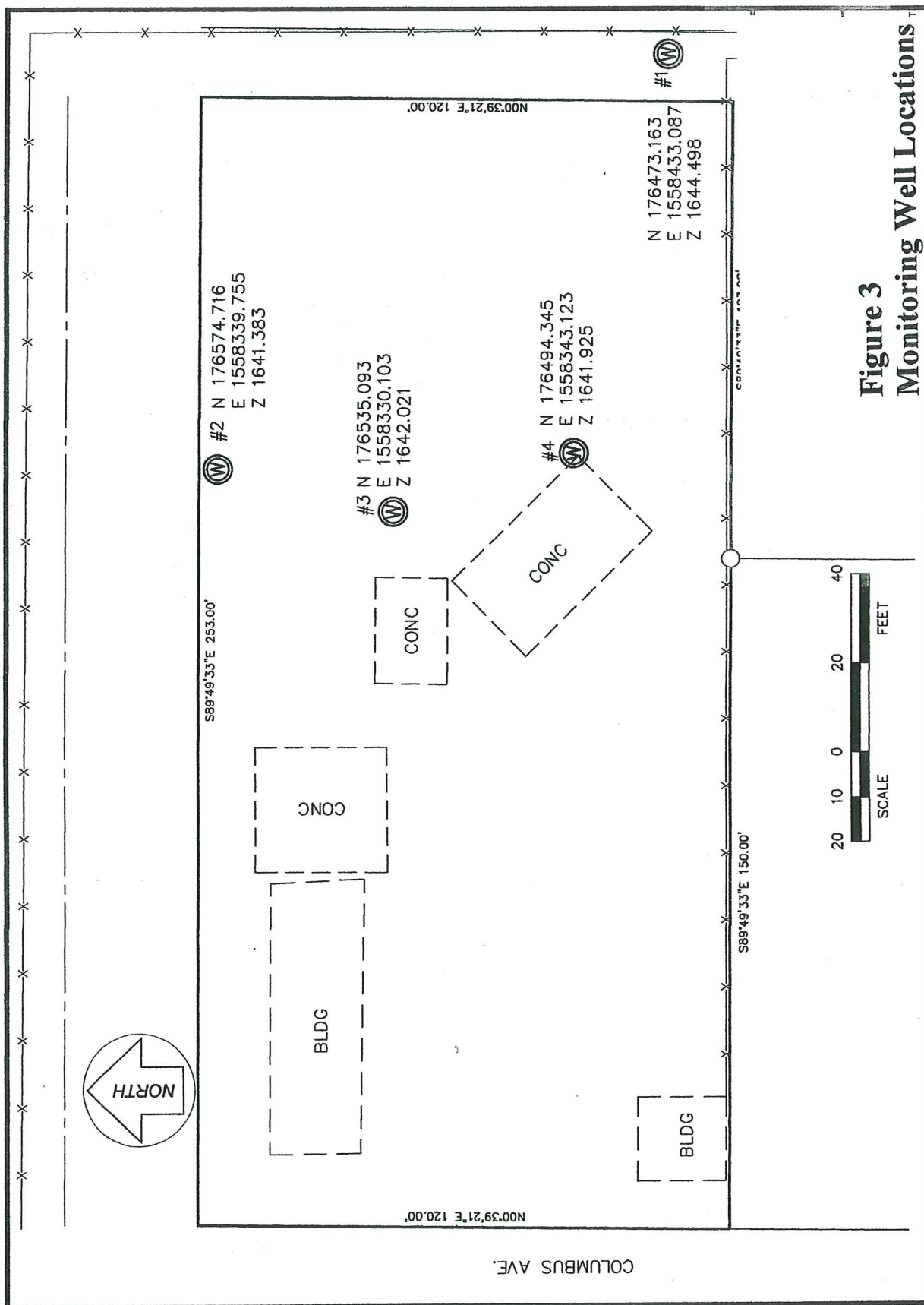
The final well, MW-4, was placed south and west of boring B-7. Based on our soil samples, this was assumed to place the well outside of the plume. It is also in a location that would show us if the plume is moving to the southwest. Figure 3 shows the location of the wells. Boring Logs for the wells are included in Appendix A after the soil boring logs.

### **Remedial Excavation**

As mentioned earlier, during the first few days after the initial spill, soil from within the immediate area beneath the overfilled tank was removed and stockpiled on site for later disposal. Prior to disposing of the soil, a landfill permit needed to be issued to assure the proper disposal methods were followed. In discussions with the Waste Management Company that runs the Arlington Landfill, the area around boring B-6 was found to contain too much toluene to allow disposal in the non-haz landfill. An agreement was made to segregate the soils from within 5-feet of boring B-6 in all directions and landfill that soil under a separate manifest so it could be properly treated.

On April 6 and 8, 2012, the remaining soils containing the fresh gasoline were excavated and a series of 19 confirmation samples were collected from the walls and floor of the excavation. Within the excavation area, all soil was removed down to the top of the





**Figure 3**  
**Monitoring Well Locations**



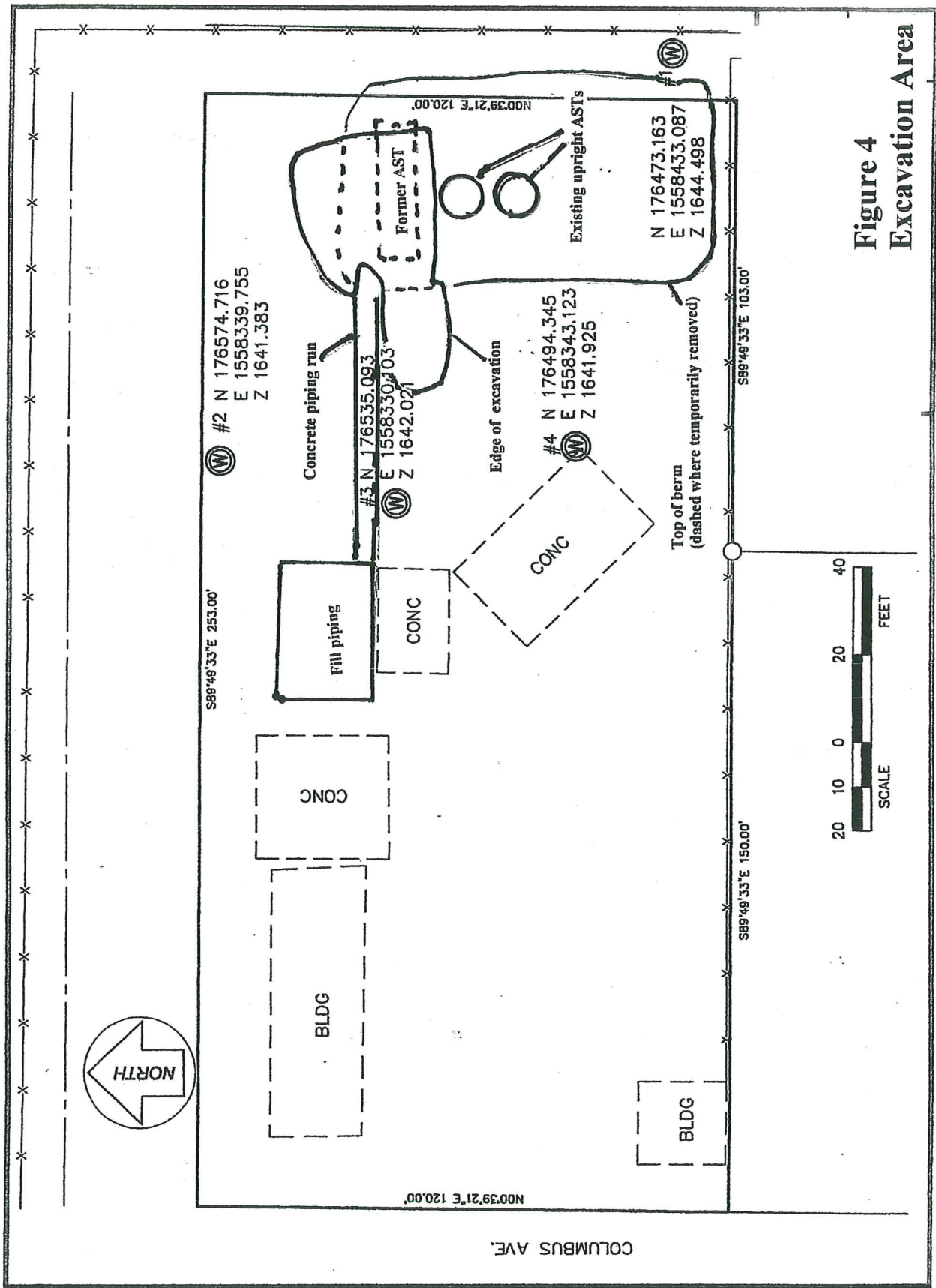
basalt bedrock. There was a small area that could not be removed below the pipe run, so samples were collected from the wall in that area to confirm that the soil that was left did not contain fresh gasoline. A total of 389.68 tons of soil was taken off site to the non-haz landfill and an additional 23.94 tons of soil from around B-6 was taken to the hazardous landfill. Figure 4 shows the area of excavation in relation to the whole site. Figure 5 is a more detailed drawing showing the locations of all the confirmation samples.

According to Washington Department of Ecology guidance documents, the difference between fresh and weathered gasoline can be determined by the ratio of benzene + toluene divided by the concentration of the ethylbenzene + xylene  $(B+T)/(E+X)$ . If the result of this is 3 to 5, the gasoline is considered to be fresh. A number of less than 0.5 is considered to be very weathered.

Because the purpose of this work was to remediate the fresh gasoline spill and not to clean up the residual contamination from 85 years of site operations, confirmation samples from the remedial excavation were all tested for gasoline range hydrocarbons and BTEX. The resulting concentrations were all analyzed according to Ecology protocol to determine if any fresh product remained. Table 5 shows the result of the confirmation sampling.

While it is apparent that there is no fresh gasoline remaining in the excavation area, four of the samples were found to be higher than the 0.50 that delineates very weathered gasoline. All four of these samples are bottom samples that were scraped from the top of the bedrock. Since it is difficult to scrape basalt, it is very possible that some of the overlying lightly contaminated soils were also picked up from pockets or low areas in the surface of the rock. The excavation was cleaned as well as possible, but it is impossible to get all soil off a surface that isn't completely flat using an excavator bucket.







100/30 0.03 Table 5 7 6 9  
**Confirmation Sampling Results (mg/kg)**

Sample Number	Location/depth	Gx	B	T	E	X	(B+T)/(E+X)
C-1	SE corner @ 4 ft.	346	2.0	2.2	2.0	13	0.29
C-2	East wall @ 3 ft.	1060	6.5	20	30	64	0.28
C-3	East wall @ 3.5 ft.	2190	7.7	26	45	120	0.20
C-4	NE corner @ 4 ft.	843	4.3	7.1	13	53	0.17
C-5	S. wall @ 3 ft.	1660	3.7	22	27	120	0.17
C-6	N side of pipe run @ 3.5 ft.	1970	27	32	160	160	0.18
C-7	S. wall below berm @ 4 ft.	2480	36	46	220	240	0.17
C-8	NE Bottom @ 8 ft	3080	13	7.4	12	32	0.46
C-9	SE bottom @ 7.5 ft	1490	6.6	18	3.9	32	0.68
C-10	Center S. bottom @ 8 ft. @ 4 ft	1590	7.3	15	25	73	0.22
C-11	NW wall @ 4 ft	2550	11	33	56	200	0.17
C-12	NW corner @ 3 ft.	2860	9.4	13	48	67	0.19
C-13	Wall by pipe run @ 3.5 ft.	1970	13	27	95	160	0.15
C-14	Bottom beneath berm @ 8 ft.	561	1.6	1.1	1.8	2.7	0.60
C-15	Bottom beneath B-6 @ 8 ft.	1810	4.9	4.1	2.3	9.0	0.79
C-16	S wall at edge of B-6 boring @ 5 ft	766	3.9	13	45	74	0.14
C-17	N wall at edge of B-6 boring @ 5 ft.	1140	8.7	17	70	96	0.15
C-18	W bottom @ 7.5 ft	1290	6.6	3.7	2.0	5.7	1.06
C-19	W wall @ 4 ft.	1220	7.0	22	79	110	0.15

**Monitoring Well Sampling**

The wells were sampled on April 20, 2012. Each well was sampled using a peristaltic pump Prior to collecting water samples, the wells were opened and allowed to equilibrate before the water levels were measured. The measuring point on wells had earlier been



surveyed, so the ground water could be determined. Table 6 shows the ground water elevations in the 4 wells. Figure 6 shows the water level in the wells.

Table 6  
Ground Water Elevations 4-20-11

Well #	Depth to water (ft.)	Surveyed measuring point elevation (ft. MSL)	Ground water elevation (ft. MSL)
MW-1	6.33	1644.50	1638.17
MW-2	5.60	1641.38	1635.78
MW-3	2.73	1642.02	1639.29
MW-4	2.26	1641.93	1639.67

Based on the widely varying water levels, it appears that the wells are tapping at least two different perched water zones. MW-1, MW-3 and MW-4 are possibly in the same zone, but it appears that MW-2, which is at least 2.5 feet lower than the rest, is tapping a separate perched water body. A ground water direction was determined based on wells 1, 3, and 4. That gradient moves to the northeast.

All of the wells were easily pumped dry after only removing approximately 1.5 well volumes of water. None of them recharged easily either, taking approximately an hour to get enough water in the well casing to fill four 80ml VOA vials for the testing. Well MW-3 seemed to recharge the best, but that was expected because there is a silty sand lens of soil sitting directly on top of the basalt that may provide for a more permeable pathway for water.

During sampling field tests were run for pH, temperature and electrical conductivity. Table 7 shows the initial readings for each well and the readings that were present during pumping after they stabilized.

Table 7  
Water Evaluation Parameters

Well	pH	EC	Temp
MW-1 -- initial	6.43	457	56.7
MW-1 stabilized	7.01	358	53.4
MW-2 initial	6.96	472	55.3
MW-2 stabilized	7.10	336	57.4
MW-3 initial	7.07	448	54.5
MW-3 stabilized	7.28	460	58.0
MW-4 initial	6.95	318	54.2
MW-4 stabilized	7.80	319	58.8

Because this is a gasoline site, the sample were analyzed for VOCs , including BTEX, MTBE, and EDC, using EPA method 8260B. EDB was analyzed using EPA method 8011. Table 8 shows the sample results.



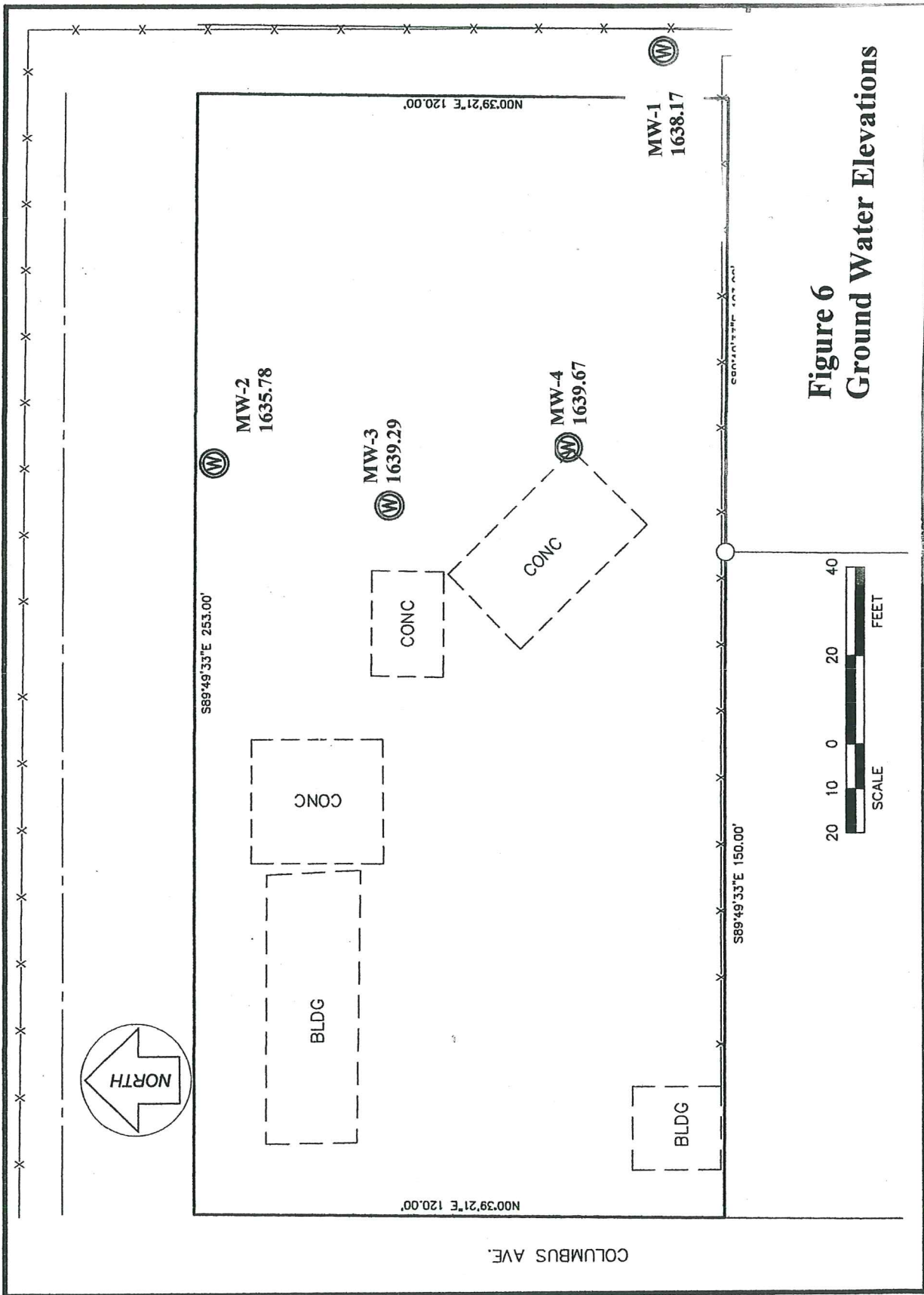


Table 8  
Ground Water sample Results (ug/l)

Chemical	MW-1	MW-2	MW-3	MW-4	Method A Levels
Gasoline Range Hydrocarbons	ND	8,910	5,080	6,000	1,000 (fresh) 800 (weathered)
1,2,4 trimethylbenzene	ND	27.3	125	ND	-
*1,2, dibromoethane (EDB)	ND	ND	ND	ND	0.01
1,2 dichloroethane (EDC)	ND	ND	ND	ND	-
1,3,5 trimethylbenzene	ND	7.79	71.4	ND	-
Benzene	5.38	1,250	4.00	ND	5
Ethylbenzene	ND	72.8	27.0	ND	-
Isopropylbenzene	ND	4.78	30.6	6.76	-
m,p-Xylene	ND	422	9.37	ND	-
MTBE	ND	ND	ND	ND	20
Naphthalene	ND	8.70	66.0	7.19	160
n-Propylbenzene	ND	10.3	124	13.7	-
o-Xylene	ND	351	ND	ND	-
Toluene	9.05	1,800	6.41	ND	1,000

Notes: EDB analysis by EPA Method 8011, all other VOCs by EPA Method 8260  
Gasoline Range Hydrocarbons by the NWTPH-Gx Method.

As you can see, if we apply the (B+T)/(E+X) test, the water in monitoring well MW-2 contains fresh gasoline and the others do not. This indicates that the ground water flow from the tank farm is moving to the northwest as expected. Additionally, wells MW-3 and MW-4 were found to contain extremely weathered product. Well MW-1 only contained 5.36 ug/l of benzene and 9.05 ug/l of toluene. This indicates that at one time there may have been a spill in this area, but it is extremely weathered.

After the initial data was received from the lab, it did not conform to our expectations that well MW-3 was going to be the one with elevated fresh gasoline. Just to make sure that there was no mistake in labeling with the initial sampling, a second set of samples was collected from wells MW-2 and MW-3 on April 30, 2012. This additional sampling confirmed that the fresh gasoline was indeed in well MW-2 and the gasoline in MW-3 was weathered. The resample results are found in Table 9.



Table 9  
Resample of MW-2 and MW-3  
4-30-12

Chemical	MW-2 (ug/l)	MW-3 (ug/l)	Method A Levels
Gasoline Range Hydrocarbons	14,500	6,180	1,000 (fresh) 800 (weathered)
1,2,4 trimethylbenzene	29.4	67.1	-
*1,2, dibromoethane (EDB)	ND	ND	0.01
1,2 dichloroethane (EDC)	ND	ND	-
1,3,5 trimethylbenzene	14.0	38.1	-
Benzene	829	0.600	5
Ethylbenzene	104	7.75	-
Isopropylbenzene	8.31	13.8	-
m,p-Xylene	221	6.08	-
MTBE	ND	ND	20
Naphthalene	10.2	39.6	160
n-Propylbenzene	17.5	56.8	-
o-Xylene	208	ND	-
Toluene	1,490	ND	1,000

Notes: EDB analysis by EPA Method 8011, all other VOCs by EPA Method 8260  
Gasoline Range Hydrocarbons by the NWTPH-Gx Method.

## Discussion

Based on the work that has been completed at the site and the confirmation samples, it is evident that the soils containing the fresh gasoline from the recent spill have been removed.

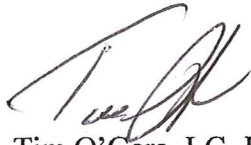
Based on the ground water levels, it appears that there at least two perched water bearing zones at the site. In particular, the water level in MW-2, which was the only well with fresh gasoline in it, was 2.39 feet lower than any other well that was on site. If we plot a ground water gradient using wells MW-1, MW-3, and MW-4, the shallow ground water is moving to the northeast, which is not what we had expected for this site.

Considering the confirmed contamination in MW-2, it is also odd that, during the soil boring program, the nearest borings (B-5 and B-10) did not have any gasoline detections in the soil samples. Also, boring B-5 was a dry boring.

This leads me to believe that the contamination in MW-2 is not associated with the original spill, but there is a leak from some other buried piping in the area. Because we are dealing with individual perched water zones and not an interconnected aquifer system, we cannot be certain that the ground water in the perched zone that is feeding MW-2 is moving in the same direction as the higher one. If it is, that would lead us to believe that the gasoline in MW-2 is coming either from the fill stand or piping leading to the gasoline dispensers that are located to the west.

While it appears that all of the fresh gasoline from the initial spill has been remediated at this time, further investigation as to the source of the fresh gasoline in MW-2 needs to be completed.

Respectfully Submitted,



Tim O'Gara, LG, LHg  
Consulting Hydrogeologist



Timothy O'Gara



**Appendix A**  
**Boring Logs**  
**And**  
**Monitoring Well Logs**

# BORING LOG

Drill Rig:

Date Drilled:

3-1-12

Logged By:

Boring Dia:

Inches

Boring Number:

B-1

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5	CL - Clay, stiff, brown	
				10	Basalt	
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after soil and water sample collection

**Site:**

Carson - Goldendale

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# BORING LOG

Drill Rig:	Date Drilled: 3-1-12	Logged By:
Boring Dia: Inches	Boring Number: B-2	Tim O'Gara LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		Cl - Clay, brown
				7		GP - Coarse Sand and Gravel, slight hydrocarbon odor
				8		Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**  
 Backfilled boring with bentonite after collecting soil and water samples

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# BORING LOG

Drill Rig:

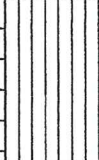


Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-3

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt, tan
				7		GP - Coarse Sand and Gravel
				8		Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil samples. No water detected in this boring

**Site:**

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# BORING LOG

Drill Rig:

Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-4

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		CL - Silty Clay, tan
				7		GP - Coarse Sand and Gravel
				8		Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil and water samples

**Site:**

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# BORING LOG

Drill Rig:




Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-5

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt, brown, stiff
				10		GP - Sand and Gravel, cemented
				10		Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil sample. No water found in this boring.

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# BORING LOG

Drill Rig:

Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-6

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5	CL - Clay, stiff, brown	
				10	SP - Medium to fine Sand Basalt	
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil and water samples.

**Site:**

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# BORING LOG

Drill Rig:

Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-7

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5	CL	CL - Silty Clay, stiff, dark brown
				5	SM	SM - Silty Sand, brown
				10	Basalt	Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled with bentonite after collecting soil samples. No water found in this boring.

**Site:**

Carson - Goldendale

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# BORING LOG

Drill Rig:




Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-8

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Clayey Silt, tan
				10		SP - Cemented Sand and Gravel
				10		Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled with bentonite after collecting soil and water samples

**Site:**

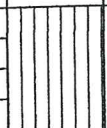


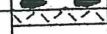
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# BORING LOG

Drill Rig:	Date Drilled: 3-1-12	Logged By:
Boring Dia: Inches	Boring Number: B-9	Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt, tan
				5		GM - Silty angular Gravel
				5		GP - Cemented Sand and Gravel
				5		Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**  
 Backfilled with bentonite after collecting soil and water samples

**Site:**  
 Carson - Goldendale



# BORING LOG

Drill Rig:

Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-10

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5	SM	SM - Silty very fine Sand
				10	GP Basalt	GP - cemented sand and gravel Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled with bentonite after collecting soil and water samples.

**Site:**

Carson - Goldendale

Project No.:

Page 1

# BORING LOG

Drill Rig:

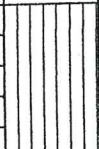
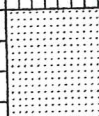

Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-11

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt, black
				5		SP - Partially cemented coarse sand, black
				10		basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil and water samples

**Site:**




Carson - Goldendale

Project No.:

Page 1

# BORING LOG

Drill Rig:	Date Drilled: 3-1-12	Logged By:
Boring Dia: Inches	Boring Number: B-12	Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt, black
				10		GP - Partially cemented Sand and Gravel
				10		Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**  
backfilled boring with bentonite after collecting soil and water samples.

**Site:**  
Carson - Goldendale



# BORING LOG

Drill Rig:





Date Drilled: 3-1-12

Logged By:

Boring Dia: Inches

Boring Number: B-13

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt, dark brown
				10		ML - Silt, black
				10		GP - Partially cemented Gravel with some Sand
				10		Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil and water samples

**Site:**





Carson - Goldendale

Project No.:

Page 1

# BORING LOG

Drill Rig:	Date Drilled: 3-1-12	Logged By:
Boring Dia: Inches	Boring Number: B-14	Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		ML - Silt dark brown
				10	  	SM - Silty Sand GP - Partially cemented Gravel and Sand Basalt
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Backfilled boring with bentonite after collecting soil and water samples.

