Soil and Groundwater Investigation

Former Coca-Cola Bottling Company of Washington Facility

2101 Woburn Street
Bellingham, Washington 98299

Washington State Department of Ecology Site No. 64254993
VCP Project No. NW2661

Prepared for:

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Shaping the Future

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1 Introduction

On behalf of Coca-Cola Refreshments (Coca-Cola), Cardno has prepared this report describing soil and groundwater investigation activities performed at the former Coca-Cola Bottling Company of Washington facility located at 2101 Woburn Street in Bellingham, Washington (Figure 1, Site Vicinity Map). The investigation was performed subsequent to the site's acceptance into the Voluntary Cleanup Program (VCP) by the Washington State Department of Ecology (Ecology) and was intended to address data gaps identified by Ecology in their advisory opinion letter (issued under the specific authority of Revised Code of Washington [RCW] 70.105D.030[1][i] and Washington Administrative Code [WAC] 173-340-515[5]) dated March 25, 2013 (Ecology, 2013) and follow the scope of work outlined in Cardno's February 20, 2014 *Work Plan for the Assessment of Off-Property Impacts and Groundwater Well Installation and Monitoring Program*, which was approved by Ecology in their May 19, 2014 advisory opinion letter (Ecology, 2014).

The objective of this investigation was to characterize potential off-property impacts and Site groundwater over four consecutive quarters in accordance with the Model Toxics Control Act (MTCA) and its implementation regulations defined in RCW Chapter 70.105D and WAC Chapter 173-340 .

2 Background

2.1 Subject Property and Project Site

The former Coca-Cola Bottling Company of Washington - Bellingham Facility is located at 2101 Woburn Street, Bellingham, Whatcom County, Washington. The property is situated at latitude 480 45' 30" north (48.75815629 N) and longitude –1220 26' 40" west (-122.44591481 W) within Township 38 North, Range 3 East, Section 29. UTM coordinates for the Site are: UTM 10 540818 E and 5400520 N, NAD27. The property is comprised of approximately 2.6-acres and is bounded to the north by Woburn Street, to the south by Kentucky Street and to the west by Valencia Street. Access to the property is from Woburn Street to the east or Valencia Street to the west (Figure 1).

A City