**Site:**

Carson - Goldendale

Project No.:

Page 1

# BORING LOG

Drill Rig:

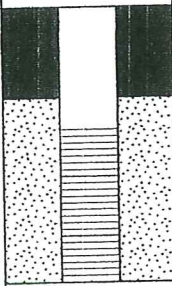
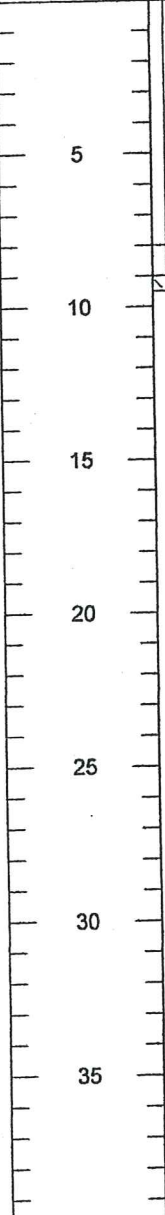
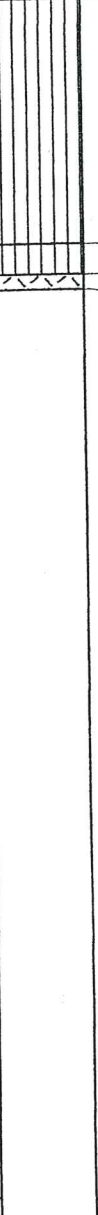
Date Drilled: 4-5-12

Logged By:

Boring Dia: Inches

Boring Number: MW-1

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
						<p>ML - Sandy Silt, black</p> <p>ML - Clayey Silt</p> <p>Basalt</p>

**Completion Notes:**

Flush mount completion.  
Well is 2-inch pvc with 5 feet of prepack 0.010 slot screen

Site:

**Carson - Goldendale**

Project No.:

Page 1



# BORING LOG

Drill Rig:

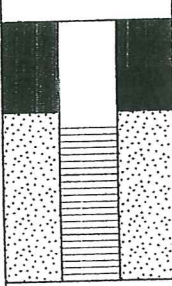
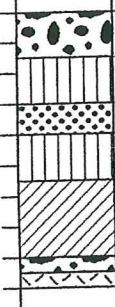
Date Drilled: 4-5-12

Logged By:

Boring Dia: Inches

Boring Number: MW-2

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		GP - Gravel fill ML - Silt, tan SW - Medium Sand, tan ML - Clayey Silt, brown CL - Clay, black GP - Gravel and weathered basalt Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Flush mount completion

Well is 2-inch pvc with 5 feet of prepacked 0.010 slot screen

Site:

Carson - Goldendale

Project No.:

Page 1

# BORING LOG

Drill Rig:

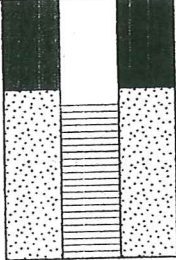
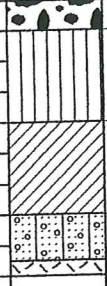
Date Drilled: 4-5-12

Logged By:

Boring Dia: Inches

Boring Number: MW-3

Tim O'Gara, LG, LHg

Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		GP - Gravel fill ML - Sandy Silt, black CL - Clay, black SM - Medium Sand with Silt, black Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**

Flush mount completion

Well is 2-inch pvc with 0.010 slot prepacked screen

**Site:**

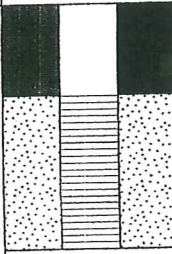
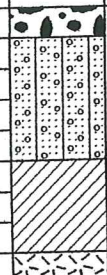
Carson - Goldendale

Project No.:

Page 1

# BORING LOG

Drill Rig:	Date Drilled: 4-5-12	Logged By:
Boring Dia: Inches	Boring Number: MW-4	Tim O'Gara, LG, LHg

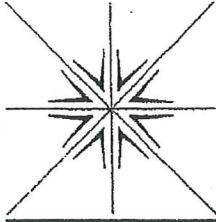
Sample	Blow Counts	Completion	OVA (ppm)	Depth Feet	Lithology	Description
				5		GP - Gravel fill SM - Silty Sand with minor Clay, black CL - Clay, black Basalt
				10		
				15		
				20		
				25		
				30		
				35		

**Completion Notes:**  
 Flush mount completion  
 Well is 2-inch pvc with 0.010 slot prepack screen

**Site:**  
 Carson - Goldendale



**Appendix B**  
**Analytical Results**



# Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
(503) 607-1331  
Fax (503) 607-1336

March 16, 2012

Scott Michaels  
4Cs Environmental, Inc.  
1590 SE Uglow Street  
Dallas, OR 97338

TEL: (503) 606-3020

FAX: (503) 606-3120

RE: Carson - Goldendale

Dear Scott Michaels:

Order No.: 1203038

Specialty Analytical received 23 samples on 3/2/2012 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

  
Cindy Hilliard  
Project Manager

  
Technical Review

CC:  
Tim O'Gara

**Specialty Analytical**

**Date:** 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale  
**Lab Order:** 1203038

**CASE NARRATIVE**

Due to lack of available sample volume, the extract from the NWTPH-Dx analysis for Specialty Analytical sample number 1203038-07 (Client ID EXC Pit Water) was used for PAH's by EPA 8270.



**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-01  
**Client Sample ID:** S-Center - 0-6"

**Collection Date:** 3/1/2012 5:00:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	609	18.5	A1,L	mg/Kg-dry	1	3/5/2012
Lube Oil	178	61.7		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	123	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	14200	309		mg/Kg-dry	100	3/6/2012
Surr: 4-Bromofluorobenzene	694	50-150	S,MI	%REC	100	3/6/2012

**Lab ID:** 1203038-02  
**Client Sample ID:** N-Center - 0-6"

**Collection Date:** 3/1/2012 5:00:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	2560	20.9	A1,L	mg/Kg-dry	1	3/5/2012
Lube Oil	1430	69.8	A2	mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	237	50-150	S,MI	%REC	1	3/5/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	18300	349		mg/Kg-dry	100	3/6/2012
Surr: 4-Bromofluorobenzene	388	50-150	S,MI	%REC	100	3/6/2012

**Lab ID:** 1203038-03  
**Client Sample ID:** NW - 0-6"

**Collection Date:** 3/1/2012 5:00:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	686	19.6	A1,L	mg/Kg-dry	1	3/5/2012
Lube Oil	899	65.2	A2	mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	121	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	15600	326		mg/Kg-dry	100	3/6/2012
Surr: 4-Bromofluorobenzene	294	50-150	S,MI	%REC	100	3/6/2012

# Specialty Analytical

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-04  
**Client Sample ID:** NE - 0-6"

**Collection Date:** 3/1/2012 5:00:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	675	18.2	A1	mg/Kg-dry	1	3/5/2012
Hydraulic Oil	1270	60.8		mg/Kg-dry	1	3/5/2012
Lube Oil	ND	60.8	A3	mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	185	50-150	S,MI	%REC	1	3/5/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	96.5	3.04		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	65.6	50-150		%REC	1	3/6/2012

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-05

**Collection Date:** 3/1/2012 5:00:00 PM

**Client Sample ID:** SE - 0-6"

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b> Analyst: kh						
Diesel	1800	20.3	A1,L	mg/Kg-dry	1	3/5/2012
Lube Oil	807	67.6	A2	mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	175	50-150	S,MI	%REC	1	3/5/2012
<b>NWTPH-GX</b> Analyst: jrp						
Gasoline	34000	338		mg/Kg-dry	100	3/6/2012
Surr: 4-Bromofluorobenzene	562	50-150	S,MI	%REC	100	3/6/2012
<b>TOTAL METALS BY ICP</b> Analyst: cmt						
Lead	1640	2.60		mg/Kg-dry	1	3/14/2012 3:43:41 PM
<b>LOW LEVEL PAH BY GC/MS</b> Analyst: bda						
<b>8270SIM</b>						
1-Methylnaphthalene	65400	901		µg/Kg-dry	50	3/14/2012 5:01:00 PM
2-Methylnaphthalene	133000	901		µg/Kg-dry	50	3/14/2012 5:01:00 PM
Acenaphthene	474	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Acenaphthylene	344	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Anthracene	396	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Benz(a)anthracene	155	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Benzo(a)pyrene	68.5	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Benzo(b)fluoranthene	77.5	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Benzo(g,h,i)perylene	128	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Benzo(k)fluoranthene	21.6	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Chrysene	64.9	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Dibenz(a,h)anthracene	ND	18.0	Q	µg/Kg-dry	1	3/14/2012 5:55:00 PM
Fluoranthene	171	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Fluorene	546	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Indeno(1,2,3-cd)pyrene	36.0	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Naphthalene	159000	901		µg/Kg-dry	50	3/14/2012 5:01:00 PM
Phenanthrene	955	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Pyrene	299	18.0		µg/Kg-dry	1	3/14/2012 5:55:00 PM
Surr: 2-Fluorobiphenyl	89.5	42.6-128		%REC	1	3/14/2012 5:55:00 PM
Surr: Nitrobenzene-d5	95.4	21.7-155		%REC	1	3/14/2012 5:55:00 PM
Surr: p-Terphenyl-d14	86.5	44.9-155		%REC	1	3/14/2012 5:55:00 PM
<b>VOLATILES BY GC/MS</b> Analyst: rkg						
<b>SW8260B</b>						
1,1,1,2-Tetrachloroethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,1,1-Trichloroethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,1,2,2-Tetrachloroethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,1,2-Trichloroethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,1-Dichloroethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,1-Dichloroethene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM



**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**VOLATILES BY GC/MS**

**SW8260B**

Analyst: rkg

1,1-Dichloropropene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2,3-Trichlorobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2,3-Trichloropropane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2,4-Trichlorobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2,4-Trimethylbenzene	1130000	67600		µg/Kg-dry	5000	3/14/2012 1:53:00 PM
1,2-Dibromo-3-chloropropane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2-Dibromoethane	ND	1690	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2-Dichlorobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2-Dichloroethane	ND	1690	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,2-Dichloropropane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,3,5-Trimethylbenzene	348000	67600		µg/Kg-dry	5000	3/14/2012 1:53:00 PM
1,3-Dichlorobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,3-Dichloropropane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
1,4-Dichlorobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
2,2-Dichloropropane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
2-Butanone	ND	6760	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
2-Chlorotoluene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
2-Hexanone	ND	6760	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
4-Chlorotoluene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
4-Isopropyltoluene	13300	3380		µg/Kg-dry	250	3/14/2012 3:23:00 PM
4-Methyl-2-pentanone	ND	6760	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Acetone	ND	16900	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Benzene	48400	3380		µg/Kg-dry	250	3/14/2012 3:23:00 PM
Bromobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Bromochloromethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Bromodichloromethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Bromoform	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Bromomethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Carbon disulfide	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Carbon tetrachloride	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Chlorobenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Chloroethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Chloroform	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Chloromethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
cis-1,2-Dichloroethene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
cis-1,3-Dichloropropene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Dibromochloromethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Dibromomethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Dichlorodifluoromethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Ethylbenzene	452000	67600		µg/Kg-dry	5000	3/14/2012 1:53:00 PM
Hexachlorobutadiene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Isopropylbenzene	39300	3380		µg/Kg-dry	250	3/14/2012 3:23:00 PM
m,p-Xylene	1640000	270000		µg/Kg-dry	10000	3/14/2012 2:24:00 PM
Methyl tert-butyl ether	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**VOLATILES BY GC/MS**

**SW8260B**

Analyst: rkg

Methylene chloride	ND	16900	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
n-Butylbenzene	41000	3380		µg/Kg-dry	250	3/14/2012 3:23:00 PM
n-Propylbenzene	154000	13500		µg/Kg-dry	1000	3/14/2012 2:56:00 PM
Naphthalene	179000	13500		µg/Kg-dry	1000	3/14/2012 2:56:00 PM
o-Xylene	692000	67600		µg/Kg-dry	5000	3/14/2012 1:53:00 PM
sec-Butylbenzene	23100	3380		µg/Kg-dry	250	3/14/2012 3:23:00 PM
Styrene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
tert-Butylbenzene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Tetrachloroethene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Toluene	1200000	67600		µg/Kg-dry	5000	3/14/2012 1:53:00 PM
trans-1,2-Dichloroethene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
trans-1,3-Dichloropropene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Trichloroethene	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Trichlorofluoromethane	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Vinyl chloride	ND	3380	Q	µg/Kg-dry	250	3/14/2012 3:23:00 PM
Surr: 1,2-Dichloroethane-d4	85.0	71.5-112		%REC	250	3/14/2012 3:23:00 PM
Surr: 4-Bromofluorobenzene	97.4	75.7-122		%REC	250	3/14/2012 3:23:00 PM
Surr: Dibromofluoromethane	80.6	64.3-124		%REC	250	3/14/2012 3:23:00 PM
Surr: Toluene-d8	102	74.9-120		%REC	250	3/14/2012 3:23:00 PM

**Lab ID:** 1203038-06

**Collection Date:** 3/1/2012 5:00:00 PM

**Client Sample ID:** SW - 0-6"

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	165	17.8	A1,L	mg/Kg-dry	1	3/5/2012
Lube Oil	101	59.2		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	72.4	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	13600	296		mg/Kg-dry	100	3/6/2012
Surr: 4-Bromofluorobenzene	465	50-150	S,MI	%REC	100	3/6/2012

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-07  
**Client Sample ID:** EXC Pit Water

**Collection Date:** 3/2/2012 10:45:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>		Analyst: kh		
Diesel	16100	206	A1,L	mg/L	100	3/6/2012
Lube Oil	630	51.5		mg/L	10	3/6/2012
Surr: o-Terphenyl	5950	50-150	S,MI	%REC	100	3/6/2012
<b>BTEX - RBC</b>		<b>SW8021B</b>		Analyst: jrp		
Benzene	3330	30.0		µg/L	100	3/6/2012
Toluene	6500	50.0		µg/L	100	3/6/2012
Ethylbenzene	1080	10.0		µg/L	20	3/6/2012
Xylenes, Total	5200	30.0		µg/L	20	3/6/2012
Surr: 4-Bromofluorobenzene	85.7	74.8-126		%REC	20	3/6/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: jrp		
Gasoline	44700	2000		µg/L	20	3/6/2012
Surr: 4-Bromofluorobenzene	82.8	50-150		%REC	20	3/6/2012
<b>LOW LEVEL PAH BY GC/MS</b>		<b>8270SIM</b>		Analyst: bda		
1-Methylnaphthalene	273000	2570	CN	µg/L	1000	3/8/2012 11:43:00 AM
2-Methylnaphthalene	521000	2570	CN	µg/L	1000	3/8/2012 11:43:00 AM
Acenaphthene	2270	129	CN	µg/L	50	3/8/2012 12:09:00 PM
Acenaphthylene	ND	129	Q,CN	µg/L	50	3/8/2012 12:09:00 PM
Anthracene	747	129	CN	µg/L	50	3/8/2012 12:09:00 PM
Benz(a)anthracene	592	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Benzo(a)pyrene	227	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Benzo(b)fluoranthene	170	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Benzo(g,h,i)perylene	175	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Benzo(k)fluoranthene	72.1	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Chrysene	448	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Dibenz(a,h)anthracene	46.3	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Fluoranthene	283	129	CN	µg/L	50	3/8/2012 12:09:00 PM
Fluorene	5920	129	CN	µg/L	50	3/8/2012 12:09:00 PM
Indeno(1,2,3-cd)pyrene	77.2	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Naphthalene	549000	2570	CN	µg/L	1000	3/8/2012 11:43:00 AM
Phenanthrene	9170	129	CN	µg/L	50	3/8/2012 12:09:00 PM
Pyrene	1280	25.7	CN	µg/L	10	3/8/2012 12:36:00 PM
Surr: 2-Fluorobiphenyl	0	18.6-106	S,CN	%REC	50	3/8/2012 12:09:00 PM
Surr: Nitrobenzene-d5	0	17-130	S,CN	%REC	50	3/8/2012 12:09:00 PM
Surr: p-Terphenyl-d14	0	39.6-131	S,CN	%REC	50	3/8/2012 12:09:00 PM

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-08

**Collection Date:** 3/2/2012 10:10:00 AM

**Client Sample ID:** S-Center @ 54"

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	25.6	21.0		mg/Kg-dry	1	3/5/2012
Lube Oil	ND	69.9		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	101	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b>						Analyst: jrp
Gasoline	ND	3.50		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	69.5	50-150		%REC	1	3/5/2012

**Lab ID:** 1203038-09

**Collection Date:** 3/2/2012 10:10:00 AM

**Client Sample ID:** C-Center @ 56"

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	694	20.3	A4	mg/Kg-dry	1	3/5/2012
Lube Oil	89.1	67.7		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	148	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b>						Analyst: jrp
Gasoline	833	16.9	A	mg/Kg-dry	5	3/6/2012
Surr: 4-Bromofluorobenzene	178	50-150	S,MI	%REC	5	3/6/2012

**Lab ID:** 1203038-10

**Collection Date:** 3/2/2012 11:30:00 AM

**Client Sample ID:** NW - 62"

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	367	19.5	A1	mg/Kg-dry	1	3/5/2012
Lube Oil	91.6	65.0		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	73.7	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b>						Analyst: jrp
Gasoline	1170	32.5		mg/Kg-dry	10	3/5/2012
Surr: 4-Bromofluorobenzene	400	50-150	S,MI	%REC	10	3/5/2012



**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-11  
**Client Sample ID:** NW - 36"

**Collection Date:** 3/2/2012 11:30:00 AM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	3320	20.1		mg/Kg-dry	1	3/5/2012
Lube Oil	137	66.8		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	316	50-150	S,MI	%REC	1	3/5/2012
<b>NWTPH-GX</b>						Analyst: jrp
Gasoline	4060	33.4		mg/Kg-dry	10	3/5/2012
Surr: 4-Bromofluorobenzene	246	50-150	S,MI	%REC	10	3/5/2012

**Lab ID:** 1203038-12  
**Client Sample ID:** N-Center 58"

**Collection Date:** 3/2/2012 1:15:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	2020	19.3	L	mg/Kg-dry	1	3/5/2012
Lube Oil	147	64.2		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	207	50-150	S,MI	%REC	1	3/5/2012
<b>NWTPH-GX</b>						Analyst: jrp
Gasoline	2100	32.1		mg/Kg-dry	10	3/6/2012
Surr: 4-Bromofluorobenzene	199	50-150	S,MI	%REC	10	3/6/2012

**Lab ID:** 1203038-13  
**Client Sample ID:** B-10-W

**Collection Date:** 3/2/2012  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	20.7	0.0896	A1,L	mg/L	1	3/6/2012
Lube Oil	1.30	0.224	A2	mg/L	1	3/6/2012
Surr: o-Terphenyl	131	50-150		%REC	1	3/6/2012

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-14

**Collection Date:** 3/2/2012 12:14:00 PM

**Client Sample ID:** B-1-W

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	ND	0.0853		mg/L	1	3/6/2012
Lube Oil	ND	0.213		mg/L	1	3/6/2012
Surr: o-Terphenyl	86.7	50-150		%REC	1	3/6/2012

**Lab ID:** 1203038-15

**Collection Date:** 3/2/2012 12:23:00 PM

**Client Sample ID:** B-9-W

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	2.08	0.0863	A1	mg/L	1	3/6/2012
Lube Oil	ND	0.216		mg/L	1	3/6/2012
Surr: o-Terphenyl	57.3	50-150		%REC	1	3/6/2012

**Lab ID:** 1203038-16

**Collection Date:** 3/2/2012 12:33:00 PM

**Client Sample ID:** B-4-W

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	7.98	0.0851		mg/L	1	3/6/2012
Lube Oil	0.322	0.213		mg/L	1	3/6/2012
Surr: o-Terphenyl	166	50-150	S,MI	%REC	1	3/6/2012

**Lab ID:** 1203038-17

**Collection Date:** 3/2/2012 12:40:00 PM

**Client Sample ID:** B-8-W

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	1.24	0.0834	A4	mg/L	1	3/8/2012
Lube Oil	0.393	0.209	A2	mg/L	1	3/8/2012
Surr: o-Terphenyl	117	50-150		%REC	1	3/8/2012

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-18  
**Client Sample ID:** N Center 36"

**Collection Date:** 3/2/2012  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b> <span style="float:right">Analyst: kh</span>						
Diesel	118	19.3	A1,L	mg/Kg-dry	1	3/5/2012
Lube Oil	ND	64.2		mg/Kg-dry	1	3/5/2012
Surr: o-Terphenyl	104	50-150		%REC	1	3/5/2012
<b>NWTPH-GX</b> <span style="float:right">Analyst: jrp</span>						
Gasoline	1120	32.1		mg/Kg-dry	10	3/5/2012
Surr: 4-Bromofluorobenzene	132	50-150		%REC	10	3/5/2012

**Lab ID:** 1203038-19  
**Client Sample ID:** B-12-W

**Collection Date:** 3/2/2012 1:27:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b> <span style="float:right">Analyst: kh</span>						
Diesel	169	1.54		mg/L	20	3/8/2012
Lube Oil	8.08	0.193	A2	mg/L	1	3/6/2012
Surr: o-Terphenyl	407	50-150	S,MI	%REC	1	3/6/2012

**Lab ID:** 1203038-20  
**Client Sample ID:** B-13-W

**Collection Date:** 3/2/2012 1:33:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b> <span style="float:right">Analyst: kh</span>						
Diesel	36.5	0.0804		mg/L	1	3/6/2012
Lube Oil	1.12	0.201		mg/L	1	3/6/2012
Surr: o-Terphenyl	308	50-150	S,MI	%REC	1	3/6/2012

**Lab ID:** 1203038-21  
**Client Sample ID:** B-14-W

**Collection Date:** 3/2/2012 1:41:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b> <span style="float:right">Analyst: kh</span>						
Diesel	213	3.94		mg/L	50	3/8/2012
Lube Oil	4.72	0.197	A2	mg/L	1	3/6/2012
Surr: o-Terphenyl	946	50-150	S,MI	%REC	50	3/8/2012
Surr: o-Terphenyl	2590	50-150	S,MI	%REC	1	3/6/2012

**Specialty Analytical**

Date: 16-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson - Goldendale

**Lab Order:** 1203038

**Lab ID:** 1203038-22

**Collection Date:** 3/2/2012 1:03:00 PM

**Client Sample ID:** B-6-W

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	8.53	0.0775	A1,L	mg/L	1	3/6/2012
Lube Oil	0.437	0.194	A2	mg/L	1	3/6/2012
Surr: o-Terphenyl	118	50-150		%REC	1	3/6/2012

**Lab ID:** 1203038-23

**Collection Date:** 3/2/2012

**Client Sample ID:** B-11-W

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	294	4.19		mg/L	50	3/8/2012
Lube Oil	7.73	0.210	A2	mg/L	1	3/6/2012
Surr: o-Terphenyl	1010	50-150	S,MI	%REC	1	3/6/2012



Specialty Analytical

Date: 16-Mar-12

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_S

Sample ID: MBLK-31001	SampType: MBLK	TestCode: 6010_S	Units: mg/Kg	Prep Date: 3/14/2012	Run ID: TJA IRIS_120314A						
Client ID: ZZZZ	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822419						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	2.00									

Sample ID: LCS-31001	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 3/14/2012	Run ID: TJA IRIS_120314A						
Client ID: ZZZZ	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822420						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	99.53	2.00	100	0	99.5	84.9	109	0	0		

Sample ID: 1203038-05AMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg-dry	Prep Date: 3/14/2012	Run ID: TJA IRIS_120314A						
Client ID: SE - 0-6"	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822423						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1429	2.50	125.1	1636	-165	84.9	109	0	0		S,MC

Sample ID: 1203038-05ADUP	SampType: MSD	TestCode: 6010_S	Units: mg/Kg-dry	Prep Date: 3/14/2012	Run ID: TJA IRIS_120314A						
Client ID: SE - 0-6"	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822424						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1409	2.50	125.1	1636	-181	84.9	109	1429	1.41	20	S,MC

Sample ID: 1203038-05ADUP	SampType: DUP	TestCode: 6010_S	Units: mg/Kg-dry	Prep Date: 3/14/2012	Run ID: TJA IRIS_120314A						
Client ID: SE - 0-6"	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822422						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	1707	2.60	0	0	0	0	0	1636	4.28	20	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantification limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
 Page 1 of 24

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203038  
**Project:** Carson - Goldendale

**TestCode:** 6010\_S

Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120314A						
Client ID: ZZZZZ	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822418						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	98.62	2.00	100	0	98.6	90	110	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120314A						
Client ID: ZZZZZ	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822425						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	102.6	2.00	100	0	103	90	110	0	0	0	

Sample ID: ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120314A						
Client ID: ZZZZZ	Batch ID: 31001	TestNo: E6010		Analysis Date: 3/14/2012	SeqNo: 822417						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	101	2.00	100	0	101	90	110	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      Page 2 of 24

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203038  
**Project:** Carson - Goldendale

**TestCode:** 8260\_S

Sample ID: <b>MBLK-31002</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_S</b>	Units: <b>µg/Kg</b>
Client ID: <b>ZZZZ</b>	Batch ID: <b>31002</b>	TestNo: <b>SW8260B</b>	
Prep Date: <b>3/14/2012</b>		Run ID: <b>5975X_120314A</b>	
Analysis Date: <b>3/14/2012</b>		SeqNo: <b>822493</b>	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10.0									
1,1,1-Trichloroethane	ND	10.0									
1,1,2,2-Tetrachloroethane	ND	10.0									
1,1,2-Trichloroethane	ND	10.0									
1,1-Dichloroethane	ND	10.0									
1,1-Dichloroethene	ND	10.0									
1,1-Dichloropropene	ND	10.0									
1,2,3-Trichlorobenzene	ND	10.0									
1,2,3-Trichloropropane	ND	10.0									
1,2,4-Trichlorobenzene	ND	10.0									
1,2,4-Trimethylbenzene	ND	10.0									
1,2-Dibromo-3-chloropropane	ND	10.0									
1,2-Dibromoethane	ND	5.00									
1,2-Dichlorobenzene	ND	10.0									
1,2-Dichloroethane	ND	5.00									
1,2-Dichloropropane	ND	10.0									
1,3,5-Trimethylbenzene	ND	10.0									
1,3-Dichlorobenzene	ND	10.0									
1,3-Dichloropropane	ND	10.0									
1,4-Dichlorobenzene	0.47	10.0									J
2,2-Dichloropropane	ND	10.0									
2-Butanone	ND	20.0									
2-Chlorotoluene	ND	10.0									
2-Hexanone	ND	20.0									
4-Chlorotoluene	ND	10.0									
4-Isopropyltoluene	ND	10.0									
4-Methyl-2-pentanone	ND	20.0									
Acetone	ND	50.0									
Benzene	ND	10.0									
Bromobenzene	ND	10.0									
Bromochloromethane	ND	10.0									

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.

**Work Order:** 1203038

**Project:** Carson - Goldendale

**TestCode:** 8260\_S

Sample ID: <b>MBLK-31002</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_S</b>	Units: <b>µg/Kg</b>	Prep Date: <b>3/14/2012</b>	Run ID: <b>5975X_120314A</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31002</b>	TestNo: <b>SW8260B</b>		Analysis Date: <b>3/14/2012</b>	SeqNo: <b>822493</b>						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Bromodichloromethane	ND	10.0									
Bromoform	ND	10.0									
Bromomethane	ND	10.0									
Carbon disulfide	ND	10.0									
Carbon tetrachloride	ND	10.0									
Chlorobenzene	ND	10.0									
Chloroethane	ND	10.0									
Chloroform	ND	10.0									
Chloromethane	ND	10.0									
cis-1,2-Dichloroethene	ND	10.0									
cis-1,3-Dichloropropene	ND	10.0									
Dibromochloromethane	ND	10.0									
Dibromomethane	ND	10.0									
Dichlorodifluoromethane	ND	10.0									
Ethylbenzene	ND	10.0									
Hexachlorobutadiene	ND	10.0									
Isopropylbenzene	ND	10.0									
m,p-Xylene	ND	20.0									
Methyl tert-butyl ether	ND	10.0									
Methylene chloride	40.87	50.0									J
n-Butylbenzene	ND	10.0									
n-Propylbenzene	ND	10.0									
Naphthalene	6.52	10.0									J
o-Xylene	ND	10.0									
sec-Butylbenzene	ND	10.0									
Styrene	ND	10.0									
tert-Butylbenzene	ND	10.0									
Tetrachloroethene	ND	10.0									
Toluene	ND	10.0									
trans-1,2-Dichloroethene	ND	10.0									
trans-1,3-Dichloropropene	ND	10.0									

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203038  
**Project:** Carson - Goldendale

**TestCode: 8260\_S**

Sample ID:	MBLK-31002	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:	3/14/2012	Run ID:	5975X_120314A
Client ID:	ZZZZ	Batch ID:	31002	TestNo:	SW8260B						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Trichloroethene	ND	10.0									
Trichlorofluoromethane	ND	10.0									
Vinyl chloride	ND	10.0									
Surr: 1,2-Dichloroethane-d4	93.76	0	100	0	93.8	71.5	112	0	0	0	
Surr: 4-Bromofluorobenzene	104.7	0	100	0	105	75.7	122	0	0	0	
Surr: Dibromofluoromethane	102.2	0	100	0	102	64.3	124	0	0	0	
Surr: Toluene-d8	107.6	0	100	0	108	74.9	120	0	0	0	

Sample ID:	LCS-31002	SampType:	LCS	TestCode:	8260_S	Units:	µg/Kg	Prep Date:	3/14/2012	Run ID:	5975X_120314A
Client ID:	ZZZZ	Batch ID:	31002	TestNo:	SW8260B						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	66.88	10.0	60	0	111	66.4	133	0	0	0	
Benzene	68.93	10.0	60	0	115	78	123	0	0	0	
Chlorobenzene	63.47	10.0	60	0	106	79.5	125	0	0	0	
Toluene	64.47	10.0	60	0	107	77.5	132	0	0	0	
Trichloroethene	60.91	10.0	60	0	102	72.4	124	0	0	0	

Sample ID:	1203038-05AMS	SampType:	MS	TestCode:	8260_S	Units:	µg/Kg-dry	Prep Date:	3/14/2012	Run ID:	5975X_120314A
Client ID:	SE - 0-6"	Batch ID:	31002	TestNo:	SW8260B						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	709900	135000	810800	0	87.6	69.2	158	0	0	0	
Benzene	880900	135000	810800	57700	102	71.7	147	0	0	0	
Chlorobenzene	809600	135000	810800	0	99.8	75	148	0	0	0	
Toluene	1639000	135000	810800	1205000	53.5	75.8	153	0	0	0	S,MI
Trichloroethene	767800	135000	810800	0	94.7	77.1	138	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_S

Sample ID: 1203038-05AMSD	Samp Type: MSD	TestCode: 8260_S	Units: µg/Kg-dry	Prep Date: 3/14/2012	Run ID: 5975X_120314A						
Client ID: SE - 0-6"	Batch ID: 31002	TestNo: SW8260B		Analysis Date: 3/14/2012	SeqNo: 822499						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	766900	135000	810800	0	94.6	69.2	158	709900	7.72	20	
Benzene	941400	135000	810800	57700	109	71.7	147	880900	6.63	20	
Chlorobenzene	867200	135000	810800	0	107	75	148	809600	6.87	20	
Toluene	1831000	135000	810800	1205000	77.2	75.8	153	1639000	11.0	20	
Trichloroethene	824700	135000	810800	0	102	77.1	138	767800	7.14	20	

Sample ID: CCV-31002	Samp Type: CCV	TestCode: 8260_S	Units: µg/Kg	Prep Date:	Run ID: 5975X_120314A						
Client ID: ZZZZZ	Batch ID: 31002	TestNo: SW8260B		Analysis Date: 3/14/2012	SeqNo: 822491						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	62.84	10.0	60	0	105	80	120	0	0	0	
1,2-Dichloropropane	65.15	10.0	60	0	109	80	120	0	0	0	
Chloroform	60.58	10.0	60	0	101	80	120	0	0	0	
Ethylbenzene	67.13	10.0	60	0	112	80	120	0	0	0	
Toluene	61.6	10.0	60	0	103	80	120	0	0	0	
Vinyl chloride	61.26	10.0	60	0	102	80	120	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit  
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 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank

**CLIENT:** 4Cs Environmental, Inc. **ANALYTICAL QC SUMMARY REPORT**  
**Work Order:** 1203038  
**Project:** Carson - Goldendale **TestCode: BTEXRBC\_W**

Sample ID: MB-30943	SampType: MBLK	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/6/2012	Run ID: GC-I_120306B						
Client ID: ZZZZZ	Batch ID: 30943	TestNo: SW8021B		Analysis Date: 3/6/2012	SeqNo: 820468						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.300									
Toluene	0.32	0.500									J
Ethylbenzene	0.15	0.500									J
Xylenes, Total	0.53	1.50									J
Surr: 4-Bromofluorobenzene	90.81	0	100	0	90.8	74.8	126	0	0	0	

Sample ID: LCS-30943	SampType: LCS	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/6/2012	Run ID: GC-I_120306B						
Client ID: ZZZZZ	Batch ID: 30943	TestNo: SW8021B		Analysis Date: 3/6/2012	SeqNo: 820467						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.31	0.300	50	0	86.6	75.8	113	0	0	0	
Toluene	49.96	0.500	50	0	99.9	77	116	0	0	0	
Ethylbenzene	46.59	0.500	50	0	93.2	76.6	118	0	0	0	
Xylenes, Total	140.9	1.50	150	0	94	76.7	118	0	0	0	

Sample ID: 1203038-07CMS	SampType: MS	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/6/2012	Run ID: GC-I_120306B						
Client ID: EXC Pit Water	Batch ID: 30943	TestNo: SW8021B		Analysis Date: 3/6/2012	SeqNo: 820471						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5166	30.0	2500	3332	73.4	67.8	118	0	0	0	
Toluene	8229	50.0	2500	6498	69.2	74.7	117	0	0	0	S,MC
Ethylbenzene	3167	50.0	2500	1078	83.6	74.5	115	0	0	0	
Xylenes, Total	11480	150	7500	5376	81.4	76.8	120	0	0	0	

Sample ID: 1203038-07CMSD	SampType: MSD	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/6/2012	Run ID: GC-I_120306B						
Client ID: EXC Pit Water	Batch ID: 30943	TestNo: SW8021B		Analysis Date: 3/6/2012	SeqNo: 820472						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	5462	30.0	2500	3332	85.2	67.8	118	5166	5.57	20	
Toluene	8725	50.0	2500	6498	89.1	74.7	117	8229	5.85	20	
Ethylbenzene	3348	50.0	2500	1078	90.8	74.5	115	3167	5.56	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.

**Work Order:** 1203038

**Project:** Carson - Goldendale

**TestCode:** NWTPHDX\_S

Sample ID:	MB-30926	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	3/5/2012	Run ID:	GC-M_120305A
Client ID:	ZZZZZ	Batch ID:	30926	TestNo:	NWTPH-Dx			Analysis Date:	3/5/2012	SeqNo:	820124
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	39.91	0	33.33	0	120	50	150	0	0	0	0

Sample ID:	MB-30926	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	3/5/2012	Run ID:	GC-M_120305A
Client ID:	ZZZZZ	Batch ID:	30926	TestNo:	NWTPH-Dx			Analysis Date:	3/5/2012	SeqNo:	820597
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydraulic Oil	15.92	50.0									J

Sample ID:	LCS-30926	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	3/5/2012	Run ID:	GC-M_120305A
Client ID:	ZZZZZ	Batch ID:	30926	TestNo:	NWTPH-Dx			Analysis Date:	3/5/2012	SeqNo:	820603
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	129.1	15.0	166.6	0	77.5	76.3	125	0	0	0	
Lube Oil	129	50.0	166.6	0	77.4	69.9	127	0	0	0	

Sample ID:	1203038-09ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	3/5/2012	Run ID:	GC-M_120305A
Client ID:	C-Center @ 56"	Batch ID:	30926	TestNo:	NWTPH-Dx			Analysis Date:	3/5/2012	SeqNo:	820130
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	440.4	20.3	0	0	0	0	0	693.9	44.7	20	A4,R,MI
Lube Oil	77.88	67.7	0	0	0	0	0	89.09	13.4	20	

Sample ID:	1203038-03ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	3/5/2012	Run ID:	GC-M_120305A
Client ID:	NW - 0-6"	Batch ID:	30926	TestNo:	NWTPH-Dx			Analysis Date:	3/5/2012	SeqNo:	820137
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	828.7	19.6	0	0	0	0	0	685.9	18.9	20	A1,L
Lube Oil	1222	65.2	0	0	0	0	0	898.6	30.5	20	A2,R,MI

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

TestCode: NWTPHDX\_S

Sample ID: CCB-30926	SampType: CCB	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0	0	0	0	0	0	0	0	0	0
Lube Oil	7.143	50.0	0	0	0	0	0	0	0	0	0
Surr: o-Terphenyl	45.63	0	33.33	0	137	50	150	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820123						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1017	15.0	1023	0	99.4	85	115	0	0	0	0
Lube Oil	551.3	50.0	524.9	0	105	85	115	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820139						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1370	15.0	1364	0	100	85	115	0	0	0	0
Lube Oil	665.7	50.0	699.9	0	95.1	85	115	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820596						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1383	15.0	1364	0	101	85	115	0	0	0	0
Hydraulic Oil	794.8	50.0	708.7	0	112	85	115	0	0	0	0
Lube Oil	699.5	50.0	699.9	0	99.9	85	115	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820600						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203038  
**Project:** Carson - Goldendale

**TestCode:** NWTPHDX\_S

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820600						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1052	15.0	1023	0	103	85	115	0	0	0	0
Hydraulic Oil	648.7	50.0	708.7	0	91.5	85	115	0	0	0	0
Lube Oil	544.4	50.0	524.9	0	104	85	115	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820601						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1459	15.0	1364	0	107	85	115	0	0	0	0
Lube Oil	648.4	50.0	699.9	0	92.6	85	115	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120305A						
Client ID: ZZZZZ	Batch ID: 30926	TestNo: NWTPH-Dx		Analysis Date: 3/5/2012	SeqNo: 820604						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1066	15.0	1023	0	104	85	115	0	0	0	0
Lube Oil	536.5	50.0	524.9	0	102	85	115	0	0	0	0

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203038  
**Project:** Carson - Goldendale

**TestCode:** NWTPHDXLL\_W

Sample ID: MB-30927	SampType: MBLK	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 3/5/2012	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820531						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	0.0800									
Hydraulic Oil	0.1696	0.200									J
Lube Oil	ND	0.200									
Surr: o-Terphenyl	0.2229	0	0.2	0	111	50	150	0	0	0	

Sample ID: LCS-30927	SampType: LCS	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 3/5/2012	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820532						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	0.9851	0.0800	1	0	98.5	60.7	121	0	0	0	
Lube Oil	1.105	0.200	1	0	110	64	126	0	0	0	

Sample ID: LCSD-30927	SampType: LCSD	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 3/5/2012	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820533						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	0.9733	0.0800	1	0	97.3	60.7	121	0.9851	1.20	20	
Lube Oil	1.211	0.200	1	0	121	64	126	1.105	9.21	20	

Sample ID: CCB	SampType: CCB	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820858						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	0.0800	0	0	0	0	0	0	0	0	
Lube Oil	0.02736	0.200	0	0	0	0	0	0	0	0	
o-Terphenyl	0.2216	0	0.2	0	111	50	150	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDXLL\_W

Sample ID: CCB	SampType: CCB	TestCode: NWTPHDXLL	Units: mg/L	Prep Date: 3/5/2012	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/8/2012	SeqNo: 820929						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	0.0800	0	0	0	0	0	0	0	0	0
Lube Oil	0.1182	0.200	0	0	0	0	0	0	0	0	0
Surr: o-Terphenyl	0.2415	0	0.2	0	121	50	150	0	0	0	0

Sample ID: CCB	SampType: CCB	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/8/2012	SeqNo: 821036						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydraulic Oil	0.01978	0.200	0	0	0	0	0	0	0	0	0
o-Terphenyl	0.2479	0	0.2	0	124	50	150	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820530						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	8.296	0.0800	8.184	0	101	85	115	0	0	0	0
Hydraulic Oil	4.77	0.200	4.253	0	112	85	115	0	0	0	0
Lube Oil	4.197	0.200	4.2	0	99.9	85	115	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820542						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	6.312	0.0800	6.138	0	103	85	115	0	0	0	0
Hydraulic Oil	3.892	0.200	4.253	0	91.5	85	115	0	0	0	0
Lube Oil	3.267	0.200	3.15	0	104	85	115	0	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDXLL\_W

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820857						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	6.437	0.0800	6.138	0	105	85	115	0	0	0	
Lube Oil	3.21	0.200	3.15	0	102	85	115	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820872						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	8.925	0.0800	8.184	0	109	85	115	0	0	0	
Lube Oil	4.381	0.200	4.2	0	104	85	115	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/8/2012	SeqNo: 820928						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	6.56	0.0800	6.138	0	107	85	115	0	0	0	
Lube Oil	3.15	0.200	3.15	0	100	85	115	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/8/2012	SeqNo: 820938						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	8.586	0.0800	8.184	0	105	85	115	0	0	0	
Lube Oil	4.154	0.200	4.2	0	98.9	85	115	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A						
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/8/2012	SeqNo: 821035						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydraulic Oil	3.056	0.200	3.038	0	101	85	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203038  
**Project:** Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

**TestCode:** NWTPHDXLL\_W

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDXLL	Units: mg/L	Prep Date:	Run ID: GC-M_120306A					
Client ID: ZZZZZ	Batch ID: 30927	TestNo: NWTPH-Dx		Analysis Date: 3/8/2012	SeqNo: 821038					
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hydraulic Oil	4.237	0.200	4.253	99.6	85	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_S

Sample ID: MB-30935	SampType: MBLK	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820024						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	2.50									
Surr: 4-Bromofluorobenzene	3.871	0	5	0	77.4	150	50	0	0	0	0

Sample ID: LCS-30935	SampType: LCS	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820023						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	42.91	2.50	50	0	85.8	121	53.5	0	0	0	0

Sample ID: 1203038-18ADUP	SampType: DUP	TestCode: NWTPHGX_S	Units: mg/Kg-dry	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: N Center 36"	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820037						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	1096	32.1	0	0	0	0	0	1125	2.61	20	20

Sample ID: 1203038-03ADUP	SampType: DUP	TestCode: NWTPHGX_S	Units: mg/Kg-dry	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: NW - 0-6"	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820173						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	16340	326	0	0	0	0	0	15600	4.59	20	20

Sample ID: CCB	SampType: CCB	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820165						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	2.50	0	0	0	0	0	0	0	0	0
Surr: 4-Bromofluorobenzene	3.563	0	5	0	71.3	150	50	0	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_S

Sample ID: CCB	SampType: CCB	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/7/2012	SeqNo: 820562						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2.12	2.50	0	0	0	0	0	0	0	0	0
Surr: 4-Bromofluorobenzene	3.634	0	5	0	72.7	50	150	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820022						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	111.4	2.50	125	0	89.1	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820039						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	1468	25.0	1500	0	97.8	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820164						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	121	2.50	125	0	96.8	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820176						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	142.4	2.50	150	0	95	80	120	0	0	0	0

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      Page 17 of 24



CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_S

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/7/2012	SeqNo: 820561						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	119.2	2.50	125	0	95.4	80	120	0	0	0	
Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/7/2012	SeqNo: 820565						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	142.5	2.50	150	0	95	80	120	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
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 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_W

Sample ID:	MB-30944	SampType:	MBLK	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/6/2012	Run ID:	GC-I_120306C
Client ID:	ZZZZZ	Batch ID:	30944	TestNo:	NWTPH-Gx			Analysis Date:	3/6/2012	SeqNo:	820475
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	100									
Surr: 4-Bromofluorobenzene	101.7	0	100	0	102	50	150	0	0	0	0

Sample ID:	LCS-30944	SampType:	LCS	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/6/2012	Run ID:	GC-I_120306C
Client ID:	ZZZZZ	Batch ID:	30944	TestNo:	NWTPH-Gx			Analysis Date:	3/6/2012	SeqNo:	820474
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2099	100	2500	0	84	74.4	128	0	0	0	0

Sample ID:	1203038-07CDUP	SampType:	DUP	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/6/2012	Run ID:	GC-I_120306C
Client ID:	EXC Pit Water	Batch ID:	30944	TestNo:	NWTPH-Gx			Analysis Date:	3/6/2012	SeqNo:	820477
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	42370	2000	0	0	0	0	0	44690	5.32	20	20

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:		Run ID:	GC-I_120306C
Client ID:	ZZZZZ	Batch ID:	30944	TestNo:	NWTPH-Gx			Analysis Date:	3/6/2012	SeqNo:	820478
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2540	100	3000	0	84.7	80	120	0	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

TestCode: PAHLL\_S

Sample ID: MB-30993	SampType: MBLK	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 3/13/2012	Run ID: 5975Q_120314B						
Client ID: ZZZZ	Batch ID: 30993	TestNo: 8270SIM		Analysis Date: 3/14/2012	SeqNo: 822374						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	ND	6.67									J
2-Methylnaphthalene	ND	6.67									J
Acenaphthene	ND	6.67									J
Acenaphthylene	ND	6.67									J
Anthracene	0.6667	6.67									J
Benzo(a)anthracene	2	6.67									J
Benzo(a)pyrene	2.667	6.67									J
Benzo(b)fluoranthene	2	6.67									J
Benzo(g,h,i)perylene	5.333	6.67									J
Benzo(k)fluoranthene	2	6.67									J
Chrysene	1.333	6.67									J
Dibenz(a,h)anthracene	4	6.67									J
Fluoranthene	0.6667	6.67									J
Fluorene	0.6667	6.67									J
Indeno(1,2,3-cd)pyrene	5.333	6.67									J
Naphthalene	1.333	6.67									J
Phenanthrene	0.6667	6.67									J
Pyrene	ND	6.67									J
Surr: 2-Fluorobiphenyl	6584	0	6667	0	98.8	42.6	128	0	0	0	
Surr: Nitrobenzene-d5	6255	0	6667	0	93.8	21.7	155	0	0	0	
Surr: p-Terphenyl-d14	7435	0	6667	0	112	44.9	155	0	0	0	

Sample ID: LCS-30993	SampType: LCS	TestCode: PAHLL_S	Units: µg/Kg	Prep Date: 3/13/2012	Run ID: 5975Q_120314B						
Client ID: ZZZZ	Batch ID: 30993	TestNo: 8270SIM		Analysis Date: 3/14/2012	SeqNo: 822371						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	263.3	6.67	333.3	0	79	39.6	107	0	0	0	
Benzo(g,h,i)perylene	256.7	6.67	333.3	0	77	49.7	135	0	0	0	
Chrysene	285.3	6.67	333.3	0	85.6	57.1	130	0	0	0	
Naphthalene	262.7	6.67	333.3	0	78.8	29.1	109	0	0	0	
Phenanthrene	274.7	6.67	333.3	0	82.4	48.4	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 S - Spike Recovery outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits  
 R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL\_S

Sample ID: CCV-30993	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5975Q_120314B						
Client ID: ZZZZZ	Batch ID: 30993	TestNo: 8270SIM		Analysis Date: 3/14/2012	SeqNo: 822370						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	60	6.67	66.67	0	90	70	130	0	0	0	0
Acenaphthylene	60.67	6.67	66.67	0	91	70	130	0	0	0	0
Anthracene	64	6.67	66.67	0	96	70	130	0	0	0	0
Benzo(a)anthracene	54.67	6.67	66.67	0	82	70	130	0	0	0	0
Benzo(a)pyrene	59.33	6.67	66.67	0	89	70	130	0	0	0	0
Benzo(b)fluoranthene	56.67	6.67	66.67	0	85	70	130	0	0	0	0
Benzo(g,h,i)perylene	58.67	6.67	66.67	0	88	70	130	0	0	0	0
Benzo(k)fluoranthene	68	6.67	66.67	0	102	70	130	0	0	0	0
Chrysene	64	6.67	66.67	0	96	70	130	0	0	0	0
Dibenz(a,h)anthracene	59.33	6.67	66.67	0	89	70	130	0	0	0	0
Fluoranthene	63.33	6.67	66.67	0	95	70	130	0	0	0	0
Fluorene	70	6.67	66.67	0	105	70	130	0	0	0	0
Indeno(1,2,3-cd)pyrene	56.67	6.67	66.67	0	85	70	130	0	0	0	0
Naphthalene	65.33	6.67	66.67	0	98	70	130	0	0	0	0
Phenanthrene	60.67	6.67	66.67	0	91	70	130	0	0	0	0
Pyrene	54.67	6.67	66.67	0	82	70	130	0	0	0	0

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203038  
 Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL\_W

Sample ID: MB-30955	SampType: MBLK	TestCode: PAHLL_W	Units: µg/L	Prep Date: 3/5/2012	Run ID: 5975Q_120308A
Client ID: ZZZZZ	Batch ID: 30955	TestNo: 8270SIM		Analysis Date: 3/8/2012	SeqNo: 820972

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	0.02	0.100									JCN
2-Methylnaphthalene	0.02	0.100									JCN
Acenaphthene	0.04	0.100									JCN
Acenaphthylene	0.02	0.100									JCN
Anthracene	0.02	0.100									JCN
Benz(a)anthracene	0.04	0.100									JCN
Benzo(a)pyrene	0.06	0.100									JCN
Benzo(b)fluoranthene	0.04	0.100									JCN
Benzo(g,h,i)perylene	ND	0.100									CN
Benzo(k)fluoranthene	0.02	0.100									JCN
Chrysene	0.02	0.100									JCN
Dibenz(a,h)anthracene	ND	0.100									CN
Fluoranthene	ND	0.100									CN
Fluorene	0.02	0.100									JCN
Indeno(1,2,3-cd)pyrene	0.04	0.100									JCN
Naphthalene	0.02	0.100									JCN
Phenanthrene	ND	0.100									CN
Pyrene	ND	0.100									CN
Surr: 2-Fluorobiphenyl	0.04	2.00	200	0	0.02	18.6	106	0	0	0	JSCN
Surr: Nitrobenzene-d5	ND	2.00	200	0	0	17	130	0	0	0	SCN
Surr: p-Terphenyl-d14	0.1	2.00	200	0	0.05	39.6	131	0	0	0	JSCN

Sample ID: CCV-30955	SampType: CCV	TestCode: PAHLL_W	Units: µg/L	Prep Date:	Run ID: 5975Q_120308A
Client ID: ZZZZZ	Batch ID: 30955	TestNo: 8270SIM		Analysis Date: 3/8/2012	SeqNo: 820971

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.12	0.0500	1	0	112	70	130	0	0	0	
2-Methylnaphthalene	1.01	0.0500	1	0	101	70	130	0	0	0	
Acenaphthene	0.88	0.0500	1	0	88	70	130	0	0	0	
Acenaphthylene	0.9	0.0500	1	0	90	70	130	0	0	0	
Anthracene	0.86	0.0500	1	0	86	70	130	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
 Page 23 of 24

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203038

Project: Carson - Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL\_W

Sample ID: CCV-30955	SampType: CCV	TestCode: PAHLL_W	Units: µg/L	Prep Date:	Run ID: 5975Q_120308A						
Client ID: ZZZZ	Batch ID: 30955	TestNo: 8270SIM		Analysis Date: 3/8/2012	SeqNo: 820971						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benz(a)anthracene	0.85	0.0500	1	0	85	70	130	0	0	0	
Benzo(a)pyrene	0.9	0.0500	1	0	90	70	130	0	0	0	
Benzo(b)fluoranthene	0.99	0.0500	1	0	99	70	130	0	0	0	
Benzo(g,h,i)perylene	0.82	0.0500	1	0	82	70	130	0	0	0	
Benzo(k)fluoranthene	1.02	0.0500	1	0	102	70	130	0	0	0	
Chrysene	0.95	0.0500	1	0	95	70	130	0	0	0	
Dibenz(a,h)anthracene	0.81	0.0500	1	0	81	70	130	0	0	0	
Fluoranthene	0.84	0.0500	1	0	84	70	130	0	0	0	
Fluorene	0.91	0.0500	1	0	91	70	130	0	0	0	
Indeno(1,2,3-cd)pyrene	0.92	0.0500	1	0	92	70	130	0	0	0	
Naphthalene	0.96	0.0500	1	0	96	70	130	0	0	0	
Phenanthrene	0.89	0.0500	1	0	89	70	130	0	0	0	
Pyrene	0.87	0.0500	1	0	87	70	130	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
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## KEY TO FLAGS

Rev. May 12, 2010

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- A4 The product appears to be aged or degraded diesel.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended holding time.
- HT At clients request, samples was analyzed outside of recommended holding time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits; post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- \* The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.



# CHAIN OF CUSTODY RECORD

## Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
Phone: 503-607-1331  
Fax: 503-607-1336

Contact Person/Project Manager: Tim O'Brien

Company: \_\_\_\_\_

Address: \_\_\_\_\_

Phone: \_\_\_\_\_

Fax: \_\_\_\_\_

Collected By: [Signature]

Signature: [Signature]

Printed: Tim O'Brien

Project No. \_\_\_\_\_

Project Name: CARSON GOLDMINE

Project Site Location OR WA X Other \_\_\_\_\_

Invoice To: 4C Emerald

P.O. No. \_\_\_\_\_

Signature: \_\_\_\_\_

Printed: \_\_\_\_\_

Turn Around Time \_\_\_\_\_

Normal 5-7 Business Days

Rush Spec

\* Specify \_\_\_\_\_

Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix
3/1	1700	S-CENTER - 0-6"	?
	1700	N-CENTER - 0-6"	
	1700	NW - 0-6"	
	1700	NB - 0-6"	
	1700	SB - 0-6"	
	1700	SW - 0-6"	
3/2	10:45	EXC PIT WATER	
	10:10	S-CENTER @ 54"	
	10:10	C-CENTER @ 56"	
	11:30	NW - 62"	
	11:30	NW - 36"	
	13:15	N-CENTER 58"	

No. of Containers	Analyses					For Laboratory Use Lab Job No. <u>1203D38</u>
	1st/1B PAH's	2nd/2B PAH's	3rd/3B PAH's	82608 VOL'S	1st/1B PAH's	
X	X	X	X	X	X	Shipped Via _____
X	X	X	X	X	X	Air Bill No. _____
X	X	X	X	X	X	Temperature On Receipt _____ °C
X	X	X	X	X	X	Specialty Analytical Containers? Y/N
X	X	X	X	X	X	Specialty Analytical Trip Blanks? Y/N
						Comments: <u>10 PM 3/19/12</u>
						Lab I.D. _____

Relinquished By: [Signature] Date: 3/2 Time: 4:30

Received By: \_\_\_\_\_ Company: \_\_\_\_\_

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.  
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: Andy Hoggard

Date: 3/2/12 Time: 16:20



# CHAIN OF CUSTODY RECORD

## Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
Phone: 503-607-1331  
Fax: 503-607-1336

Contact Person/Project Manager Tim O'Brien

Company \_\_\_\_\_  
Address \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_  
Project No. \_\_\_\_\_ Project Name SAR-501 - GOLDEN-DALES  
Project Site Location OR WA X Other \_\_\_\_\_  
Invoice To YCS P.O. No. \_\_\_\_\_

Collected By: \_\_\_\_\_  
Signature: [Signature]  
Printed: Tim O'Brien

Signature: \_\_\_\_\_  
Printed: \_\_\_\_\_

Turn Around Time \_\_\_\_\_  
 Normal 5-7 Business Days  
 Rush \_\_\_\_\_ Specify \_\_\_\_\_

Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses		For Laboratory Use		
					Y/N	Y/N	Lab Job No.	Comments	
3/2		B-10-w	w	2	X			1203038	
	12:14	B-1-w		2	X				
	12:23	B-9-w		2	X				
	12:33	B-4-w		2	X				
	12:40	B-8-w		2	X				
	12:15	N-6-10-w-36"	s	6	X				
	1:27	B-12-w	w	2	X				
	1:37	B-13-w		2	X				
	1:41	B-11-w		2	X				
	1:03	B-6-w		2	X				
		B-11-10	w	2	X				

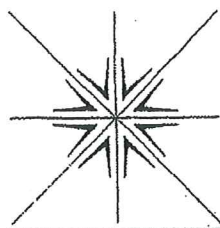
Relinquished By: [Signature] Date: 3/2 Time: 4:00  
Company: \_\_\_\_\_

Relinquished By: \_\_\_\_\_  
Company: \_\_\_\_\_

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.  
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: [Signature]

Date: 3/12/10 Time: 16:20



# Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
(503) 607-1331  
Fax (503) 607-1336

March 12, 2012

Scott Michaels  
4Cs Environmental, Inc.  
1590 SE Uglow Street  
Dallas, OR 97338

TEL: (503) 606-3020

FAX: (503) 606-3120

RE: Goldendale / 775

Dear Scott Michaels:

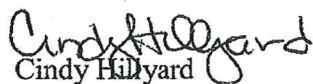
Order No.: 1203077

Specialty Analytical received 2 samples on 3/8/2012 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

  
Cindy Hillyard

Project Manager

  
Technical Review

CC:  
Tim O'Gara

**Specialty Analytical**

Date: 12-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Goldendale / 775

**Lab Order:** 1203077

**Lab ID:** 1203077-01

**Collection Date:** 3/7/2012 3:29:00 AM

**Client Sample ID:** Water

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>		Analyst: kh		
Diesel	34.1	0.0780		mg/L	1	3/9/2012
Lube Oil	4.31	0.195	A2	mg/L	1	3/9/2012
Surr: o-Terphenyl	409	50-150	S,MI	%REC	1	3/9/2012
<b>LOW LEVEL PAH BY GC/MS SIM</b>		<b>8270SIM</b>		Analyst: bda		
1-Methylnaphthalene	205	2.57		µg/L	50	3/9/2012 1:01:00 PM
2-Methylnaphthalene	342	2.57		µg/L	50	3/9/2012 1:01:00 PM
Acenaphthene	3.75	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Acenaphthylene	ND	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Anthracene	1.46	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Benz(a)anthracene	0.505	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Benzo(a)pyrene	0.144	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Benzo(b)fluoranthene	0.185	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Benzo(g,h,i)perylene	0.227	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Benzo(k)fluoranthene	0.0824	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Chrysene	0.227	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Dibenz(a,h)anthracene	ND	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Fluoranthene	0.690	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Fluorene	9.27	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Indeno(1,2,3-cd)pyrene	0.0824	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Naphthalene	300	2.57		µg/L	50	3/9/2012 1:01:00 PM
Phenanthrene	15.9	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Pyrene	1.22	0.0515		µg/L	1	3/9/2012 1:28:00 PM
Surr: 2-Fluorobiphenyl	56.2	18.6-106		%REC	1	3/9/2012 1:28:00 PM
Surr: Nitrobenzene-d5	71.8	17-130		%REC	1	3/9/2012 1:28:00 PM
Surr: p-Terphenyl-d14	69.1	39.6-131		%REC	1	3/9/2012 1:28:00 PM

**Specialty Analytical**

Date: 12-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Goldendale / 775

**Lab Order:** 1203077

**Lab ID:** 1203077-02  
**Client Sample ID:** Water

**Collection Date:** 3/7/2012 3:33:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>DISSOLVED BTEX - RBC</b>						
		<b>SW8021B</b>				Analyst: jrp
Benzene	26	0.60		µg/L	2	3/9/2012
Toluene	86	1.0		µg/L	2	3/9/2012
Ethylbenzene	37	1.0		µg/L	2	3/9/2012
Xylenes, Total	270	3.0		µg/L	2	3/9/2012
Surr: 4-Bromofluorobenzene	86.0	74.8-126		%REC	2	3/9/2012
<b>NWTPH-GX</b>						
		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	3400	200		µg/L	2	3/9/2012
Surr: 4-Bromofluorobenzene	81.4	50-150		%REC	2	3/9/2012



Specialty Analytical

Date: 12-Mar-12

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203077  
 Project: Goldendale / 775

ANALYTICAL QC SUMMARY REPORT

TestCode: BTEX\_RBDM\_W\_D

Sample ID: MB-30973	SampType: MBLK	TestCode: BTEX_RBDM	Units: µg/L	Prep Date:	Run ID: GC-I_120309A						
Client ID: ZZZZZ	Batch ID: 30973	TestNo: SW8021B		Analysis Date: 3/9/2012	SeqNo: 821161						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.30									J
Toluene	0.16	0.50									J
Ethylbenzene	0.1	0.50									J
Xylenes, Total	0.34	1.5									J
Surr: 4-Bromofluorobenzene	91.48	0	100	0	91.5	74.8	126	0	0	0	J

Sample ID: LCS-30973	SampType: LCS	TestCode: BTEX_RBDM	Units: µg/L	Prep Date:	Run ID: GC-I_120309A						
Client ID: ZZZZZ	Batch ID: 30973	TestNo: SW8021B		Analysis Date: 3/9/2012	SeqNo: 821160						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.6	0.30	50	0	87.2	75.8	113	0	0	0	
Toluene	48.29	0.50	50	0	96.6	77	116	0	0	0	
Ethylbenzene	48.36	0.50	50	0	96.7	76.6	118	0	0	0	
Xylenes, Total	148.3	1.5	150	0	98.9	76.7	118	0	0	0	

Sample ID: A1203068-02AMS	SampType: MS	TestCode: BTEX_RBDM	Units: µg/L	Prep Date:	Run ID: GC-I_120309A						
Client ID: ZZZZZ	Batch ID: 30973	TestNo: SW8021B		Analysis Date: 3/9/2012	SeqNo: 821164						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	20.9	0.30	25	0	83.6	67.8	118	0	0	0	
Toluene	23.01	0.50	25	0.18	91.3	74.7	117	0	0	0	
Ethylbenzene	23.62	0.50	25	0.23	93.6	74.5	115	0	0	0	
Xylenes, Total	73.34	1.5	75	0.58	97	76.8	120	0	0	0	

Sample ID: A1203068-02AMSD	SampType: MSD	TestCode: BTEX_RBDM	Units: µg/L	Prep Date:	Run ID: GC-I_120309A						
Client ID: ZZZZZ	Batch ID: 30973	TestNo: SW8021B		Analysis Date: 3/9/2012	SeqNo: 821165						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.83	0.30	25	0	87.3	67.8	118	20.9	4.35	20	

Qualifiers: ND - Not Detected at the Reporting Limit  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits

# ANALYTICAL QC SUMMARY REPORT

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203077

Project: Goldendale / 775

TestCode: BTEX\_RBDM\_W\_D

Sample ID: A1203068-02AMSD	SampType: MSD	TestCode: BTEX_RBDM	Units: µg/L	Prep Date:	Run ID: GC-I_120309A						
Client ID: ZZZZZ	Batch ID: 30973	TestNo: SW8021B		Analysis Date: 3/9/2012	SeqNo: 821165						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	24.01	0.50	25	0.18	95.3	74.7	117	23.01	4.25	20	
Ethylbenzene	24.65	0.50	25	0.23	97.7	74.5	115	23.62	4.27	20	
Xylenes, Total	76.11	1.5	75	0.58	101	76.8	120	73.34	3.71	20	

Sample ID: CCV	SampType: CCV	TestCode: BTEX_RBDM	Units: µg/L	Prep Date:	Run ID: GC-I_120309A						
Client ID: ZZZZZ	Batch ID: 30973	TestNo: SW8021B		Analysis Date: 3/9/2012	SeqNo: 821159						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.6	0.30	50	0	87.2	85	115	0	0	0	
Toluene	48.29	0.50	50	0	96.6	85	115	0	0	0	
Ethylbenzene	48.36	0.50	50	0	96.7	85	115	0	0	0	
Xylenes, Total	148.3	1.5	150	0	98.9	85	115	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203077

Project: Goldendale / 775

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDXLL\_W

Sample ID:	MB-30963	SampType:	MBLK	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/8/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821231
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	0.0800									
Lube Oil	ND	0.200									
Surr: o-Terphenyl	0.2331	0	0.2	0	117	50	150	0	0	0	

Sample ID:	LCS-30963	SampType:	LCS	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/8/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821441
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	0.8421	0.0800	1	0	84.2	60.7	121	0	0	0	
Lube Oil	1.008	0.200	1	0	101	64	126	0	0	0	

Sample ID:	LCSD-30963	SampType:	LCSD	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/8/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821442
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	0.8097	0.0800	1	0	81	60.7	121	0.8421	3.93	20	
Lube Oil	0.9994	0.200	1	0	99.9	64	126	1.008	0.900	20	

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/9/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821230
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	8.737	0.0800	8.184	0	107	85	115	0	0	0	
Lube Oil	4.656	0.200	4.2	0	111	85	115	0	0	0	

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/9/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821445
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	6.524	0.0800	6.138	0	106	85	115	0	0	0	

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/9/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821445
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	8.737	0.0800	8.184	0	107	85	115	0	0	0	
Lube Oil	4.656	0.200	4.2	0	111	85	115	0	0	0	

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/9/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821445
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	6.524	0.0800	6.138	0	106	85	115	0	0	0	

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHDXLL	Units:	mg/L	Prep Date:	3/9/2012	Run ID:	GC-M_120309A
Client ID:	ZZZZZ	Batch ID:	30963	TestNo:	NWTPH-Dx			Analysis Date:	3/9/2012	SeqNo:	821445
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	6.524	0.0800	6.138	0	106	85	115	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203077  
**Project:** Goldendale / 775

## ANALYTICAL QC SUMMARY REPORT

**TestCode:** NWTPHDXLL\_W

Sample ID: <b>CCV</b>	SampType: <b>CCV</b>	TestCode: <b>NWTPHDXLL</b>	Units: <b>mg/L</b>	Prep Date:	Run ID: <b>GC-M_120309A</b>					
Client ID: <b>ZZZZZ</b>	Batch ID: <b>30963</b>	TestNo: <b>NWTPH-Dx</b>		Analysis Date: <b>3/9/2012</b>	SeqNo: <b>821445</b>					
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	3.276	0.200	3.15	104	85	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203077

Project: Goldendale / 775

TestCode: NWTPHGX\_W

Sample ID: MB-30974	SampType: MBLK	TestCode: NWTPHGX_	Units: µg/L	Prep Date: 3/9/2012	Run ID: GC-I_120309B						
Client ID: ZZZZZ	Batch ID: 30974	TestNo: NWTPH-Gx		Analysis Date: 3/9/2012	SeqNo: 821167						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	53.12	100			92.8	50	150	0	0	0	J
Surr: 4-Bromofluorobenzene	92.82	0	100								

Sample ID: LCS-30974	SampType: LCS	TestCode: NWTPHGX_	Units: µg/L	Prep Date: 3/9/2012	Run ID: GC-I_120309B						
Client ID: ZZZZZ	Batch ID: 30974	TestNo: NWTPH-Gx		Analysis Date: 3/9/2012	SeqNo: 821166						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	2507	100	2500	0	100	74.4	128	0	0	0	

Sample ID: 1203077-02ADUP	SampType: DUP	TestCode: NWTPHGX_	Units: µg/L	Prep Date: 3/9/2012	Run ID: GC-I_120309B						
Client ID: Water	Batch ID: 30974	TestNo: NWTPH-Gx		Analysis Date: 3/9/2012	SeqNo: 821169						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	3624	200	0	0	0	0	0	3396	6.49	20	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_	Units: µg/L	Prep Date:	Run ID: GC-I_120309B						
Client ID: ZZZZZ	Batch ID: 30974	TestNo: NWTPH-Gx		Analysis Date: 3/9/2012	SeqNo: 821170						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	2510	100	3000	0	83.7	80	120	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203077

Project: Goldendale / 775

# ANALYTICAL QC SUMMARY REPORT

TestCode: PAH\_WWA

Sample ID: MB-30967	SampType: MBLK	TestCode: PAH_WWA	Units: µg/L	Prep Date: 3/8/2012	Run ID: 5975Q_120309B						
Client ID: ZZZZ	Batch ID: 30967	TestNo: 8270SIM		Analysis Date: 3/9/2012	SeqNo: 821196						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1-Methylnaphthalene	0.01	0.0500									J
2-Methylnaphthalene	0.02	0.0500									J
Acenaphthene	0.01	0.0500									J
Acenaphthylene	0.01	0.0500									J
Anthracene	ND	0.0500									J
Benz(a)anthracene	0.02	0.0500									J
Benzo(a)pyrene	0.01	0.0500									J
Benzo(b)fluoranthene	0.01	0.0500									J
Benzo(g,h,i)perylene	0.01	0.0500									J
Benzo(k)fluoranthene	0.01	0.0500									J
Chrysene	0.02	0.0500									J
Dibenz(a,h)anthracene	0.01	0.0500									J
Fluoranthene	ND	0.0500									J
Fluorene	ND	0.0500									J
Indeno(1,2,3-cd)pyrene	0.01	0.0500									J
Naphthalene	0.03	0.0500									J
Phenanthrene	0.01	0.0500									J
Pyrene	ND	0.0500									J
Surr: 2-Fluorobiphenyl	41.58	1.00	100	0	41.6	18.6	106	0	0	0	
Surr: Nitrobenzene-d5	56.02	1.00	100	0	56	17	130	0	0	0	
Surr: p-Terphenyl-d14	45.88	1.00	100	0	45.9	39.6	131	0	0	0	

Sample ID: LCS-30967	SampType: LCS	TestCode: PAH_WWA	Units: µg/L	Prep Date: 3/8/2012	Run ID: 5975Q_120309B						
Client ID: ZZZZ	Batch ID: 30967	TestNo: 8270SIM		Analysis Date: 3/9/2012	SeqNo: 821217						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Acenaphthene	3.37	0.0500	5	0	67.4	35.1	83.6	0	0	0	
Benzo(a)pyrene	3.37	0.0500	5	0	67.4	23.4	103	0	0	0	
Benzo(g,h,i)perylene	3.26	0.0500	5	0	65.2	20.8	84.4	0	0	0	
Chrysene	3.72	0.0500	5	0	74.4	39.1	103	0	0	0	
Naphthalene	3.35	0.0500	5	0	67	25.6	88.8	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits

# ANALYTICAL QC SUMMARY REPORT

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203077  
 Project: Goldendale / 775

TestCode: PAH\_WWA

Sample ID: LCS-30967	SampType: LCS	TestCode: PAH_WWA	Units: µg/L	Prep Date: 3/8/2012	Run ID: 5975Q_120309B						
Client ID: ZZZZZ	Batch ID: 30967	TestNo: 8270S1M		Analysis Date: 3/9/2012	SeqNo: 821217						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Phenanthrene	3.56	0.0500	5	0	71.2	38.1	92.9	0	0	0	
Pyrene	3.64	0.0500	5	0	72.8	41.3	101	0	0	0	

Sample ID: LCSD-30967	SampType: LCSD	TestCode: PAH_WWA	Units: µg/L	Prep Date: 3/8/2012	Run ID: 5975Q_120309B						
Client ID: ZZZZZ	Batch ID: 30967	TestNo: 8270S1M		Analysis Date: 3/9/2012	SeqNo: 821218						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	3.32	0.0500	5	0	66.4	35.1	83.6	3.37	1.49	20	
Benzo(a)pyrene	3.49	0.0500	5	0	69.8	23.4	103	3.37	3.50	20	
Benzo(g,h,i)perylene	3.34	0.0500	5	0	66.8	20.8	84.4	3.26	2.42	20	
Chrysene	3.94	0.0500	5	0	78.8	39.1	103	3.72	5.74	20	
Naphthalene	3.28	0.0500	5	0	65.6	25.6	88.8	3.35	2.11	20	
Phenanthrene	3.61	0.0500	5	0	72.2	38.1	92.9	3.56	1.39	20	
Pyrene	3.52	0.0500	5	0	70.4	41.3	101	3.64	3.35	20	

Sample ID: CCV-30967	SampType: CCV	TestCode: PAH_WWA	Units: µg/L	Prep Date: 3/9/2012	Run ID: 5975Q_120309B						
Client ID: ZZZZZ	Batch ID: 30967	TestNo: 8270S1M		Analysis Date: 3/9/2012	SeqNo: 821195						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1-Methylnaphthalene	1.18	0.0500	1	0	118	80	120	0	0	0	
2-Methylnaphthalene	1.15	0.0500	1	0	115	80	120	0	0	0	
Acenaphthene	0.97	0.0500	1	0	97	80	120	0	0	0	
Acenaphthylene	0.97	0.0500	1	0	97	80	120	0	0	0	
Anthracene	1.01	0.0500	1	0	101	80	120	0	0	0	
Benzo(a)anthracene	0.9	0.0500	1	0	90	80	120	0	0	0	
Benzo(a)pyrene	0.91	0.0500	1	0	91	80	120	0	0	0	
Benzo(b)fluoranthene	0.96	0.0500	1	0	96	80	120	0	0	0	
Benzo(g,h,i)perylene	0.91	0.0500	1	0	91	80	120	0	0	0	
Benzo(k)fluoranthene	1.06	0.0500	1	0	106	80	120	0	0	0	
Chrysene	1	0.0500	1	0	100	80	120	0	0	0	
Dibenz(a,h)anthracene	0.88	0.0500	1	0	88	80	120	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203077  
 Project: Goldendale / 775

# ANALYTICAL QC SUMMARY REPORT

TestCode: PAH\_WWA

Sample ID: CCV-30967	SampType: CCV	TestCode: PAH_WWA	Units: µg/L	Prep Date:	Run ID: 5975Q_120309B						
Client ID: ZZZZZ	Batch ID: 30967	TestNo: 8270SIM		Analysis Date: 3/9/2012	SeqNo: 821195						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Fluoranthene	0.96	0.0500	1	0	96	80	120	0	0	0	
Fluorene	1.14	0.0500	1	0	114	80	120	0	0	0	
Indeno(1,2,3-cd)pyrene	0.86	0.0500	1	0	86	80	120	0	0	0	
Naphthalene	1.09	0.0500	1	0	109	80	120	0	0	0	
Phenanthrene	0.97	0.0500	1	0	97	80	120	0	0	0	
Pyrene	0.98	0.0500	1	0	98	80	120	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank



## KEY TO FLAGS

Rev. May 12, 2010

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- A4 The product appears to be aged or degraded diesel.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended holding time.
- HT At clients request, samples was analyzed outside of recommended holding time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits; post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- \* The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Page \_\_\_ of \_\_\_

Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
Phone: 503-607-1331  
Fax: 503-607-1336

Contact Person/Project Manager SCOTT

Company HC'S ENVIRONMENTAL INC.

Address 1590 SE UGLOW AVE

DALLAS OR

Phone 503-606-3020 Fax 503-606-3120

Project No. 775 Project Name GOLDENDALE

Project Site Location OR WA X Other \_\_\_\_\_

Invoice To HC's P.O. No. 775

Collected By: [Signature]

Signature

Printed SCOTT MICHAELS

Signature \_\_\_\_\_

Printed \_\_\_\_\_

Turn Around Time \_\_\_\_\_

Normal 5-7 Business Days

Rush RUSH ASAP  
Specify \_\_\_\_\_

Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	Received By:	Time
3-7-12	329	AMBER X3	Water		0840
3-7-12	332	<del>AMBER X3</del> VOA 40 OIL X3	<del>Water</del> Milk		
	333	<del>VOA 40 ML X2</del>	<del>Water</del>		
	333	VOA 40 ML X1			
	329	AMBER X2			
	329	AMBER X1			

No. of Containers	Analyses	For Laboratory Use	
		Lab Job No.	Lab I.D.
		12030077	
		Shipped Via _____	
		Air Bill No. _____	
		Temperature On Receipt _____ °C	
		Specialty Analytical Containers? Y/N	
		Specialty Analytical Trip Blanks? Y/N	
		Comments	
		1 AMBER	
		1 VOA	
		ARE SPARE PLEASE	
		CALL SCOTT 503-930-2911	

Reinquired By: [Signature] Date 3/8/12 Time 0840

Received By: [Signature] Company: \_\_\_\_\_

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt. Samples held beyond 60 days subject to storage fee(s)

Received By: [Signature] Date 3/8/12 Time 0840

RE: Carson-Goldendale  
Dear Scott Michaels:

Order No.: 1203027

Specialty Analytical received 33 samples on 3/2/2012 for the analyses presented in the following report.

REVISED REPORT VERSION 1. Please see case narrative for information on revision.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

Sincerely,

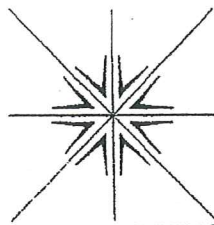
  
Cindy Hillyard  
Project Manager

  
Technical Review

CC:  
Tim O'Gara

*Specialty Analytical, An Oregon Corporation*





# Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
(503) 607-1331  
Fax (503) 607-1336

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March 23, 2012

Scott Michaels  
4Cs Environmental, Inc.  
1590 SE Uglow Street  
Dallas, OR 97338

TEL: (503) 606-3020  
FAX: (503) 606-3100



**Specialty Analytical**

**Date:** 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Project:** Carson-Goldendale  
**Lab Order:** 1203027

**CASE NARRATIVE**

Report Revision 1.

This report contains the original results with the addition of the following analytical results:

At the request of the client, Total Lead by EPA 6010, TCLP Lead by EPA 1311/6010, VOC's by EPA 8260B and TCLP Benzene by EPA 1311/8260B were added to Specialty Analytical sample number 1203027-12 (Client ID B-6-5).

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-01

**Client Sample ID:** B-1-5  
**Collection Date:** 3/1/2012 10:32:00 AM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0641		mg/Kg-dry	1	3/6/2012
Toluene	0.316	0.257		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.257		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.770		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	92.5	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.41		mg/Kg-dry	1	3/2/2012
Surr: 4-Bromofluorobenzene	134	50-150		%REC	1	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-02**Client Sample ID:** B-1-W  
**Collection Date:** 3/1/2012 2:52:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: das
Benzene	0.485	0.300		µg/L	1	3/2/2012
Toluene	1.17	0.500		µg/L	1	3/2/2012
Ethylbenzene	1.43	0.500		µg/L	1	3/2/2012
Xylenes, Total	1.99	1.50		µg/L	1	3/2/2012
Surr: 4-Bromofluorobenzene	82.1	74.8-126		%REC	1	3/2/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	227	100	A	µg/L	1	3/2/2012
Surr: 4-Bromofluorobenzene	88.9	50-150		%REC	1	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-03**Client Sample ID:** B-2-5  
**Collection Date:** 3/1/2012 10:54:00 AM**Matrix:** SOIL

<b>Analyses</b>	<b>Result</b>	<b>Limit</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				<b>Analyst: jrp</b>
Benzene	ND	0.0615		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.246		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.246		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.738		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	94.0	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				<b>Analyst: das</b>
Gasoline	ND	6.15		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	88.3	50-150		%REC	1	3/5/2012



**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-04**Client Sample ID:** B-2-7  
**Collection Date:** 3/1/2012 10:59:00 AM**Matrix:** SOIL

<b>Analyses</b>	<b>Result</b>	<b>Limit</b>	<b>Qual</b>	<b>Units</b>	<b>DF</b>	<b>Date Analyzed</b>
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0581		mg/Kg-dry	1	3/7/2012
Toluene	0.543	0.233		mg/Kg-dry	1	3/7/2012
Ethylbenzene	1.12	0.233		mg/Kg-dry	1	3/7/2012
Xylenes, Total	2.62	0.698		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	102	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	256	5.81	A	mg/Kg-dry	1	3/2/2012
Surr: 4-Bromofluorobenzene	166	50-150	S,MI	%REC	1	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-05

**Client Sample ID:** B-2-W  
**Collection Date:** 3/1/2012 11:08:00 AM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: das
Benzene	20.7	0.300		µg/L	1	3/2/2012
Toluene	14.0	0.500		µg/L	1	3/2/2012
Ethylbenzene	615	2.50		µg/L	5	3/3/2012
Xylenes, Total	961	7.50		µg/L	5	3/3/2012
Surr: 4-Bromofluorobenzene	78.1	74.8-126		%REC	1	3/2/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	10500	500		µg/L	5	3/2/2012
Surr: 4-Bromofluorobenzene	95.0	50-150		%REC	5	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-06

**Client Sample ID:** B-3-5  
**Collection Date:** 3/1/2012 11:23:00 AM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0602		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.241		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.241		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.722		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	87.2	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.02		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	83.3	50-150		%REC	1	3/5/2012

# Specialty Analytical

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-07

**Client Sample ID:** B-3-7  
**Collection Date:** 3/1/2012 11:28:00 AM

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0825		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.330		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.330		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.990		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	92.8	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	15.7	8.25		mg/Kg-dry	1	3/4/2012
Surr: 4-Bromofluorobenzene	91.3	50-150		%REC	1	3/4/2012



**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-08

**Client Sample ID:** B-4-5  
**Collection Date:** 3/1/2012 12:08:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0626		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.250		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.250		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.751		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	93.2	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	19.9	6.26		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	88.1	50-150		%REC	1	3/5/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-09

**Client Sample ID:** B-4-7  
**Collection Date:** 3/1/2012 12:12:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0667		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.267		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.267		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.800		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	92.8	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.67		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	83.1	50-150		%REC	1	3/5/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-10

**Client Sample ID:** B-5-5  
**Collection Date:** 3/1/2012 12:27:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0649		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.260		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.260		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.779		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	89.2	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.49		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	87.8	50-150		%REC	1	3/5/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-11

**Client Sample ID:** B-5-8  
**Collection Date:** 3/1/2012 12:37:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	160	18.2	A4	mg/Kg-dry	1	3/6/2012
Lube Oil	ND	60.8		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	130	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0536		mg/Kg-dry	1	3/7/2012
Toluene	ND	0.214		mg/Kg-dry	1	3/7/2012
Ethylbenzene	ND	0.214		mg/Kg-dry	1	3/7/2012
Xylenes, Total	ND	0.643		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	89.7	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	5.36		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	87.1	50-150		%REC	1	3/5/2012



**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-12

**Client Sample ID:** B-6-5  
**Collection Date:** 3/1/2012 1:03:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>		Analyst: jrp		
Benzene	29.5	0.565		mg/Kg-dry	10	3/7/2012
Toluene	155	2.26		mg/Kg-dry	10	3/7/2012
Ethylbenzene	36.3	2.26		mg/Kg-dry	10	3/7/2012
Xylenes, Total	176	6.78		mg/Kg-dry	10	3/7/2012
Surr: 4-Bromofluorobenzene	86.0	42.6-126		%REC	10	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: das		
Gasoline	1330	56.5		mg/Kg-dry	10	3/4/2012
Surr: 4-Bromofluorobenzene	109	50-150		%REC	10	3/4/2012
<b>TOTAL METALS BY ICP</b>		<b>E6010</b>		Analyst: cmt		
Lead	ND	1.96		mg/Kg-dry	1	3/20/2012 5:57:29 PM
<b>TCLP METALS</b>		<b>E1311/6010</b>		Analyst: cmt		
Lead, TCLP	ND	0.100		mg/L	1	3/21/2012 11:38:13 AM
<b>VOLATILES, TCLP LEACHED</b>		<b>SW1311/8260B</b>		Analyst: rkg		
Benzene	ND	0.050		mg/L	1	3/21/2012 3:00:00 PM
Surr: 1,2-Dichloroethane-d4	95.9	72.8-113		%REC	1	3/21/2012 3:00:00 PM
Surr: 4-Bromofluorobenzene	107	83.4-125		%REC	1	3/21/2012 3:00:00 PM
Surr: Dibromofluoromethane	108	79.4-124		%REC	1	3/21/2012 3:00:00 PM
Surr: Toluene-d8	109	88.6-129		%REC	1	3/21/2012 3:00:00 PM
<b>VOLATILES BY GC/MS</b>		<b>SW8260B</b>		Analyst: rkg		
1,1,1,2-Tetrachloroethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,1,1-Trichloroethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,1,2,2-Tetrachloroethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,1,2-Trichloroethane	125	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,1-Dichloroethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,1-Dichloroethene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,1-Dichloropropene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2,3-Trichlorobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2,3-Trichloropropane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2,4-Trichlorobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2,4-Trimethylbenzene	155	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2-Dibromo-3-chloropropane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2-Dibromoethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2-Dichlorobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2-Dichloroethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,2-Dichloropropane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,3,5-Trimethylbenzene	112	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,3-Dichlorobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
1,3-Dichloropropane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-12

**Client Sample ID:** B-6-5  
**Collection Date:** 3/1/2012 1:03:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>VOLATILES BY GC/MS</b>		<b>SW8260B</b>				Analyst: rkg
1,4-Dichlorobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
2,2-Dichloropropane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
2-Butanone	ND	22.2		ug/Kg-dry	1	3/20/2012 11:13:00 AM
2-Chlorotoluene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
2-Hexanone	ND	22.2		ug/Kg-dry	1	3/20/2012 11:13:00 AM
4-Chlorotoluene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
4-Isopropyltoluene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
4-Methyl-2-pentanone	ND	22.2		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Acetone	ND	55.5		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Benzene	20500	2060		ug/Kg-dry	100	3/20/2012 2:25:00 PM
Bromobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Bromochloromethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Bromodichloromethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Bromoform	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Bromomethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Carbon Disulfide	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Carbon tetrachloride	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Chlorobenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Chloroethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Chloroform	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Chloromethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
cis-1,2-Dichloroethene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
cis-1,3-Dichloropropene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Dibromochloromethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Dibromomethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Dichlorodifluoromethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Ethylbenzene	199	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Hexachlorobutadiene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Isopropylbenzene	36.3	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
m,p-Xylene	94000	20600		ug/Kg-dry	500	3/20/2012 1:58:00 PM
Methyl tert-butyl ether	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Methylene Chloride	ND	55.5		ug/Kg-dry	1	3/20/2012 11:13:00 AM
n-Butylbenzene	23.3	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
n-Propylbenzene	95.2	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Naphthalene	42.8	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
o-Xylene	29500	2060		ug/Kg-dry	100	3/20/2012 2:25:00 PM
sec-Butylbenzene	15.6	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Styrene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
tert-Butylbenzene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Tetrachloroethene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Toluene	116000	10300		ug/Kg-dry	500	3/20/2012 1:58:00 PM

# Specialty Analytical

Date: 23-Mar-12

CLIENT: 4Cs Environmental, Inc.  
Lab Order: 1203027  
Project: Carson-Goldendale  
Lab ID: 1203027-12

Client Sample ID: B-6-5  
Collection Date: 3/1/2012 1:03:00 PM  
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>VOLATILES BY GC/MS</b>		<b>SW8260B</b>				Analyst: rkg
trans-1,2-Dichloroethene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
trans-1,3-Dichloropropene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Trichloroethene	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Trichlorofluoromethane	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Vinyl Chloride	ND	11.1		ug/Kg-dry	1	3/20/2012 11:13:00 AM
Surr: 1,2-Dichloroethane-d4	99.9	71.5-112		%REC	1	3/20/2012 11:13:00 AM
Surr: 4-Bromofluorobenzene	95.0	75.7-122		%REC	1	3/20/2012 11:13:00 AM
Surr: Dibromofluoromethane	93.6	64.3-124		%REC	1	3/20/2012 11:13:00 AM
Surr: Toluene-d8	95.3	74.9-120		%REC	1	3/20/2012 11:13:00 AM

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-13

**Client Sample ID:** B-6-8  
**Collection Date:** 3/1/2012 1:08:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	1050	19.5		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	65.1		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	162	50-150	S,MI	%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0875		mg/Kg-dry	1	3/7/2012
Toluene	ND	0.350		mg/Kg-dry	1	3/7/2012
Ethylbenzene	ND	0.350		mg/Kg-dry	1	3/7/2012
Xylenes, Total	ND	1.05		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	92.2	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	36.1	8.82	A	mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	84.7	50-150		%REC	1	3/5/2012



**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-14

**Client Sample ID:** B-7-5  
**Collection Date:** 3/1/2012 12:09:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	755	19.2	A1,L	mg/Kg-dry	1	3/6/2012
Lube Oil	ND	63.9		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	127	50-150		%REC	1	3/6/2012
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0319		mg/Kg-dry	1	3/8/2012
Toluene	ND	0.128		mg/Kg-dry	1	3/8/2012
Ethylbenzene	2.52	0.128		mg/Kg-dry	1	3/8/2012
Xylenes, Total	0.946	0.383		mg/Kg-dry	1	3/8/2012
Surr: 4-Bromofluorobenzene	93.9	42.6-126		%REC	1	3/8/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	1380	31.9	A	mg/Kg-dry	10	3/7/2012
Surr: 4-Bromofluorobenzene	197	50-150	S,MI	%REC	10	3/7/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-15

**Client Sample ID:** B-7-8  
**Collection Date:** 3/1/2012 1:35:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	1470	17.3	A1,L	mg/Kg-dry	1	3/6/2012
Lube Oil	ND	57.6		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	142	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0498		mg/Kg-dry	1	3/8/2012
Toluene	1.14	0.199		mg/Kg-dry	1	3/8/2012
Ethylbenzene	6.76	0.199		mg/Kg-dry	1	3/8/2012
Xylenes, Total	3.22	0.598		mg/Kg-dry	1	3/8/2012
Surr: 4-Bromofluorobenzene	115	42.6-126		%REC	1	3/8/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	5840	99.6		mg/Kg-dry	20	3/4/2012
Surr: 4-Bromofluorobenzene	109	50-150		%REC	20	3/4/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-16

**Client Sample ID:** B-8-5  
**Collection Date:** 3/1/2012 1:52:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0557		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.223		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.223		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.669		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	90.4	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	5.57		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	89.7	50-150		%REC	1	3/5/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-17

**Client Sample ID:** B-8-8  
**Collection Date:** 3/1/2012 1:55:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0585		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.234		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.234		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.702		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	92.8	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	5.79		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	88.0	50-150		%REC	1	3/5/2012



**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-18

**Client Sample ID:** B-4-W  
**Collection Date:** 3/1/2012 2:18:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: das
Benzene	11.5	0.300		µg/L	1	3/2/2012
Toluene	9.58	0.500		µg/L	1	3/2/2012
Ethylbenzene	48.9	0.500		µg/L	1	3/2/2012
Xylenes, Total	88.6	1.50		µg/L	1	3/2/2012
Surr: 4-Bromofluorobenzene	112	74.8-126		%REC	1	3/2/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	2770	500		µg/L	5	3/2/2012
Surr: 4-Bromofluorobenzene	78.7	50-150		%REC	5	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-19

**Client Sample ID:** B-6-W  
**Collection Date:** 3/1/2012 2:34:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: das
Benzene	11500	30.0		µg/L	100	3/4/2012
Toluene	40000	250		µg/L	500	3/6/2012
Ethylbenzene	2430	10.0		µg/L	20	3/3/2012
Xylenes, Total	11300	150		µg/L	100	3/4/2012
Surr: 4-Bromofluorobenzene	84.2	74.8-126		%REC	20	3/3/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	127000	2000		µg/L	20	3/2/2012
Surr: 4-Bromofluorobenzene	92.9	50-150		%REC	20	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-20

**Client Sample ID:** B-9-5  
**Collection Date:** 3/1/2012 2:10:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0613		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.245		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.245		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.736		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	84.1	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.13		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	85.9	50-150		%REC	1	3/5/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-21

**Client Sample ID:** B-9-7  
**Collection Date:** 3/1/2012 2:13:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	399	18.4	A4	mg/Kg-dry	1	3/6/2012
Lube Oil	ND	61.2		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	148	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0622		mg/Kg-dry	1	3/6/2012
Toluene	ND	0.249		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.249		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.746		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	90.4	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.22		mg/Kg-dry	1	3/4/2012
Surr: 4-Bromofluorobenzene	75.6	50-150		%REC	1	3/4/2012



**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-22

**Client Sample ID:** B-10-5  
**Collection Date:** 3/1/2012 3:26:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	ND	19.2		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	64.1		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	110	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	0.311	0.0691		mg/Kg-dry	1	3/6/2012
Toluene	0.633	0.276		mg/Kg-dry	1	3/6/2012
Ethylbenzene	ND	0.276		mg/Kg-dry	1	3/6/2012
Xylenes, Total	ND	0.829		mg/Kg-dry	1	3/6/2012
Surr: 4-Bromofluorobenzene	90.5	42.6-126		%REC	1	3/6/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	ND	6.91		mg/Kg-dry	1	3/4/2012
Surr: 4-Bromofluorobenzene	43.3	50-150	S	%REC	1	3/4/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-23

**Client Sample ID:** B-10-9  
**Collection Date:** 3/1/2012 3:35:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0280		mg/Kg-dry	1	3/8/2012
Toluene	ND	0.112		mg/Kg-dry	1	3/8/2012
Ethylbenzene	ND	0.112		mg/Kg-dry	1	3/8/2012
Xylenes, Total	ND	0.336		mg/Kg-dry	1	3/8/2012
Surr: 4-Bromofluorobenzene	75.6	42.6-126		%REC	1	3/8/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: jrp
Gasoline	ND	2.80		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	71.0	50-150		%REC	1	3/7/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-24

**Client Sample ID:** B-8-W  
**Collection Date:** 3/1/2012 2:40:00 PM  
**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: das
Benzene	43.6	0.300		µg/L	1	3/3/2012
Toluene	5.34	0.500		µg/L	1	3/3/2012
Ethylbenzene	45.9	0.500		µg/L	1	3/3/2012
Xylenes, Total	45.5	1.50		µg/L	1	3/3/2012
Surr: 4-Bromofluorobenzene	78.6	74.8-126		%REC	1	3/3/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	4240	100	A	µg/L	1	3/2/2012
Surr: 4-Bromofluorobenzene	144	50-150		%REC	1	3/2/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-25

**Client Sample ID:** B-9-W  
**Collection Date:** 3/1/2012 2:40:00 PM

**Matrix:** AQUEOUS

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>BTEX - RBC</b>		<b>SW8021B</b>				Analyst: das
Benzene	2.07	0.300		µg/L	1	3/3/2012
Toluene	3.26	0.500		µg/L	1	3/3/2012
Ethylbenzene	2.17	0.500		µg/L	1	3/3/2012
Xylenes, Total	2.75	1.50		µg/L	1	3/3/2012
Surr: 4-Bromofluorobenzene	95.8	74.8-126		%REC	1	3/3/2012
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	288	100	A	µg/L	1	3/2/2012
Surr: 4-Bromofluorobenzene	77.2	50-150		%REC	1	3/2/2012



# Specialty Analytical

Date: 23-Mar-12

CLIENT: 4Cs Environmental, Inc.

Client Sample ID: B-11-5

Lab Order: 1203027

Collection Date: 3/1/2012 3:32:00 PM

Project: Carson-Goldendale

Lab ID: 1203027-26

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	909	19.7		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	65.7		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	144	50-150		%REC	1	3/6/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-27

**Client Sample ID:** B-11-7  
**Collection Date:** 3/1/2012 3:35:00 PM

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	384	18.7	A1	mg/Kg-dry	1	3/6/2012
Lube Oil	ND	62.2		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	89.1	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	0.414	0.0530		mg/Kg-dry	1	3/7/2012
Toluene	2.89	0.212		mg/Kg-dry	1	3/7/2012
Ethylbenzene	4.84	0.212		mg/Kg-dry	1	3/7/2012
Xylenes, Total	6.96	0.636		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	105	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	1090	26.5		mg/Kg-dry	5	3/5/2012
Surr: 4-Bromofluorobenzene	243	50-150	S,MI	%REC	5	3/5/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-28

**Client Sample ID:** B-12-5  
**Collection Date:** 3/1/2012 3:56:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	215	19.6		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	65.4		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	126	50-150		%REC	1	3/6/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-29

**Client Sample ID:** B-12-8  
**Collection Date:** 3/1/2012 4:00:00 PM  
**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	99.9	19.2		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	64.0		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	121	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	ND	0.0723		mg/Kg-dry	1	3/7/2012
Toluene	ND	0.289		mg/Kg-dry	1	3/7/2012
Ethylbenzene	0.440	0.289		mg/Kg-dry	1	3/7/2012
Xylenes, Total	ND	0.868		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	92.4	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	36.7	7.07		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	154	50-150	S	%REC	1	3/5/2012



# Specialty Analytical

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-30

**Client Sample ID:** B-13-5  
**Collection Date:** 3/1/2012 4:11:00 PM

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	113	19.5		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	64.9		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	124	50-150		%REC	1	3/6/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.

**Client Sample ID:** B-13-9

**Lab Order:** 1203027

**Collection Date:** 3/1/2012 4:15:00 PM

**Project:** Carson-Goldendale

**Lab ID:** 1203027-31

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	41.3	18.8	A1,L	mg/Kg-dry	1	3/6/2012
Lube Oil	ND	62.6		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	122	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	0.103	0.0681		mg/Kg-dry	1	3/7/2012
Toluene	2.36	0.272		mg/Kg-dry	1	3/7/2012
Ethylbenzene	5.35	0.272		mg/Kg-dry	1	3/7/2012
Xylenes, Total	7.75	0.817		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	94.4	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	222	6.81		mg/Kg-dry	1	3/5/2012
Surr: 4-Bromofluorobenzene	182	50-150	S	%REC	1	3/5/2012

# Specialty Analytical

Date: 23-Mar-12

CLIENT: 4Cs Environmental, Inc.

Client Sample ID: B-14-5

Lab Order: 1203027

Collection Date: 3/1/2012 4:26:00 PM

Project: Carson-Goldendale

Lab ID: 1203027-32

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>						Analyst: kh
Diesel	121	19.6		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	65.4		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	132	50-150		%REC	1	3/6/2012

**Specialty Analytical**

Date: 23-Mar-12

**CLIENT:** 4Cs Environmental, Inc.  
**Lab Order:** 1203027  
**Project:** Carson-Goldendale  
**Lab ID:** 1203027-33

**Client Sample ID:** B-14-7  
**Collection Date:** 3/1/2012 4:29:00 PM

**Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
<b>NWTPH-DX</b>		<b>NWTPH-DX</b>				Analyst: kh
Diesel	360	18.8		mg/Kg-dry	1	3/6/2012
Lube Oil	ND	62.7		mg/Kg-dry	1	3/6/2012
Surr: o-Terphenyl	138	50-150		%REC	1	3/6/2012
<b>5035A / BTEX - RBC</b>		<b>SW8021B</b>				Analyst: jrp
Benzene	0.202	0.0643		mg/Kg-dry	1	3/7/2012
Toluene	4.31	0.257		mg/Kg-dry	1	3/7/2012
Ethylbenzene	9.55	0.257		mg/Kg-dry	1	3/7/2012
Xylenes, Total	13.1	0.772		mg/Kg-dry	1	3/7/2012
Surr: 4-Bromofluorobenzene	86.9	42.6-126		%REC	1	3/7/2012
<b>5035A/NWTPH-GX</b>		<b>NWTPH-GX</b>				Analyst: das
Gasoline	752	6.43	A	mg/Kg-dry	1	3/4/2012
Surr: 4-Bromofluorobenzene	179	50-150	S,MI	%REC	1	3/4/2012



Specialty Analytical

Date: 23-Mar-12

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

ANALYTICAL QC SUMMARY REPORT

TestCode: 1311\_VOL

Sample ID: MBLK-31071	SampType: MBLK	TestCode: 1311_VOL	Units: mg/L	Prep Date:	Run ID: 5973J_120321A						
Client ID: ZZZZZ	Batch ID: 31071	TestNo: SW1311/8260		Analysis Date: 3/21/2012	SeqNo: 823752						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	ND	0.0500									
Surr: 1,2-Dichloroethane-d4	4.708	0	5	0	94.2	72.8	113	0	0		
Surr: 4-Bromofluorobenzene	5.352	0	5	0	107	83.4	125	0	0		
Surr: Dibromofluoromethane	5.278	0	5	0	106	79.4	124	0	0		
Surr: Toluene-d8	5.584	0	5	0	112	88.6	129	0	0		

Sample ID: LCS-31071	SampType: LCS	TestCode: 1311_VOL	Units: mg/L	Prep Date:	Run ID: 5973J_120321A						
Client ID: ZZZZZ	Batch ID: 31071	TestNo: SW1311/8260		Analysis Date: 3/21/2012	SeqNo: 823735						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	1.85	0.0500	2	0	92.5	73.7	114	0	0		
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Sample ID: 1203027-12AMS	SampType: MS	TestCode: 1311_VOL	Units: mg/L	Prep Date:	Run ID: 5973J_120321A						
Client ID: B-6-5	Batch ID: 31071	TestNo: SW1311/8260		Analysis Date: 3/21/2012	SeqNo: 823754						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	1.785	0.0500	2	0	89.2	71.5	118	0	0		
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Sample ID: 1203027-12AMSD	SampType: MSD	TestCode: 1311_VOL	Units: mg/L	Prep Date:	Run ID: 5973J_120321A						
Client ID: B-6-5	Batch ID: 31071	TestNo: SW1311/8260		Analysis Date: 3/21/2012	SeqNo: 823755						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	1.862	0.0500	2	0	93.1	71.5	118	1.785	4.20	20	
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Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: 6010\_S**

Sample ID: <b>MBLK-31052</b>	SampType: <b>MBLK</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>3/20/2012</b>	Run ID: <b>TJA IRIS_120320B</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31052</b>	TestNo: <b>E6010</b>		Analysis Date: <b>3/20/2012</b>	SeqNo: <b>823594</b>
Analyte	Result	PQL	SPK value	SPK RefVal	%REC
					LowLimit
					HighLimit
					RPD Ref Val
					%RPD
					RPDLimit
					Qual

Lead ND 2.00

Sample ID: <b>LCS-31052</b>	SampType: <b>LCS</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>3/20/2012</b>	Run ID: <b>TJA IRIS_120320B</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31052</b>	TestNo: <b>E6010</b>		Analysis Date: <b>3/20/2012</b>	SeqNo: <b>823595</b>
Analyte	Result	PQL	SPK value	SPK RefVal	%REC
					LowLimit
					HighLimit
					RPD Ref Val
					%RPD
					RPDLimit
					Qual

Lead 103.7 2.00 2.00 100 0 104 84.9 109 0 0

Sample ID: <b>1203172-01AMS</b>	SampType: <b>MS</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>3/20/2012</b>	Run ID: <b>TJA IRIS_120320B</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31052</b>	TestNo: <b>E6010</b>		Analysis Date: <b>3/20/2012</b>	SeqNo: <b>823598</b>
Analyte	Result	PQL	SPK value	SPK RefVal	%REC
					LowLimit
					HighLimit
					RPD Ref Val
					%RPD
					RPDLimit
					Qual

Lead 97.79 1.92 96.15 4.073 97.5 109 84.9 109 0 0

Sample ID: <b>1203172-01AMSD</b>	SampType: <b>MSD</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>3/20/2012</b>	Run ID: <b>TJA IRIS_120320B</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31052</b>	TestNo: <b>E6010</b>		Analysis Date: <b>3/20/2012</b>	SeqNo: <b>823599</b>
Analyte	Result	PQL	SPK value	SPK RefVal	%REC
					LowLimit
					HighLimit
					RPD Ref Val
					%RPD
					RPDLimit
					Qual

Lead 100.6 1.92 96.15 4.073 100 109 84.9 109 97.79 2.81 20

Sample ID: <b>1203172-01ADUP</b>	SampType: <b>DUP</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date: <b>3/20/2012</b>	Run ID: <b>TJA IRIS_120320B</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31052</b>	TestNo: <b>E6010</b>		Analysis Date: <b>3/20/2012</b>	SeqNo: <b>823597</b>
Analyte	Result	PQL	SPK value	SPK RefVal	%REC
					LowLimit
					HighLimit
					RPD Ref Val
					%RPD
					RPDLimit
					Qual

Lead 4.264 1.82 0 0 0 0 0 0 4.073 4.58 20

Sample ID: <b>CCV</b>	SampType: <b>CCV</b>	TestCode: <b>6010_S</b>	Units: <b>mg/Kg</b>	Prep Date:	Run ID: <b>TJA IRIS_120320B</b>
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31052</b>	TestNo: <b>E6010</b>		Analysis Date: <b>3/20/2012</b>	SeqNo: <b>823593</b>
Analyte	Result	PQL	SPK value	SPK RefVal	%REC
					LowLimit
					HighLimit
					RPD Ref Val
					%RPD
					RPDLimit
					Qual

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode:** 6010\_S

Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120320B						
Client ID: ZZZZZ	Batch ID: 31052	TestNo: E6010		Analysis Date: 3/20/2012	SeqNo: 823593						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	103.9	2.00	100	0	104	90	110	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120320B						
Client ID: ZZZZZ	Batch ID: 31052	TestNo: E6010		Analysis Date: 3/20/2012	SeqNo: 823602						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	103.6	2.00	100	0	104	90	110	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120320B						
Client ID: ZZZZZ	Batch ID: 31052	TestNo: E6010		Analysis Date: 3/20/2012	SeqNo: 823611						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	103	2.00	100	0	103	90	110	0	0	0	0

Sample ID: ICV	SampType: ICV	TestCode: 6010_S	Units: mg/Kg	Prep Date:	Run ID: TJA IRIS_120320B						
Client ID: ZZZZZ	Batch ID: 31052	TestNo: E6010		Analysis Date: 3/20/2012	SeqNo: 823592						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Lead	99.22	2.00	100	0	99.2	90	110	0	0	0	0

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203027

Project: Carson-Goldendale

TestCode: 6010\_TCLP

Sample ID: MBLK-31060	SampType: MBLK	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/21/2012	Run ID: TJA IRIS_120321A						
Client ID: ZZZZZ	Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012	SeqNo: 823694						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	ND	0.0200									

Sample ID: LCS-31060	SampType: LCS	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/21/2012	Run ID: TJA IRIS_120321A						
Client ID: ZZZZZ	Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012	SeqNo: 823695						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	0.9912	0.0200	1	0	99.1	93.1	112	0	0		

Sample ID: 1203027-12AMS	SampType: MS	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/21/2012	Run ID: TJA IRIS_120321A						
Client ID: B-6-5	Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012	SeqNo: 823698						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	5.2	0.100	5	0.0965	102	91.9	112	0	0		

Sample ID: 1203027-12AMSD	SampType: MSD	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/21/2012	Run ID: TJA IRIS_120321A						
Client ID: B-6-5	Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012	SeqNo: 823699						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	5.17	0.100	5	0.0965	101	91.9	112	5.2	0.579	20	

Sample ID: 1203027-12ADUP	SampType: DUP	TestCode: 6010_TCLP	Units: mg/L	Prep Date: 3/21/2012	Run ID: TJA IRIS_120321A						
Client ID: B-6-5	Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012	SeqNo: 823697						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	0.1025	0.100	0	0	0	0	0	0.0965	6.03	20	

Sample ID: CCV	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJA IRIS_120321A						
Client ID: ZZZZZ	Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012	SeqNo: 823703						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: 6010\_TCLP

Sample ID: CCV	Batch ID: ZZZZZ	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJA IRIS_120321A	SeqNo: 823703				
Client ID: ZZZZZ		Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	0.9572	0.0200	1	0	95.7	90	110	0	0	0	

Sample ID: CCV	Batch ID: ZZZZZ	SampType: CCV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJA IRIS_120321A	SeqNo: 823915				
Client ID: ZZZZZ		Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	1.025	0.0200	1	0	103	90	110	0	0	0	

Sample ID: ICV	Batch ID: ZZZZZ	SampType: ICV	TestCode: 6010_TCLP	Units: mg/L	Prep Date:	Run ID: TJA IRIS_120321A	SeqNo: 823693				
Client ID: ZZZZZ		Batch ID: 31060	TestNo: E1311/6010		Analysis Date: 3/21/2012						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead, TCLP	0.9757	0.0200	1	0	97.6	90	110	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.

Work Order: 1203027

Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_5035

Sample ID: MBLK-31049

SampType: MBLK

TestCode: 8260\_5035

Prep Date:

Run ID: 5975X\_120320A

Client ID: ZZZZZ

Batch ID: 31049

TestNo: SW8260B

Analysis Date: 3/20/2012

SeqNo: 823474

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1,1,2-Tetrachloroethane	ND	10.0									
1,1,1-Trichloroethane	ND	10.0									
1,1,2,2-Tetrachloroethane	ND	10.0									
1,1,2-Trichloroethane	ND	10.0									
1,1-Dichloroethane	ND	10.0									
1,1-Dichloroethene	ND	10.0									
1,1-Dichloropropene	ND	10.0									
1,2,3-Trichlorobenzene	ND	10.0									
1,2,3-Trichloropropane	ND	10.0									
1,2,4-Trichlorobenzene	ND	10.0									
1,2,4-Trimethylbenzene	ND	10.0									
1,2-Dibromo-3-chloropropane	ND	10.0									
1,2-Dibromoethane	ND	10.0									
1,2-Dichlorobenzene	ND	10.0									
1,2-Dichloroethane	ND	10.0									
1,2-Dichloropropane	ND	10.0									
1,3,5-Trimethylbenzene	ND	10.0									
1,3-Dichlorobenzene	ND	10.0									
1,3-Dichloropropane	ND	10.0									
1,4-Dichlorobenzene	ND	10.0									
2,2-Dichloropropane	ND	10.0									
2-Butanone	ND	20.0									
2-Chlorotoluene	ND	10.0									
2-Hexanone	ND	20.0									
4-Chlorotoluene	ND	10.0									
4-Isopropyltoluene	ND	10.0									
4-Methyl-2-pentanone	ND	20.0									
Acetone	ND	50.0									
Benzene	ND	10.0									
Bromobenzene	ND	10.0									
Bromochloromethane	ND	10.0									

Qualifiers: ND - Not Detected at the Reporting Limit  
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R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank  
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CLIENT: 4Cs Environmental, Inc.

Work Order: 1203027

Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_5035

Sample ID: MBLK-31049	SampType: MBLK	TestCode: 8260_5035	Units: ug/Kg	Prep Date:	Run ID: 5975X_120320A						
Client ID: ZZZZ	Batch ID: 31049	TestNo: SW8260B		Analysis Date: 3/20/2012	SeqNo: 823474						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual

Bromodichloromethane	ND	10.0									
Bromoform	ND	10.0									
Bromomethane	ND	10.0									
Carbon Disulfide	ND	10.0									
Carbon tetrachloride	ND	10.0									
Chlorobenzene	ND	10.0									
Chloroethane	ND	10.0									
Chloroform	ND	10.0									
Chloromethane	0.84	10.0									
cis-1,2-Dichloroethene	ND	10.0									
cis-1,3-Dichloropropene	ND	10.0									
Dibromochloromethane	ND	10.0									
Dibromomethane	ND	10.0									
Dichlorodifluoromethane	ND	10.0									
Ethylbenzene	ND	10.0									
Hexachlorobutadiene	ND	10.0									
Isopropylbenzene	ND	10.0									
m,p-Xylene	ND	20.0									
Methyl tert-butyl ether	ND	10.0									
Methylene Chloride	ND	50.0									
n-Butylbenzene	ND	10.0									
n-Propylbenzene	ND	10.0									
Naphthalene	6.12	10.0									
o-Xylene	ND	10.0									
sec-Butylbenzene	ND	10.0									
Styrene	ND	10.0									
tert-Butylbenzene	ND	10.0									
Tetrachloroethene	ND	10.0									
Toluene	ND	10.0									
trans-1,2-Dichloroethene	ND	10.0									
trans-1,3-Dichloropropene	ND	10.0									

Qualifiers: ND - Not Detected at the Reporting Limit  
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R - RPD outside accepted recovery limits  
B - Analyte detected in the associated Method Blank  
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# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: 8260\_5035**

Sample ID: <b>MBLK-31049</b>	SampType: <b>MBLK</b>	TestCode: <b>8260_5035</b>	Units: <b>ug/Kg</b>	Run ID: <b>5975X_120320A</b>							
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31049</b>	TestNo: <b>SW8260B</b>		SeqNo: <b>823474</b>							
		Prep Date:									
		Analysis Date: <b>3/20/2012</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Trichloroethene	ND	10.0									
Trichlorofluoromethane	ND	10.0									
Vinyl Chloride	ND	10.0									
Surr: 1,2-Dichloroethane-d4	91.39	0	100	0	91.4	71.5	112	0	0		
Surr: 4-Bromofluorobenzene	100.3	0	100	0	100	75.7	122	0	0		
Surr: Dibromofluoromethane	99.71	0	100	0	99.7	64.3	124	0	0		
Surr: Toluene-d8	103.8	0	100	0	104	74.9	120	0	0		

Sample ID: <b>LCS-31049</b>	SampType: <b>LCS</b>	TestCode: <b>8260_5035</b>	Units: <b>ug/Kg</b>	Run ID: <b>5975X_120320A</b>							
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31049</b>	TestNo: <b>SW8260B</b>		SeqNo: <b>823472</b>							
		Prep Date:									
		Analysis Date: <b>3/20/2012</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	64.97	10.0	60	0	108	65.4	133	0	0		
Benzene	63.86	10.0	60	0	106	78	123	0	0		
Chlorobenzene	59.52	10.0	60	0	99.2	79.5	125	0	0		
Toluene	60.91	10.0	60	0	102	77.5	132	0	0		
Trichloroethene	60.81	10.0	60	0	101	72.4	124	0	0		

Sample ID: <b>LCSD-31049</b>	SampType: <b>LCSD</b>	TestCode: <b>8260_5035</b>	Units: <b>ug/Kg</b>	Run ID: <b>5975X_120320A</b>							
Client ID: <b>ZZZZZ</b>	Batch ID: <b>31049</b>	TestNo: <b>SW8260B</b>		SeqNo: <b>823473</b>							
		Prep Date:									
		Analysis Date: <b>3/20/2012</b>									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	59.04	10.0	60	0	98.4	65.4	133	64.97	9.56	20	
Benzene	61.32	10.0	60	0	102	78	123	63.86	4.06	20	
Chlorobenzene	58.36	10.0	60	0	97.3	79.5	125	59.52	1.97	20	
Toluene	59.44	10.0	60	0	99.1	77.5	132	60.91	2.44	20	
Trichloroethene	59.04	10.0	60	0	98.4	72.4	124	60.81	2.95	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      Page 8 of 29



CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: 8260\_5035

Sample ID: CCV-31049	SampType: CCV	TestCode: 8260_5035	Units: ug/Kg	Prep Date:	Run ID: 5975X_120320A
Client ID: ZZZZZ	Batch ID: 31049	TestNo: SW8250B		Analysis Date: 3/20/2012	SeqNo: 823471

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	50.92	10.0	60	0	84.9	80	120	0	0	0	
1,2-Dichloropropane	54.35	10.0	60	0	90.6	80	120	0	0	0	
Chloroform	49.38	10.0	60	0	82.3	80	120	0	0	0	
Ethylbenzene	52.72	10.0	60	0	87.9	80	120	0	0	0	
Toluene	52.17	10.0	60	0	87	80	120	0	0	0	
Vinyl Chloride	53.59	10.0	60	0	89.3	80	120	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode:** BTEXRBC\_S

<b>Sample ID:</b> MB-30960	<b>SampType:</b> MBLK	<b>TestCode:</b> BTEXRBC_S	<b>Units:</b> mg/Kg	<b>Prep Date:</b> 3/8/2012	<b>Run ID:</b> GC-I_120308B						
<b>Client ID:</b> ZZZZ	<b>Batch ID:</b> 30960	<b>TestNo:</b> SW8021B		<b>Analysis Date:</b> 3/8/2012	<b>SeqNo:</b> 821016						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK RefVal</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
Benzene	0.0075	0.0250									J
Toluene	0.0165	0.100									J
Ethylbenzene	0.029	0.100									J
Xylenes, Total	0.0355	0.300									J
Surr: 4-Bromofluorobenzene	4.312	0	5	0	86.2	42.6	126	0	0	0	J

<b>Sample ID:</b> LCS-30960	<b>SampType:</b> LCS	<b>TestCode:</b> BTEXRBC_S	<b>Units:</b> mg/Kg	<b>Prep Date:</b> 3/8/2012	<b>Run ID:</b> GC-I_120308B						
<b>Client ID:</b> ZZZZ	<b>Batch ID:</b> 30960	<b>TestNo:</b> SW8021B		<b>Analysis Date:</b> 3/8/2012	<b>SeqNo:</b> 821017						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK RefVal</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
Benzene	0.9865	0.0250	1.25	0	78.9	68.7	117	0	0	0	
Toluene	1.043	0.100	1.25	0	83.4	71.4	115	0	0	0	
Ethylbenzene	1.034	0.100	1.25	0	82.7	76.3	115	0	0	0	
Xylenes, Total	3.3	0.300	3.75	0	88	70.1	116	0	0	0	

<b>Sample ID:</b> 1203027-23BMS	<b>SampType:</b> MS	<b>TestCode:</b> BTEXRBC_S	<b>Units:</b> mg/Kg-dry	<b>Prep Date:</b> 3/8/2012	<b>Run ID:</b> GC-I_120308B						
<b>Client ID:</b> B-10-9	<b>Batch ID:</b> 30960	<b>TestNo:</b> SW8021B		<b>Analysis Date:</b> 3/8/2012	<b>SeqNo:</b> 821018						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK RefVal</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
Benzene	1.154	0.0280	1.401	0.006166	81.9	32.2	108	0	0	0	
Toluene	1.299	0.112	1.401	0.01513	91.6	56.7	110	0	0	0	
Ethylbenzene	1.341	0.112	1.401	0.05269	91.9	53.3	107	0	0	0	
Xylenes, Total	4.046	0.336	4.204	0.1043	93.8	47.5	119	0	0	0	

<b>Sample ID:</b> 1203027-23BMSD	<b>SampType:</b> MSD	<b>TestCode:</b> BTEXRBC_S	<b>Units:</b> mg/Kg-dry	<b>Prep Date:</b> 3/8/2012	<b>Run ID:</b> GC-I_120308B						
<b>Client ID:</b> B-10-9	<b>Batch ID:</b> 30960	<b>TestNo:</b> SW8021B		<b>Analysis Date:</b> 3/8/2012	<b>SeqNo:</b> 821019						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK RefVal</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
Benzene	1.166	0.0280	1.401	0.006166	82.8	32.2	108	1.154	1.06	20	
Toluene	1.283	0.112	1.401	0.01513	90.5	56.7	110	1.299	1.26	20	
Ethylbenzene	1.338	0.112	1.401	0.05269	91.7	53.3	107	1.341	0.209	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: BTEXRBC\_S

Sample ID: 1203027-23BMSD	Samp Type: MSD	TestCode: BTEXRBC_S	Units: mg/Kg-dry	Prep Date: 3/8/2012	Run ID: GC-I_120308B						
Client ID: B-10-9	Batch ID: 30960	TestNo: SW8021B		Analysis Date: 3/8/2012	SeqNo: 821019						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Xylenes, Total	4.061	0.336	4.204	0.1043	94.1	47.5	119	4.046	0.373	20	

Sample ID: CCV	Samp Type: CCV	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date:	Run ID: GC-I_120308B						
Client ID: ZZZZ	Batch ID: 30960	TestNo: SW8021B		Analysis Date: 3/8/2012	SeqNo: 821015						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.154	0.0250	2.5	0	86.2	85	115	0	0		
Toluene	2.382	0.100	2.5	0	95.3	85	115	0	0		
Ethylbenzene	2.356	0.100	2.5	0	94.2	85	115	0	0		
Xylenes, Total	7.195	0.300	7.5	0	95.9	85	115	0	0		

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      Page 11 of 29



CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: BTEXRBC\_SA

Sample ID: MB-30946	SampType: MBLK	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date: 3/6/2012	Run ID: GC-I_120306A						
Client ID: ZZZZZ	Batch ID: 30946	TestNo: SW8021B		Analysis Date: 3/6/2012	SeqNo: 820450						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	0.013	0.0250									J
Toluene	0.0435	0.100									J
Ethylbenzene	0.0295	0.100									J
Xylenes, Total	0.072	0.300									J
Surr: 4-Bromofluorobenzene	4.694	0	5	0	93.9	42.6	126	0	0	0	

Sample ID: MB-30961	SampType: MBLK	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date: 3/8/2012	Run ID: GC-I_120308A						
Client ID: ZZZZZ	Batch ID: 30961	TestNo: SW8021B		Analysis Date: 3/8/2012	SeqNo: 821029						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	ND	0.0250									
Toluene	0.0165	0.100									J
Ethylbenzene	0.029	0.100									J
Xylenes, Total	0.0355	0.300									J
Surr: 4-Bromofluorobenzene	4.312	0	5	0	86.2	42.6	126	0	0	0	

Sample ID: LCS-30946	SampType: LCS	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date: 3/6/2012	Run ID: GC-I_120306A						
Client ID: ZZZZZ	Batch ID: 30946	TestNo: SW8021B		Analysis Date: 3/6/2012	SeqNo: 820451						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	1.101	0.0250	1.25	0	88.1	68.7	117	0	0	0	
Toluene	1.168	0.100	1.25	0	93.4	71.4	115	0	0	0	
Ethylbenzene	1.185	0.100	1.25	0	94.8	76.3	115	0	0	0	
Xylenes, Total	3.666	0.300	3.75	0	97.8	70.1	116	0	0	0	

Sample ID: LCS-30961	SampType: LCS	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date: 3/8/2012	Run ID: GC-I_120308A						
Client ID: ZZZZZ	Batch ID: 30961	TestNo: SW8021B		Analysis Date: 3/8/2012	SeqNo: 821030						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	0.9865	0.0250	1.25	0	78.9	68.7	117	0	0	0	
Toluene	1.043	0.100	1.25	0	83.4	71.4	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: BTEXRBC\_SA**

Sample ID: LCS-30961	SampType: LCS	TestCode: BTEXRBC_S	Units: mg/Kg
Client ID: ZZZZZ	Batch ID: 30961	TestNo: SW8021B	
Prep Date: 3/8/2012		Run ID: GC-I_120308A	
Analysis Date: 3/8/2012		SeqNo: 821030	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	1.034	0.100	1.25	0	82.7	76.3	115	0	0		
Xylenes, Total	3.3	0.300	3.75	0	88	70.1	116	0	0		

Sample ID: 1203027-01BMS	SampType: MS	TestCode: BTEXRBC_S	Units: mg/Kg-dry
Client ID: B-1-5	Batch ID: 30946	TestNo: SW8021B	
Prep Date: 3/6/2012		Run ID: GC-I_120306A	
Analysis Date: 3/6/2012		SeqNo: 820453	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.73	0.0641	3.205	0.05002	83.6	32.2	108	0	0		
Toluene	2.999	0.256	3.205	0.3155	83.7	56.7	101	0	0		
Ethylbenzene	3.031	0.256	3.205	0.0962	91.6	53.3	107	0	0		
Xylenes, Total	9.337	0.769	9.616	0.4451	92.5	47.5	119	0	0		

Sample ID: A1203027-23BMS	SampType: MS	TestCode: BTEXRBC_S	Units: mg/Kg
Client ID: ZZZZZ	Batch ID: 30961	TestNo: SW8021B	
Prep Date: 3/8/2012		Run ID: GC-I_120308A	
Analysis Date: 3/8/2012		SeqNo: 821031	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.029	0.0250	1.25	0	82.3	32.2	108	0	0		
Toluene	1.159	0.100	1.25	0.0135	91.6	56.7	101	0	0		
Ethylbenzene	1.196	0.100	1.25	0.047	91.9	53.3	107	0	0		
Xylenes, Total	3.609	0.300	3.75	0.093	93.8	47.5	119	0	0		

Sample ID: 1203027-01BMSD	SampType: MSD	TestCode: BTEXRBC_S	Units: mg/Kg-dry
Client ID: B-1-5	Batch ID: 30946	TestNo: SW8021B	
Prep Date: 3/6/2012		Run ID: GC-I_120306A	
Analysis Date: 3/6/2012		SeqNo: 820454	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.712	0.0641	3.205	0.05002	83	32.2	108	2.73	0.660	20	
Toluene	2.984	0.256	3.205	0.3155	83.2	56.7	101	2.999	0.514	20	
Ethylbenzene	3.014	0.256	3.205	0.0962	91	53.3	107	3.031	0.551	20	
Xylenes, Total	9.266	0.769	9.616	0.4451	91.7	47.5	119	9.337	0.758	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: BTEXRBC\_SA**

Sample ID: A1203027-23BMSD	Samp Type: MSD	TestCode: BTEXRBC_S	Units: mg/Kg
Client ID: ZZZZZ	Batch ID: 30961	TestNo: SW8021B	
Prep Date: 3/8/2012		Run ID: GC-I_120308A	
Analysis Date: 3/8/2012		SeqNo: 821032	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.04	0.0250	1.25	0	83.2	32.2	108	1.029	1.06	20	
Toluene	1.144	0.100	1.25	0.0135	90.5	56.7	101	1.159	1.26	20	
Ethylbenzene	1.194	0.100	1.25	0.047	91.7	53.3	107	1.196	0.209	20	
Xylenes, Total	3.622	0.300	3.75	0.093	94.1	47.5	119	3.609	0.373	20	

Sample ID: CCB	Samp Type: CCB	TestCode: BTEXRBC_S	Units: mg/Kg
Client ID: ZZZZZ	Batch ID: 30946	TestNo: SW8021B	
Prep Date: 3/7/2012		Run ID: GC-I_120306A	
Analysis Date: 3/7/2012		SeqNo: 820883	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.005	0.0250	0	0	0	0	0	0	0	0	
Toluene	0.011	0.100	0	0	0	0	0	0	0	0	
Ethylbenzene	0.018	0.100	0	0	0	0	0	0	0	0	
Xylenes, Total	0.0345	0.300	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	4.364	0	5	0	87.3	42.6	126	0	0	0	

Sample ID: CCV	Samp Type: CCV	TestCode: BTEXRBC_S	Units: mg/Kg
Client ID: ZZZZZ	Batch ID: 30946	TestNo: SW8021B	
Prep Date: 3/6/2012		Run ID: GC-I_120306A	
Analysis Date: 3/6/2012		SeqNo: 820449	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.209	0.0250	2.5	0	88.4	85	115	0	0	0	
Toluene	2.424	0.100	2.5	0	97	85	115	0	0	0	
Ethylbenzene	2.456	0.100	2.5	0	98.2	85	115	0	0	0	
Xylenes, Total	7.558	0.300	7.5	0	101	85	115	0	0	0	

Sample ID: CCV	Samp Type: CCV	TestCode: BTEXRBC_S	Units: mg/Kg
Client ID: ZZZZZ	Batch ID: 30946	TestNo: SW8021B	
Prep Date: 3/7/2012		Run ID: GC-I_120306A	
Analysis Date: 3/7/2012		SeqNo: 820882	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.244	0.0250	2.5	0	89.8	85	115	0	0	0	
Toluene	2.426	0.100	2.5	0	97	85	115	0	0	0	
Ethylbenzene	2.378	0.100	2.5	0	95.1	85	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: BTEXRBC\_SA

Sample ID: CCV	SampType: CCV	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date:	Run ID: GC-I_120306A					
Client ID: ZZZZZ	Batch ID: 30946	TestNo: SW8021B		Analysis Date: 3/7/2012	SeqNo: 820882					
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Xylenes, Total	7.48	0.300	7.5	99.7	85	115	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: BTEXRBC_S	Units: mg/Kg	Prep Date:	Run ID: GC-I_120308A					
Client ID: ZZZZZ	Batch ID: 30961	TestNo: SW8021B		Analysis Date: 3/8/2012	SeqNo: 821028					
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	2.154	0.0250	2.5	86.2	85	115	0	0	0	
Toluene	2.382	0.100	2.5	95.3	85	115	0	0	0	
Ethylbenzene	2.356	0.100	2.5	94.2	85	115	0	0	0	
Xylenes, Total	7.195	0.300	7.5	95.9	85	115	0	0	0	

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: BTEXRBC\_W**

Sample ID: MB-30917	SampType: MBLK	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/2/2012	Run ID: GC-I_120302B
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B		Analysis Date: 3/2/2012	SeqNo: 819775

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	ND	0.300									
Toluene	ND	0.500									
Ethylbenzene	ND	0.500									
Xylenes, Total	ND	1.50									
Surr. 4-Bromofluorobenzene	95.65	0	100	0	95.6	74.8	126	0	0	0	

Sample ID: LCS-30917	SampType: LCS	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/2/2012	Run ID: GC-I_120302B
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B		Analysis Date: 3/2/2012	SeqNo: 819774

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	43.89	0.300	50	0	87.8	75.8	113	0	0	0	
Toluene	46.4	0.500	50	0	92.8	77	116	0	0	0	
Ethylbenzene	46.85	0.500	50	0	93.7	76.6	118	0	0	0	
Xylenes, Total	142.8	1.50	150	0	95.2	76.7	118	0	0	0	

Sample ID: 1203027-02AMS	SampType: MS	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/2/2012	Run ID: GC-I_120302B
Client ID: B-1-W	Batch ID: 30917	TestNo: SW8021B		Analysis Date: 3/2/2012	SeqNo: 819778

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	20.21	0.300	25	0.4848	78.9	67.8	118	0	0	0	
Toluene	23.12	0.500	25	1.167	87.8	74.7	117	0	0	0	
Ethylbenzene	22.52	0.500	25	1.427	84.4	74.5	115	0	0	0	
Xylenes, Total	67	1.50	75	1.99	86.7	76.8	120	0	0	0	

Sample ID: 1203027-02AMSD	SampType: MSD	TestCode: BTEXRBC_W	Units: µg/L	Prep Date: 3/2/2012	Run ID: GC-I_120302B
Client ID: B-1-W	Batch ID: 30917	TestNo: SW8021B		Analysis Date: 3/2/2012	SeqNo: 819779

Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Benzene	20.28	0.300	25	0.4848	79.2	67.8	118	20.21	0.346	20	
Toluene	23.13	0.500	25	1.167	87.9	74.7	117	23.12	0.0476	20	
Ethylbenzene	22.58	0.500	25	1.427	84.6	74.5	115	22.52	0.284	20	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: BTEXRBC\_W**

Sample ID: 1203027-02AMSD	SampType: MSD	TestCode: BTEXRBC_W	Units: µg/L
Client ID: B-1-W	Batch ID: 30917	TestNo: SW8021B	
Prep Date: 3/2/2012		Run ID: GC-L_120302B	
Analysis Date: 3/2/2012		SeqNo: 819779	
Analyte	Result	PQL	SPK value
Xylenes, Total	67.06	1.50	75
		%REC	LowLimit
		86.8	76.8
			HighLimit
			120
		%RPD	RPD RefVal
		0.0895	67
			RPDLimit
			20
			Qual

Sample ID: CCB-30917	SampType: CCB	TestCode: BTEXRBC_W	Units: µg/L
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B	
Prep Date: 3/2/2012		Run ID: GC-L_120302B	
Analysis Date: 3/3/2012		SeqNo: 819810	
Analyte	Result	PQL	SPK value
Benzene	0.079	0.300	0
Toluene	0.511	0.500	0
Ethylbenzene	0.284	0.500	0
Xylenes, Total	0.65	1.50	0
Surr: 4-Bromofluorobenzene	95.44	0	100
		%REC	LowLimit
		95.4	74.8
			HighLimit
			126
		%RPD	RPD RefVal
		0	0
			RPDLimit
			0
			Qual

Sample ID: CCB-30917	SampType: CCB	TestCode: BTEXRBC_W	Units: µg/L
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B	
Prep Date: 3/2/2012		Run ID: GC-L_120302B	
Analysis Date: 3/4/2012		SeqNo: 819834	
Analyte	Result	PQL	SPK value
Benzene	0.048	0.300	0
Toluene	0.263	0.500	0
Ethylbenzene	0.493	0.500	0
Xylenes, Total	0.857	1.50	0
Surr: 4-Bromofluorobenzene	93.05	0	100
		%REC	LowLimit
		93	74.8
			HighLimit
			126
		%RPD	RPD RefVal
		0	0
			RPDLimit
			0
			Qual

Sample ID: CCB	SampType: CCB	TestCode: BTEXRBC_W	Units: µg/L
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B	
Prep Date: 3/6/2012		Run ID: GC-L_120302B	
Analysis Date: 3/6/2012		SeqNo: 820148	
Analyte	Result	PQL	SPK value
Benzene	0.07	0.300	0
Toluene	0.32	0.500	0
Ethylbenzene	0.15	0.500	0
Xylenes, Total	0.53	1.50	0
Surr: 4-Bromofluorobenzene	90.81	0	100
		%REC	LowLimit
		90.8	74.8
			HighLimit
			126
		%RPD	RPD RefVal
		0	0
			RPDLimit
			0
			Qual

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: BTEXRBC\_W

Sample ID: CCV-30917	SampType: CCV	TestCode: BTEXRBC_W	Units: µg/L	Run ID: GC-I_120302B							
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B		SeqNo: 819773							
		Prep Date: 3/2/2012									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual

Benzene	43.89	0.300	50	0	87.8	85	115	0	0		
Toluene	46.4	0.500	50	0	92.8	85	115	0	0		
Ethylbenzene	46.85	0.500	50	0	93.7	85	115	0	0		
Xylenes, Total	142.8	1.50	150	0	95.2	85	115	0	0		

Sample ID: CCV-30917	SampType: CCV	TestCode: BTEXRBC_W	Units: µg/L	Run ID: GC-I_120302B							
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B		SeqNo: 819809							
		Prep Date: 3/3/2012									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual

Benzene	44.17	0.300	50	0	86.3	85	115	0	0		
Toluene	47.48	0.500	50	0	95	85	115	0	0		
Ethylbenzene	47.17	0.500	50	0	94.3	85	115	0	0		
Xylenes, Total	147.2	1.50	150	0	98.2	85	115	0	0		

Sample ID: CCV-30917	SampType: CCV	TestCode: BTEXRBC_W	Units: µg/L	Run ID: GC-I_120302B							
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B		SeqNo: 819833							
		Prep Date: 3/4/2012									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual

Benzene	44.95	0.300	50	0	89.9	85	115	0	0		
Toluene	48.38	0.500	50	0	96.8	85	115	0	0		
Ethylbenzene	48.82	0.500	50	0	97.6	85	115	0	0		
Xylenes, Total	148.6	1.50	150	0	99	85	115	0	0		

Sample ID: CCV	SampType: CCV	TestCode: BTEXRBC_W	Units: µg/L	Run ID: GC-I_120302B							
Client ID: ZZZZ	Batch ID: 30917	TestNo: SW8021B		SeqNo: 820147							
		Prep Date: 3/6/2012									
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual

Benzene	43.31	0.300	50	0	86.6	85	115	0	0		
Toluene	49.96	0.500	50	0	99.9	85	115	0	0		
Ethylbenzene	46.59	0.500	50	0	93.2	85	115	0	0		
Xylenes, Total	140.9	1.50	150	0	94	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: NWTPHDX\_S**

Sample ID: MB-30924	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 3/2/2012	Run ID: GC-M_120306B						
Client ID: ZZZZ	Batch ID: 30924	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820568						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	41.77	0	33.33	0	125	50	150	0	0		

Sample ID: LCS-30924	SampType: LCS	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 3/2/2012	Run ID: GC-M_120306B						
Client ID: ZZZZ	Batch ID: 30924	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820569						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	162.2	15.0	166.6	0	97.3	76.3	125	0	0		
Lube Oil	151.9	50.0	166.6	0	91.2	69.9	127	0	0		

Sample ID: 1203027-21ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 3/2/2012	Run ID: GC-M_120306B						
Client ID: B-9-7	Batch ID: 30924	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820575						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	150.2	18.4	0	0	0	0	0	399.1	90.6	20	A4,R,MI
Lube Oil	ND	61.2	0	0	0	0	0	21.11	0	20	

Sample ID: 1203027-33ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 3/2/2012	Run ID: GC-M_120306B						
Client ID: B-14-7	Batch ID: 30924	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820585						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	317.1	18.8	0	0	0	0	0	360.2	12.7	20	
Lube Oil	ND	62.7	0	0	0	0	0	0	0	20	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_120306B						
Client ID: ZZZZ	Batch ID: 30924	TestNo: NWTPH-Dx		Analysis Date: 3/6/2012	SeqNo: 820567						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	1052	15.0	1023	0	103	85	115	0	0		
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**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.

**Work Order:** 1203027

**Project:** Carson-Goldendale

**TestCode:** NWTPHDX\_S

Sample ID: <b>CCV</b>	SampType: <b>CCV</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date:	Run ID: <b>GC-M_120306B</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>30924</b>	TestNo: <b>NWTPH-Dx</b>		Analysis Date: <b>3/6/2012</b>	SeqNo: <b>820567</b>						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	544.4	50.0	524.9	0	104	85	115	0	0	0	

Sample ID: <b>CCV</b>	SampType: <b>CCV</b>	TestCode: <b>NWTPHDX_S</b>	Units: <b>mg/Kg</b>	Prep Date:	Run ID: <b>GC-M_120306B</b>						
Client ID: <b>ZZZZZ</b>	Batch ID: <b>30924</b>	TestNo: <b>NWTPH-Dx</b>		Analysis Date: <b>3/6/2012</b>	SeqNo: <b>820586</b>						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1459	15.0	1364	0	107	85	115	0	0	0	
Lube Oil	648.4	50.0	699.9	0	92.6	85	115	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits      Page 20 of 29



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode:** NWTPHGX\_S

Sample ID: MB-30935	Samp Type: MBLK	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820024						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	2.50									
Surr: 4-Bromofluorobenzene	3.871	0	5	0	77.4	50	150	0	0	0	

Sample ID: LCS-30935	Samp Type: LCS	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820023						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	42.91	2.50	50	0	85.8	53.5	121	0	0	0	
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Sample ID: 1203038-18ADUP	Samp Type: DUP	TestCode: NWTPHGX_S	Units: mg/Kg-dry	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820037						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	1096	32.1	0	0	0	0	0	1125	2.61	20	
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Sample ID: 1203038-03ADUP	Samp Type: DUP	TestCode: NWTPHGX_S	Units: mg/Kg-dry	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820173						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	16340	326	0	0	0	0	0	15600	4.59	20	
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Sample ID: CCB	Samp Type: CCB	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/5/2012	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820165						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	2.50	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	3.563	0	5	0	71.3	50	150	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode: NWTPHGX\_S**

Sample ID: CCB	SampType: CCB	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/7/2012	SeqNo: 820562						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2.12	2.50	0	0	0	0	0	0	0	0	0
Surr: 4-Bromofluorobenzene	3.634	0	5	0	72.7	50	150	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820022						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	111.4	2.50	125	0	89.1	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820039						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	1468	25.0	1500	0	97.8	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820164						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	121	2.50	125	0	96.8	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A						
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820176						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	142.4	2.50	150	0	95	80	120	0	0	0	0

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_S

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A					
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/7/2012	SeqNo: 820561					
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	119.2	2.50	125	95.4	80	120	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120305A					
Client ID: ZZZZZ	Batch ID: 30935	TestNo: NWTPH-Gx		Analysis Date: 3/7/2012	SeqNo: 820565					
Analyte	Result	PQL	SPK value	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	142.5	2.50	150	95	80	120	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode:** NWTPHGX\_SA

Sample ID: MB-30918	SampType: MBLK	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/2/2012	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819669						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	2.50	0	5	0	70.9	50	150	0	0	
Surr: 4-Bromofluorobenzene	3.544	0									

Sample ID: MB-30925	SampType: MBLK	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/3/2012	Run ID: GC-L_120304A						
Client ID: ZZZZZ	Batch ID: 30925	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819694						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	0.984	2.50	0	10	0	84.9	50	150	0	0	J
Surr: 4-Bromofluorobenzene	8.49	0									

Sample ID: LCS-30918	SampType: LCS	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/2/2012	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/2/2012	SeqNo: 819662						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	43.73	2.50	50	50	0	87.5	53.5	121	0	0	
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Sample ID: LCS-30925	SampType: LCS	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date: 3/3/2012	Run ID: GC-L_120304A						
Client ID: ZZZZZ	Batch ID: 30925	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819695						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	39.02	2.50	50	50	0	78	53.5	121	0	0	
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Sample ID: 1203027-01BDUP	SampType: DUP	TestCode: NWTPHGX_S	Units: mg/Kg-dry	Prep Date: 3/2/2012	Run ID: GC-S_120302A						
Client ID: B-1-5	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/2/2012	SeqNo: 819665						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Gasoline	ND	6.41	0	0	0	0	0	0	0	0	20
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**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode:** NWTPHGx\_SA

Sample ID: 1203027-33BDUP	SampType: DUP	TestCode: NWTPHGx_S	Units: mg/Kg-dry	Prep Date: 3/3/2012	Run ID: GC-I_120304A						
Client ID: B-14-7	Batch ID: 30925	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819697						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	805.2	6.43	0	0	0	0	0	751.7	6.87	20	A

Sample ID: 1203027-17BDUP	SampType: DUP	TestCode: NWTPHGx_S	Units: mg/Kg-dry	Prep Date: 3/2/2012	Run ID: GC-S_120302A						
Client ID: B-8-8	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820326						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	6.228	5.79	0	0	0	0	0	0	0	20	

Sample ID: CCB	SampType: CCB	TestCode: NWTPHGx_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820094						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	2.50	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	3.636	0	5	0	72.7	50	150	0	0	0	

Sample ID: CCB-30918	SampType: CCB	TestCode: NWTPHGx_S	Units: mg/Kg	Prep Date: 3/2/2012	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820327						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	2.50	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	3.562	0	5	0	71.2	50	150	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGx_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/2/2012	SeqNo: 819661						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	97.82	2.50	100	0	97.8	80	120	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_SA

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/2/2012	SeqNo: 819667						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	144.2	2.50	125	0	115	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819668						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	92.4	2.50	100	0	92.4	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819680						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	127.7	2.50	125	0	102	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819692						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	103.9	2.50	100	0	104	80	120	0	0	0	0

Sample ID: CCV-30925	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-I_120304A						
Client ID: ZZZZZ	Batch ID: 30925	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819693						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	106.9	2.50	125	0	85.5	80	120	0	0	0	0

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-I_120304A						
Client ID: ZZZZZ	Batch ID: 30925	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819698						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit  
 J - Analyte detected below quantitation limits  
 S - Spike Recovery outside accepted recovery limits  
 R - RPD outside accepted recovery limits  
 B - Analyte detected in the associated Method Blank



CLIENT: 4Cs Environmental, Inc.  
 Work Order: 1203027  
 Project: Carson-Goldendale

# ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX\_SA

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-I_120304A						
Client ID: ZZZZZ	Batch ID: 30925	TestNo: NWTPH-Gx		Analysis Date: 3/4/2012	SeqNo: 819698						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	135.2	2.50	150	0	90.1	80	120	0	0	0	

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820093						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	84.12	2.50	100	0	84.1	80	120	0	0		

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/5/2012	SeqNo: 820107						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	111.4	2.50	125	0	89.1	80	120	0	0		

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820325						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	121	2.50	125	0	96.8	80	120	0	0		

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_S	Units: mg/Kg	Prep Date:	Run ID: GC-S_120302A						
Client ID: ZZZZZ	Batch ID: 30918	TestNo: NWTPH-Gx		Analysis Date: 3/6/2012	SeqNo: 820339						
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD RefVal	%RPD	RPDLimit	Qual
Gasoline	142.4	2.50	150	0	95	80	120	0	0		

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits

# ANALYTICAL QC SUMMARY REPORT

**CLIENT:** 4Cs Environmental, Inc.  
**Work Order:** 1203027  
**Project:** Carson-Goldendale

**TestCode:** NWTPHGX\_W

Sample ID:	MB-30916	SampType:	MBLK	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/2/2012	Run ID:	GC-I_120302A
Client ID:	ZZZZZ	Batch ID:	30916	TestNo:	NWTPH-Gx			Analysis Date:	3/2/2012	SeqNo:	819700
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	60.39	100	0	0	93.4	50	150	0	0	0	J
Surr: 4-Bromofluorobenzene	93.35	0	100	0							

Sample ID:	LCS-30916	SampType:	LCS	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/2/2012	Run ID:	GC-I_120302A
Client ID:	ZZZZZ	Batch ID:	30916	TestNo:	NWTPH-Gx			Analysis Date:	3/2/2012	SeqNo:	819699
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2065	100	2500	0	82.6	74.4	128	0	0	0	

Sample ID:	1203027-02ADUP	SampType:	DUP	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/2/2012	Run ID:	GC-I_120302A
Client ID:	B-1-W	Batch ID:	30916	TestNo:	NWTPH-Gx			Analysis Date:	3/2/2012	SeqNo:	819702
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	292	100	0	0	0	0	0	226.6	25.2	20	A,RF

Sample ID:	CCB-30916	SampType:	CCB	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/2/2012	Run ID:	GC-I_120302A
Client ID:	ZZZZZ	Batch ID:	30916	TestNo:	NWTPH-Gx			Analysis Date:	3/2/2012	SeqNo:	819710
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	92.94	100	0	0	0	0	0	0	0	0	
Surr: 4-Bromofluorobenzene	94.71	0	100	0	94.7	50	150	0	0	0	

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	3/2/2012	Run ID:	GC-I_120302A
Client ID:	ZZZZZ	Batch ID:	30916	TestNo:	NWTPH-Gx			Analysis Date:	3/2/2012	SeqNo:	819708
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2765	100	3000	0	92.2	80	120	0	0	0	

**Qualifiers:** ND - Not Detected at the Reporting Limit      S - Spike Recovery outside accepted recovery limits      B - Analyte detected in the associated Method Blank  
 J - Analyte detected below quantitation limits      R - RPD outside accepted recovery limits



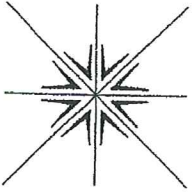
## KEY TO FLAGS

Rev. May 12, 2010

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- A4 The product appears to be aged or degraded diesel.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended holding time.
- HT At clients request, samples was analyzed outside of recommended holding time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits; post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- \* The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.

# CHAIN OF CUSTODY RECORD

**Specialty Analytical**  
 11711 SE Capps Road  
 Clackamas, OR 97015  
 Phone: 503-607-1331  
 Fax: 503-607-1336



Contact Person/Project Manager Tim O'GARA  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_  
 Project No. \_\_\_\_\_ Project Name CARSON-GOLDENALE  
 Project Site Location OR WA X Other \_\_\_\_\_  
 Invoice To 4 C'S ENVIRONMENTAL P.O. No. \_\_\_\_\_

Collected By: [Signature]  
 Signature \_\_\_\_\_  
 Printed TIM O'GARA

Signature \_\_\_\_\_  
 Printed \_\_\_\_\_

Turn Around Time 15 TEX & DX  
 Normal 5-7 Business Days  
 Rush 24 HR 6X Specify

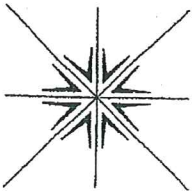
Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	No. of Containers	Analysis	For Laboratory Use	Relinquished By:	Date	Time
3/1	10:20	B-1-5	S		<del>STEX</del>	Lab Job No. <u>1203027</u> Shipped Via <u>CLP</u> Air Bill No. _____ Temperature On Receipt _____ °C Specialty Analytical Containers? Y/N Specialty Analytical Trip Blanks? Y/N			
	2:52	B-1-6	S		STEX				
	10:57	B-2-5	S		Total Pb				
	10:59	B-2-7	S		Total Pb				
	11:05	B-2-6	S		Total Pb				
	11:23	B-3-5	S		Total Pb				
	11:28	B-3-7	S		Total Pb				
	12:08	B-4-5	S		Total Pb				
	12:12	B-4-7	S		Total Pb				
	12:27	B-5-5	S		Total Pb				
	12:37	B-5-8	S		Total Pb				
	1:03	B-6-5	S		Total Pb				
Relinquished By: <u>[Signature]</u> Date <u>3/2/12</u> Time <u>8:24</u> Company: _____								Received By: _____ Date _____ Time _____ Company: _____	
Relinquished By: _____ Date _____ Time _____ Company: _____								Received For Lab By: <u>[Signature]</u> Date <u>3/2/12</u> Time <u>8:24</u> Company: _____	

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.  
 Samples held beyond 60 days subject to storage fee(s)



# CHAIN OF CUSTODY RECORD



## Specialty Analytical

11711 SE Capps Road  
Clackamas, OR 97015  
Phone: 503-607-1331  
Fax: 503-607-1336

Contact Person/Project Manager Tim O'Leary

Company \_\_\_\_\_  
Address \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_

Collected By: \_\_\_\_\_ Project Name CARSEN - GOLDENHILL

Signature \_\_\_\_\_ Project Site Location OR WA  Other \_\_\_\_\_

Printed \_\_\_\_\_ Invoice To 4C's ENVIRONMENTAL P.O. No. \_\_\_\_\_

Turn Around Time \_\_\_\_\_  
 Normal 5-7 Business Days / 15 TEX 2-17X  
 Rush GK (24 HR)

Specify \_\_\_\_\_  
Rush Analyses Must Be Scheduled With The Lab In Advance

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses				For Laboratory Use		
					NUMPH-GX	ISTEX	KUTPR-DX		Lab Job No.	Comments	Lab I.D.
3/1	1:08	B-6-8	S						1203007		13
	12:07	B-7-5							client		14
	1:35	B-7-8									15
	1:52	B-8-5									16
	1:55	B-8-8									17
	2:15	B-4-6									18
	2:34	B-6-6									19
	2:10	B-9-5									20
	2:13	B-9-7									21
	3:26	B-10-5									22
	3:35	B-10-9									23
	2:40	B-8-10									24
Relinquished By: <u>[Signature]</u> Date: <u>3/1</u> Time: <u>8:24</u>				Received By: _____ Date: _____ Time: _____				Relinquished By: _____ Date: _____ Time: _____			
Company: _____				Company: _____				Company: _____			

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.  
Samples held beyond 60 days subject to storage fee(s)

# CHAIN OF CUSTODY RECORD

**Specialty Analytical**  
 11711 SE Capps Road  
 Clackamas, OR 97015  
 Phone: 503-607-1331  
 Fax: 503-607-1336

Contact Person/Project Manager Tim O'Leary  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 Phone \_\_\_\_\_ Fax \_\_\_\_\_

Project No. \_\_\_\_\_ Project Name CARSON GOLDEN  
 Project Site Location OR WA XO Other \_\_\_\_\_  
 Invoice To Y C'S ENVIRONMENTAL P.O. No. \_\_\_\_\_

Collected By: Tim O'Leary  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_

Signature \_\_\_\_\_  
 Printed \_\_\_\_\_

Turn Around Time \_\_\_\_\_  
 Normal 5-7 Business Days  
 Rush 24 hr - GX  
 Specify STEX & DX

Rush Analyses Must Be Scheduled With The Lab In Advance

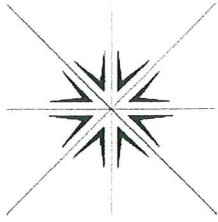
Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses		For Laboratory Use		
					STEX	DX	Lab Job No.	Comments	
3/1	2:40	B-9-6	W					1203027	
	3:25	B-10-5							
	3:35	B-10-9							
	3:32	B-11-5							
	3:35	B-11-7							
	3:56	B-12-5							
	4:00	B-12-9							
	4:11	B-13-5							
	4:15	B-13-9							
	4:25	B-14-5							
	4:29	B-14-7							

Shipped Via Client  
 Air Bill No. \_\_\_\_\_  
 Temperature On Receipt \_\_\_\_\_ °C  
 Specialty Analytical Containers? Y / N  
 Specialty Analytical Trip Blanks? Y / N

Relinquished By: Tim O'Leary Date: 3/2/12 Time: 8:24  
 Company: \_\_\_\_\_  
 Received By: [Signature] Date: 3/2/12 Time: 8:24  
 Company: \_\_\_\_\_

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.  
 Samples held beyond 60 days subject to storage fee(s)





# Specialty Analytical

11711 SE Capps Road, Ste B  
Clackamas, Oregon 97015  
TEL: 503-607-1331 FAX: 503-607-1336  
Website: [www.specialtyanalytical.com](http://www.specialtyanalytical.com)

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May 01, 2012

Scott Michaels  
4C's Environmental, Inc.  
1590 SE Uglow Street  
Dallas, Oregon 97338  
TEL: (503) 606-3020  
FAX: (503) 606-3120  
RE: Carson-Goldendale

Dear Scott Michaels:

Order No.: 1204191

Specialty Analytical received 4 sample(s) on 4/20/2012 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Marty French  
Lab Director

# Specialty Analytical

Date Reported: 01-May-12

CLIENT: 4C's Environmental, Inc.  
Project: Carson-Goldendale

Lab Order: 1204191

Lab ID: 1204191-001

Collection Date: 4/20/2012 10:02:00 AM

Client Sample ID: MW-1

Matrix: GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: <b>jrp</b>		
Gasoline	ND	100		µg/L	1	4/23/2012 8:00:00 AM
Surr: 4-Bromofluorobenzene	91.2	50-150		%REC	1	4/23/2012 8:00:00 AM
<b>RBC VOLATILES</b>		<b>SW8260B</b>		Analyst: <b>rg</b>		
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
Benzene	5.38	0.300		µg/L	1	4/25/2012 1:18:00 PM
Ethylbenzene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
Isopropylbenzene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
m,p-Xylene	ND	2.00		µg/L	1	4/25/2012 1:18:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
Naphthalene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
n-Propylbenzene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
o-Xylene	ND	1.00		µg/L	1	4/25/2012 1:18:00 PM
Toluene	9.05	1.00		µg/L	1	4/25/2012 1:18:00 PM
Surr: 1,2-Dichloroethane-d4	99.1	72.2-129		%REC	1	4/25/2012 1:18:00 PM
Surr: 4-Bromofluorobenzene	109	73.5-125		%REC	1	4/25/2012 1:18:00 PM
Surr: Dibromofluoromethane	113	58.8-148		%REC	1	4/25/2012 1:18:00 PM
Surr: Toluene-d8	121	79.8-137		%REC	1	4/25/2012 1:18:00 PM
<b>EDB/EDC/DBCP BY MICROEXTRACTION</b>		<b>8011 MOD.</b>		Analyst: <b>jrp</b>		
1,2-Dibromoethane (EDB)	ND	0.023		µg/L	1	4/27/2012 11:00:00 AM
Surr: DBCP	116	50-150		%REC	1	4/27/2012 11:00:00 AM

# Specialty Analytical

Date Reported: 01-May-12

CLIENT: 4C's Environmental, Inc.  
Project: Carson-Goldendale

Lab Order: 1204191

Lab ID: 1204191-002

Collection Date: 4/20/2012 10:52:00 AM

Client Sample ID: MW-2

Matrix: GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: <b>jrj</b>		
Gasoline	8,910	500		µg/L	5	4/23/2012 8:00:00 AM
Surr: 4-Bromofluorobenzene	93.0	50-150		%REC	5	4/23/2012 8:00:00 AM
<b>RBC VOLATILES</b>		<b>SW8260B</b>		Analyst: <b>rg</b>		
1,2,4-Trimethylbenzene	27.3	1.00		µg/L	1	4/25/2012 12:05:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	4/25/2012 12:05:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	4/25/2012 12:05:00 PM
1,3,5-Trimethylbenzene	7.79	1.00		µg/L	1	4/25/2012 12:05:00 PM
Benzene	1,250	3.00		µg/L	10	4/25/2012 4:14:00 PM
Ethylbenzene	72.8	1.00		µg/L	1	4/25/2012 12:05:00 PM
Isopropylbenzene	4.78	1.00		µg/L	1	4/25/2012 12:05:00 PM
m,p-Xylene	422	20.0		µg/L	10	4/25/2012 4:14:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	4/25/2012 12:05:00 PM
Naphthalene	8.70	1.00		µg/L	1	4/25/2012 12:05:00 PM
n-Propylbenzene	10.3	1.00		µg/L	1	4/25/2012 12:05:00 PM
o-Xylene	351	10.0		µg/L	10	4/25/2012 4:14:00 PM
Toluene	1,800	10.0		µg/L	10	4/25/2012 4:14:00 PM
Surr: 1,2-Dichloroethane-d4	92.3	72.2-129		%REC	1	4/25/2012 12:05:00 PM
Surr: 4-Bromofluorobenzene	102	73.5-125		%REC	1	4/25/2012 12:05:00 PM
Surr: Dibromofluoromethane	104	58.8-148		%REC	1	4/25/2012 12:05:00 PM
Surr: Toluene-d8	98.5	79.8-137		%REC	1	4/25/2012 12:05:00 PM
<b>EDB/EDC/DBCP BY MICROEXTRACTION</b>		<b>8011 MOD.</b>		Analyst: <b>jrj</b>		
1,2-Dibromoethane (EDB)	ND	0.023		µg/L	1	4/27/2012 11:00:00 AM
Surr: DBCP	132	50-150		%REC	1	4/27/2012 11:00:00 AM

# Specialty Analytical

Date Reported: 01-May-12

CLIENT: 4C's Environmental, Inc.  
Project: Carson-Goldendale

Lab Order: 1204191

Lab ID: 1204191-003

Collection Date: 4/20/2012 11:22:00 AM

Client Sample ID: MW-3

Matrix: GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>NWTPH-GX</b>						Analyst: jrp
Gasoline	5,080	100		µg/L	1	4/23/2012 8:00:00 AM
Surr: 4-Bromofluorobenzene	111	50-150		%REC	1	4/23/2012 8:00:00 AM
<b>RBC VOLATILES</b>						Analyst: rg
1,2,4-Trimethylbenzene	125	1.00		µg/L	1	4/25/2012 1:54:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	4/25/2012 1:54:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	4/25/2012 1:54:00 PM
1,3,5-Trimethylbenzene	71.4	1.00		µg/L	1	4/25/2012 1:54:00 PM
Benzene	4.00	0.300		µg/L	1	4/25/2012 1:54:00 PM
Ethylbenzene	27.0	1.00		µg/L	1	4/25/2012 1:54:00 PM
Isopropylbenzene	30.6	1.00		µg/L	1	4/25/2012 1:54:00 PM
m,p-Xylene	9.37	2.00		µg/L	1	4/25/2012 1:54:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	4/25/2012 1:54:00 PM
Naphthalene	66.0	1.00		µg/L	1	4/25/2012 1:54:00 PM
n-Propylbenzene	124	1.00		µg/L	1	4/25/2012 1:54:00 PM
o-Xylene	ND	1.00		µg/L	1	4/25/2012 1:54:00 PM
Toluene	6.41	1.00		µg/L	1	4/25/2012 1:54:00 PM
Surr: 1,2-Dichloroethane-d4	93.4	72.2-129		%REC	1	4/25/2012 1:54:00 PM
Surr: 4-Bromofluorobenzene	98.5	73.5-125		%REC	1	4/25/2012 1:54:00 PM
Surr: Dibromofluoromethane	101	58.8-148		%REC	1	4/25/2012 1:54:00 PM
Surr: Toluene-d8	99.6	79.8-137		%REC	1	4/25/2012 1:54:00 PM
<b>EDB/EDC/DBCP BY MICROEXTRACTION</b>						Analyst: jrp
1,2-Dibromoethane (EDB)	ND	0.023		µg/L	1	4/27/2012 11:00:00 AM
Surr: DBCP	139	50-150		%REC	1	4/27/2012 11:00:00 AM



# Specialty Analytical

Date Reported: 01-May-12

**CLIENT:** 4C's Environmental, Inc.  
**Project:** Carson-Goldendale

**Lab Order:** 1204191

**Lab ID:** 1204191-004

**Collection Date:** 4/20/2012 10:33:00 AM

**Client Sample ID:** MW-4

**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: <b>jrp</b>		
Gasoline	6,000	500	A	µg/L	5	4/23/2012 8:00:00 AM
Surr: 4-Bromofluorobenzene	106	50-150		%REC	5	4/23/2012 8:00:00 AM
<b>RBC VOLATILES</b>		<b>SW8260B</b>		Analyst: <b>rg</b>		
1,2,4-Trimethylbenzene	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
1,3,5-Trimethylbenzene	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
Benzene	ND	0.300		µg/L	1	4/25/2012 2:29:00 PM
Ethylbenzene	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
Isopropylbenzene	6.76	1.00		µg/L	1	4/25/2012 2:29:00 PM
m,p-Xylene	ND	2.00		µg/L	1	4/25/2012 2:29:00 PM
Methyl tert-butyl ether	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
Naphthalene	7.19	1.00		µg/L	1	4/25/2012 2:29:00 PM
n-Propylbenzene	13.7	1.00		µg/L	1	4/25/2012 2:29:00 PM
o-Xylene	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
Toluene	ND	1.00		µg/L	1	4/25/2012 2:29:00 PM
Surr: 1,2-Dichloroethane-d4	107	72.2-129		%REC	1	4/25/2012 2:29:00 PM
Surr: 4-Bromofluorobenzene	93.6	73.5-125		%REC	1	4/25/2012 2:29:00 PM
Surr: Dibromofluoromethane	103	58.8-148		%REC	1	4/25/2012 2:29:00 PM
Surr: Toluene-d8	91.7	79.8-137		%REC	1	4/25/2012 2:29:00 PM
<b>EDB/EDC/DBCP BY MICROEXTRACTION</b>		<b>8011 MOD.</b>		Analyst: <b>jrp</b>		
1,2-Dibromoethane (EDB)	ND	0.023		µg/L	1	4/27/2012 11:00:00 AM
Surr: DBCP	117	50-150		%REC	1	4/27/2012 11:00:00 AM

# QC SUMMARY REPORT

WO#: 1204191  
01-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8011\_W

Sample ID: CCV	SampType: CCV	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3955						
Client ID: CCV	Batch ID: R3955	TestNo: 8011 Mod.		Analysis Date: 4/27/2012	SeqNo: 53207						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	3.09	0.023	2.850	0	108	80	120				

Sample ID: MB-3955	SampType: MBLK	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3955						
Client ID: PBW	Batch ID: R3955	TestNo: 8011 Mod.		Analysis Date: 4/27/2012	SeqNo: 53208						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	ND	0.023									
Surr: DBCP	2.81		2.280		123	50	150				

Sample ID: LCS-3955	SampType: LCS	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3955						
Client ID: LCSW	Batch ID: R3955	TestNo: 8011 Mod.		Analysis Date: 4/27/2012	SeqNo: 53209						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	1.38	0.023	1.425	0	97.1	80	120				

Sample ID: LCSD-3955	SampType: LCSD	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3955						
Client ID: LCSS02	Batch ID: R3955	TestNo: 8011 Mod.		Analysis Date: 4/27/2012	SeqNo: 53210						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	1.41	0.023	1.425	0	98.9	80	120	1.384	1.80	20	

Sample ID: CCV	SampType: CCV	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3955						
Client ID: CCV	Batch ID: R3955	TestNo: 8011 Mod.		Analysis Date: 4/27/2012	SeqNo: 53215						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank  
 R RPD outside accepted recovery limits  
 H Holding times for preparation or analysis exceeded  
 S Spike Recovery outside accepted recovery limits  
 ND Not Detected at the Reporting Limit

# QC SUMMARY REPORT

WO#: 1204191  
01-May-12

## Specialty Analytical

**Client:** 4C's Environmental, Inc.  
**Project:** Carson-Goldendale

**TestCode:** 8011\_W

Sample ID: CCV	SampType: CCV	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3955						
Client ID: CCV	Batch ID: R3955	TestNo: 8011 Mod.		Analysis Date: 4/27/2012	SeqNo: 53215						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	3.20	0.023	2.850	0	112	80	120				

**Qualifiers:** B Analyte detected in the associated Method Blank    H Holding times for preparation or analysis exceeded    ND Not Detected at the Reporting Limit    Page 2 of 6  
R RPD outside accepted recovery limits    S Spike Recovery outside accepted recovery limits

# QC SUMMARY REPORT

WO#: 1204191  
01-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8260\_W

Sample ID:	GCV-3926	SampType:	CCV	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3926	
Client ID:	CCV	Batch ID:	R3926	TestNo:	SW8260B			Analysis Date:	SeqNo:	52422	
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	39.3	1.00	40.00	0	98.3	80	120				
Toluene	34.5	1.00	40.00	0	86.2	80	120				

Sample ID:	LCS-3926	SampType:	LCS	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3926	
Client ID:	LCSW	Batch ID:	R3926	TestNo:	SW8260B			Analysis Date:	SeqNo:	52423	
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	44.7	0.300	40.00	0	112	77.9	125				
Toluene	39.0	1.00	40.00	0	97.5	74.6	119				

Sample ID:	MBLK-3926	SampType:	MBLK	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3926	
Client ID:	PBW	Batch ID:	R3926	TestNo:	SW8260B			Analysis Date:	SeqNo:	52424	
Analyte	Result	PQL	SPK value	SPK RefVal	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	1.00									
1,2-Dibromoethane	ND	1.00									
1,2-Dichloroethane	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
Benzene	ND	0.300									
Ethylbenzene	ND	1.00									
Isopropylbenzene	ND	1.00									
m,p-Xylene	ND	2.00									
Methyl tert-butyl ether	ND	1.00									
Naphthalene	ND	1.00									
n-Propylbenzene	ND	1.00									

Qualifiers: B Analyte detected in the associated Method Blank  
 R RPD outside accepted recovery limits  
 H Holding times for preparation or analysis exceeded  
 S Spike Recovery outside accepted recovery limits  
 ND Not Detected at the Reporting Limit



# QC SUMMARY REPORT

WO#: 1204191  
01-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8260\_W

Sample ID: MBLK-3926	SampType: MBLK	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3926						
Client ID: PBW	Batch ID: R3926	TestNo: SW8260B		Analysis Date: 4/25/2012	SeqNo: 52424						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
o-Xylene	ND	1.00									
Toluene	ND	1.00									
Surr: 1,2-Dichloroethane-d4	100		100.0		100	72.2	129				
Surr: 4-Bromofluorobenzene	96.3		100.0		96.3	73.5	125				
Surr: Dibromofluoromethane	112		100.0		112	58.8	148				
Surr: Toluene-d8	103		100.0		103	79.8	137				

Sample ID: 1204191-001AMS	SampType: MS	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3926						
Client ID: MW-1	Batch ID: R3926	TestNo: SW8260B		Analysis Date: 4/25/2012	SeqNo: 52433						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	39.6	0.300	40.00	5.380	85.6	71.5	118				
Toluene	41.6	1.00	40.00	9.050	81.3	79.6	121				

Sample ID: 1204191-001AMSD	SampType: MSD	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3926						
Client ID: MW-1	Batch ID: R3926	TestNo: SW8260B		Analysis Date: 4/25/2012	SeqNo: 52434						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.0	0.300	40.00	5.380	91.4	71.5	118	39.63	5.69	20	
Toluene	44.7	1.00	40.00	9.050	89.2	79.6	121	41.56	7.32	20	

Sample ID: CCV-3926	SampType: CCV	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3926						
Client ID: CCV	Batch ID: R3926	TestNo: SW8260B		Analysis Date: 4/25/2012	SeqNo: 52435						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	42.0	0.300	40.00	5.380	91.4	71.5	118	39.63	5.69	20	
Toluene	44.7	1.00	40.00	9.050	89.2	79.6	121	41.56	7.32	20	

Qualifiers: B Analyte detected in the associated Method Blank  
R RPD outside accepted recovery limits  
H Holding times for preparation or analysis exceeded  
S Spike Recovery outside accepted recovery limits

# QC SUMMARY REPORT

WO#: 1204191  
01-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8260\_W

Sample ID: CCV-3926	SampType: CCV	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3926						
Client ID: CCV	Batch ID: R3926	TestNo: SW8260B		Analysis Date: 4/25/2012	SeqNo: 52435						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	41.2	1.00	40.00	0	103	80	120				
Toluene	46.3	1.00	40.00	0	116	80	120				

Sample ID: MBLK-3926	SampType: MBLK	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3926						
Client ID: PBW	Batch ID: R3926	TestNo: SW8260B		Analysis Date: 4/25/2012	SeqNo: 52436						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	1.00									
1,2-Dibromoethane	ND	1.00									
1,2-Dichloroethane	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
Benzene	ND	0.300									
Ethylbenzene	ND	1.00									
Isopropylbenzene	ND	1.00									
m,p-Xylene	ND	2.00									
Methyl tert-butyl ether	ND	1.00									
Naphthalene	ND	1.00									
n-Propylbenzene	ND	1.00									
o-Xylene	ND	1.00									
Toluene	ND	1.00									
Surr: 1,2-Dichloroethane-d4	97.5		100.0		97.5	72.2	129				
Surr: 4-Bromofluorobenzene	100		100.0		100	73.5	125				
Surr: Dibromofluoromethane	105		100.0		105	58.8	148				
Surr: Toluene-d8	116		100.0		116	79.8	137				

Qualifiers: B Analyte detected in the associated Method Blank  
R RPD outside accepted recovery limits  
H Holding times for preparation or analysis exceeded  
S Spike Recovery outside accepted recovery limits  
ND Not Detected at the Reporting Limit

# QC SUMMARY REPORT

WO#: 1204191  
01-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: NWTPHGX\_W

Sample ID:	LCS-3866	SampType:	LCS	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	RunNo:	3866	
Client ID:	LCSW	Batch ID:	R3866	TestNo:	NWTPH-Gx			Analysis Date:	SeqNo:	51645	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2,490	100	2,500	0	99.6	74.4	128				

Sample ID:	MB-3866	SampType:	MBLK	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	RunNo:	3866	
Client ID:	PBW	Batch ID:	R3866	TestNo:	NWTPH-Gx			Analysis Date:	SeqNo:	51646	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	100									
Surr: 4-Bromofluorobenzene	93.3		100.0		93.3	50	150				

Sample ID:	1204191-004ADUP	SampType:	DUP	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	RunNo:	3866	
Client ID:	MW-4	Batch ID:	R3866	TestNo:	NWTPH-Gx			Analysis Date:	SeqNo:	51651	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	6,140	500						5,998	2.33	20	A

Sample ID:	CCV	SampType:	CCV	TestCode:	NWTPHGX_	Units:	µg/L	Prep Date:	RunNo:	3866	
Client ID:	CCV	Batch ID:	R3866	TestNo:	NWTPH-Gx			Analysis Date:	SeqNo:	51652	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2,710	100	3,000	0	90.2	80	120				

Qualifiers: B Analyte detected in the associated Method Blank  
 R RPD outside accepted recovery limits  
 H Holding times for preparation or analysis exceeded  
 S Spike Recovery outside accepted recovery limits  
 ND Not Detected at the Reporting Limit



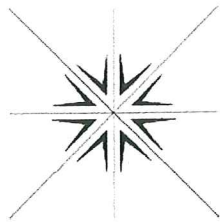
## KEY TO FLAGS

Rev. May 12, 2010

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- A4 The product appears to be aged or degraded diesel.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended holding time.
- HT At clients request, samples was analyzed outside of recommended holding time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits; post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- \* The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.







# Specialty Analytical

11711 SE Capps Road, Ste B  
Clackamas, Oregon 97015  
TEL: 503-607-1331 FAX: 503-607-1336  
Website: [www.specialtyanalytical.com](http://www.specialtyanalytical.com)

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May 03, 2012

Scott Michaels  
4C's Environmental, Inc.  
1590 SE Uglow Street  
Dallas, Oregon 97338  
TEL: (503) 606-3020  
FAX: (503) 606-3120  
RE: Carson-Goldendale

Dear Scott Michaels:

Order No.: 1204255

Specialty Analytical received 2 sample(s) on 4/30/2012 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications, except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Marty French  
Lab Director

# Specialty Analytical

Date Reported: 03-May-12

**CLIENT:** 4C's Environmental, Inc.  
**Project:** Carson-Goldendale

**Lab Order:** 1204255

**Lab ID:** 1204255-001  
**Client Sample ID:** MW-2

**Collection Date:** 4/30/2012 9:55:00 AM  
**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: <b>jrp</b>		
Gasoline	14,500	500		µg/L	5	5/1/2012 8:30:00 AM
Surr: 4-Bromofluorobenzene	90.9	50-150		%REC	5	5/1/2012 8:30:00 AM
<b>RBC VOLATILES</b>		<b>SW8260B</b>		Analyst: <b>rg</b>		
1,2,4-Trimethylbenzene	29.4	1.00		µg/L	1	4/30/2012 3:59:00 PM
1,2-Dibromoethane	ND	1.00		µg/L	1	4/30/2012 3:59:00 PM
1,2-Dichloroethane	ND	1.00		µg/L	1	4/30/2012 3:59:00 PM
1,3,5-Trimethylbenzene	14.0	1.00		µg/L	1	4/30/2012 3:59:00 PM
Benzene	829	1.50		µg/L	5	5/3/2012 3:26:00 AM
Ethylbenzene	104	1.00		µg/L	1	4/30/2012 3:59:00 PM
Isopropylbenzene	8.31	1.00		µg/L	1	4/30/2012 3:59:00 PM
m,p-Xylene	221	10.0		µg/L	5	5/3/2012 3:26:00 AM
Methyl tert-butyl ether	ND	1.00		µg/L	1	4/30/2012 3:59:00 PM
Naphthalene	10.2	1.00		µg/L	1	4/30/2012 3:59:00 PM
n-Propylbenzene	17.5	1.00		µg/L	1	4/30/2012 3:59:00 PM
o-Xylene	208	5.00		µg/L	5	5/3/2012 3:26:00 AM
Toluene	1,410	20.0		µg/L	20	5/3/2012 2:52:00 AM
Surr: 1,2-Dichloroethane-d4	92.0	72.2-129		%REC	1	4/30/2012 3:59:00 PM
Surr: 4-Bromofluorobenzene	87.2	73.5-125		%REC	1	4/30/2012 3:59:00 PM
Surr: Dibromofluoromethane	107	58.8-148		%REC	1	4/30/2012 3:59:00 PM
Surr: Toluene-d8	96.4	79.8-137		%REC	1	4/30/2012 3:59:00 PM
<b>EDB/EDC/DBCP BY MICROEXTRACTION</b>		<b>8011 MOD.</b>		Analyst: <b>jrp</b>		
1,2-Dibromoethane (EDB)	ND	0.023		µg/L	1	4/30/2012 2:30:00 PM
Surr: DBCP	143	50-150		%REC	1	4/30/2012 2:30:00 PM



# Specialty Analytical

Date Reported: 03-May-12

**CLIENT:** 4C's Environmental, Inc.  
**Project:** Carson-Goldendale

**Lab Order:** 1204255

**Lab ID:** 1204255-002

**Collection Date:** 4/30/2012 9:38:00 AM

**Client Sample ID:** MW-3

**Matrix:** GROUNDWATER

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
<b>NWTPH-GX</b>		<b>NWTPH-GX</b>		Analyst: jrp		
Gasoline	6,180	100		µg/L	1	
Surr: 4-Bromofluorobenzene	139	50-150		%REC	1	
<b>RBC VOLATILES</b>		<b>SW8260B</b>		Analyst: rg		
1,2,4-Trimethylbenzene	67.1	1.00		µg/L	1	5/3/2012 2:18:00 AM
1,2-Dibromoethane	ND	1.00		µg/L	1	5/3/2012 2:18:00 AM
1,2-Dichloroethane	ND	1.00		µg/L	1	5/3/2012 2:18:00 AM
1,3,5-Trimethylbenzene	38.1	1.00		µg/L	1	5/3/2012 2:18:00 AM
Benzene	0.600	0.300		µg/L	1	5/3/2012 2:18:00 AM
Ethylbenzene	7.75	1.00		µg/L	1	5/3/2012 2:18:00 AM
Isopropylbenzene	13.8	1.00		µg/L	1	5/3/2012 2:18:00 AM
m,p-Xylene	6.08	2.00		µg/L	1	5/3/2012 2:18:00 AM
Methyl tert-butyl ether	ND	1.00		µg/L	1	5/3/2012 2:18:00 AM
Naphthalene	39.6	1.00		µg/L	1	5/3/2012 2:18:00 AM
n-Propylbenzene	56.8	1.00		µg/L	1	5/3/2012 2:18:00 AM
o-Xylene	ND	1.00		µg/L	1	5/3/2012 2:18:00 AM
Toluene	ND	1.00		µg/L	1	5/3/2012 2:18:00 AM
Surr: 1,2-Dichloroethane-d4	100	85.3-116		%REC	1	5/3/2012 2:18:00 AM
Surr: 4-Bromofluorobenzene	96.2	88.1-120		%REC	1	5/3/2012 2:18:00 AM
Surr: Dibromofluoromethane	99.1	94.2-122		%REC	1	5/3/2012 2:18:00 AM
Surr: Toluene-d8	97.2	86.2-135		%REC	1	5/3/2012 2:18:00 AM
<b>EDB/EDC/DBCP BY MICROEXTRACTION</b>		<b>8011 MOD.</b>		Analyst: jrp		
1,2-Dibromoethane (EDB)	ND	0.023		µg/L	1	4/30/2012 2:30:00 PM
Surr: DBCP	127	50-150		%REC	1	4/30/2012 2:30:00 PM



# QC SUMMARY REPORT

WO#: 1204255  
03-May-12

## Specialty Analytical

**Client:** 4C's Environmental, Inc.  
**Project:** Carson-Goldendale

**TestCode:** 8011\_W

<b>Sample ID:</b> CCV	<b>SampType:</b> CCV	<b>TestCode:</b> 8011_W	<b>Units:</b> µg/L	<b>Prep Date:</b>	<b>RunNo:</b> 3978						
<b>Client ID:</b> CCV	<b>Batch ID:</b> R3978	<b>TestNo:</b> 8011 Mod.		<b>Analysis Date:</b> 4/30/2012	<b>SeqNo:</b> 53200						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK Ref Val</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
1,2-Dibromoethane (EDB)	3.08	0.023	2.850	0	108	80	120				

<b>Sample ID:</b> MB-3978	<b>SampType:</b> MBLK	<b>TestCode:</b> 8011_W	<b>Units:</b> µg/L	<b>Prep Date:</b>	<b>RunNo:</b> 3978						
<b>Client ID:</b> PBW	<b>Batch ID:</b> R3978	<b>TestNo:</b> 8011 Mod.		<b>Analysis Date:</b> 4/30/2012	<b>SeqNo:</b> 53201						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK Ref Val</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
1,2-Dibromoethane (EDB)	ND	0.023									
<b>Surr:</b> DBCP	2.69		2.280		118	50	150				

<b>Sample ID:</b> LCS-3978	<b>SampType:</b> LCS	<b>TestCode:</b> 8011_W	<b>Units:</b> µg/L	<b>Prep Date:</b>	<b>RunNo:</b> 3978						
<b>Client ID:</b> LCSW	<b>Batch ID:</b> R3978	<b>TestNo:</b> 8011 Mod.		<b>Analysis Date:</b> 4/30/2012	<b>SeqNo:</b> 53204						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK Ref Val</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
1,2-Dibromoethane (EDB)	1.46	0.023	1.425	0	103	80	120				

<b>Sample ID:</b> LCSD-3978	<b>SampType:</b> LCSD	<b>TestCode:</b> 8011_W	<b>Units:</b> µg/L	<b>Prep Date:</b>	<b>RunNo:</b> 3978						
<b>Client ID:</b> LCSS02	<b>Batch ID:</b> R3978	<b>TestNo:</b> 8011 Mod.		<b>Analysis Date:</b> 4/30/2012	<b>SeqNo:</b> 53205						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK Ref Val</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>
1,2-Dibromoethane (EDB)	1.26	0.023	1.425	0	88.8	80	120	1.463	14.5	20	

<b>Sample ID:</b> CCV	<b>SampType:</b> CCV	<b>TestCode:</b> 8011_W	<b>Units:</b> µg/L	<b>Prep Date:</b>	<b>RunNo:</b> 3978						
<b>Client ID:</b> CCV	<b>Batch ID:</b> R3978	<b>TestNo:</b> 8011 Mod.		<b>Analysis Date:</b> 4/30/2012	<b>SeqNo:</b> 53206						
<b>Analyte</b>	<b>Result</b>	<b>PQL</b>	<b>SPK value</b>	<b>SPK Ref Val</b>	<b>%REC</b>	<b>LowLimit</b>	<b>HighLimit</b>	<b>RPD Ref Val</b>	<b>%RPD</b>	<b>RPDLimit</b>	<b>Qual</b>

**Qualifiers:** B Analyte detected in the associated Method Blank  
 R RPD outside accepted recovery limits  
 H Holding times for preparation or analysis exceeded  
 S Spike Recovery outside accepted recovery limits  
 ND Not Detected at the Reporting Limit



# QC SUMMARY REPORT

WO#: 1204255  
03-May-12

## Specialty Analytical

**Client:** 4C's Environmental, Inc.  
**Project:** Carson-Goldendale

**TestCode:** 8011\_W

Sample ID: CCV	SampType: CCV	TestCode: 8011_W	Units: µg/L	Prep Date:	RunNo: 3978						
Client ID: CCV	Batch ID: R3978	TestNo: 8011 Mod.		Analysis Date: 4/30/2012	SeqNo: 53206						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2-Dibromoethane (EDB)	3.00	0.023	2.850	0	105	80	120				

**Qualifiers:** B Analyte detected in the associated Method Blank      H Holding times for preparation or analysis exceeded      ND Not Detected at the Reporting Limit      Page 2 of 6  
R RPD outside accepted recovery limits      S Spike Recovery outside accepted recovery limits

# QC SUMMARY REPORT

WO#: 1204255  
03-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8260\_W

Sample ID:	CCV-3990	SampType:	CCV	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	CCV	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	SeqNo:	53308	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	40.2	1.00	40.00	0	100	80	120				
Toluene	39.9	1.00	40.00	0	99.7	80	120				

Sample ID:	LCS-3990	SampType:	LCS	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	LCSW	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	SeqNo:	53309	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	43.0	0.300	40.00	0	108	77.9	125				
Toluene	41.9	1.00	40.00	0	105	74.6	119				

Sample ID:	MBLK-3990	SampType:	MBLK	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	PBW	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	SeqNo:	53310	
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trimethylbenzene	ND	1.00									
1,2-Dibromoethane	ND	1.00									
1,2-Dichloroethane	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
Benzene	ND	0.300									
Ethylbenzene	ND	1.00									
Isopropylbenzene	ND	1.00									
m,p-Xylene	ND	2.00									
Methyl tert-butyl ether	ND	1.00									
Naphthalene	ND	1.00									
n-Propylbenzene	ND	1.00									

Qualifiers: B Analyte detected in the associated Method Blank H Holding times for preparation or analysis exceeded ND Not Detected at the Reporting Limit Page 3 of 6  
R RPD outside accepted recovery limits S Spike Recovery outside accepted recovery limits



# QC SUMMARY REPORT

WO#: 1204255  
03-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8260\_W

Sample ID:	MBLK-3990	SampType:	MBLK	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	PBW	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	4/30/2012	SeqNo:	53310
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

o-Xylene	ND	1.00									
Toluene	ND	1.00									
Surr: 1,2-Dichloroethane-d4	104		100.0		104	72.2	129				
Surr: 4-Bromofluorobenzene	116		100.0		116	73.5	125				
Surr: Dibromofluoromethane	119		100.0		119	58.8	148				
Surr: Toluene-d8	107		100.0		107	79.8	137				

Sample ID:	1204252-001BMS	SampType:	MS	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	ZZZZZ	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	4/30/2012	SeqNo:	53314
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	42.8	0.300	40.00	0	107	71.5	118				
Toluene	38.9	1.00	40.00	0	97.4	79.6	121				

Sample ID:	1204252-001BMSD	SampType:	MSD	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	ZZZZZ	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	4/30/2012	SeqNo:	53315
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Benzene	39.4	0.300	40.00	0	98.6	71.5	118	42.81	8.19	20	
Toluene	39.8	1.00	40.00	0	99.4	79.6	121	38.94	2.11	20	

Sample ID:	CCV-3990	SampType:	CCV	TestCode:	8260_W	Units:	µg/L	Prep Date:	RunNo:	3990	
Client ID:	CCV	Batch ID:	R3990	TestNo:	SW8260B			Analysis Date:	5/2/2012	SeqNo:	54284
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: B Analyte detected in the associated Method Blank    H Holding times for preparation or analysis exceeded    ND Not Detected at the Reporting Limit    Page 4 of 6  
R RPD outside accepted recovery limits    S Spike Recovery outside accepted recovery limits

# QC SUMMARY REPORT

WO#: 1204255  
03-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: 8260\_W

Sample ID: CCV-3990	SampType: CCV	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3990						
Client ID: CCV	Batch ID: R3990	TestNo: SW8260B		Analysis Date: 5/2/2012	SeqNo: 54284						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Ethylbenzene	60.3	1.00	60.00	0	100	80	120				
Toluene	61.4	1.00	60.00	0	102	80	120				

Sample ID: CCB-3990	SampType: CCB	TestCode: 8260_W	Units: µg/L	Prep Date:	RunNo: 3990						
Client ID: CCB	Batch ID: R3990	TestNo: SW8260B		Analysis Date: 5/3/2012	SeqNo: 54285						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trimethylbenzene	ND	1.00									
1,2-Dibromoethane	ND	1.00									
1,2-Dichloroethane	ND	1.00									
1,3,5-Trimethylbenzene	ND	1.00									
Benzene	ND	0.300									
Ethylbenzene	ND	1.00									
Isopropylbenzene	ND	1.00									
m,p-Xylene	ND	2.00									
Methyl tert-butyl ether	ND	1.00									
Naphthalene	ND	1.00									
n-Propylbenzene	ND	1.00									
o-Xylene	ND	1.00									
Toluene	ND	1.00									
Surr: 1,2-Dichloroethane-d4	103										
Surr: 4-Bromofluorobenzene	93.5										
Surr: Dibromofluoromethane	106										
Surr: Toluene-d8	92.8										

Qualifiers: B Analyte detected in the associated Method Blank  
R RPD outside accepted recovery limits  
H Holding times for preparation or analysis exceeded  
S Spike Recovery outside accepted recovery limits  
ND Not Detected at the Reporting Limit

# QC SUMMARY REPORT

WO#: 1204255  
03-May-12

## Specialty Analytical

Client: 4C's Environmental, Inc.  
Project: Carson-Goldendale

TestCode: NWTPHGX\_W

Sample ID: LCS-3977	SampType: LCS	TestCode: NWTPHGX_	Units: µg/L	Prep Date:	RunNo: 3977						
Client ID: LCSW	Batch ID: R3977	TestNo: NWTPH-Gx		Analysis Date:	SeqNo: 53152						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2,660	100	2,500	0	106	74.4	128				

Sample ID: MB-3977	SampType: MBLK	TestCode: NWTPHGX_	Units: µg/L	Prep Date:	RunNo: 3977						
Client ID: PBW	Batch ID: R3977	TestNo: NWTPH-Gx		Analysis Date:	SeqNo: 53153						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	100									
Surr: 4-Bromofluorobenzene	92.1		100.0		92.1	50	150				

Sample ID: 1204240-001ADUP	SampType: DUP	TestCode: NWTPHGX_	Units: µg/L	Prep Date:	RunNo: 3977						
Client ID: ZZZZZZ	Batch ID: R3977	TestNo: NWTPH-Gx		Analysis Date:	SeqNo: 53160						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	1,290	100						1,286	0.244	20	A

Sample ID: CCV	SampType: CCV	TestCode: NWTPHGX_	Units: µg/L	Prep Date:	RunNo: 3977						
Client ID: CCV	Batch ID: R3977	TestNo: NWTPH-Gx		Analysis Date: 5/1/2012	SeqNo: 53369						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	2,560	100	2,500	0	103	80	120				

Qualifiers: B Analyte detected in the associated Method Blank  
R RPD outside accepted recovery limits  
H Holding times for preparation or analysis exceeded  
S Spike Recovery outside accepted recovery limits  
ND Not Detected at the Reporting Limit



## KEY TO FLAGS

Rev. May 12, 2010

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- A4 The product appears to be aged or degraded diesel.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended holding time.
- HT At clients request, samples was analyzed outside of recommended holding time.
- J The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- RP Matrix spike values exceed established QC limits; post digestion spike is in control.
- S Recovery is outside control limits.
- SC Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- \* The result for this parameter was greater than the maximum contaminant level of the TCLP regulatory limit.



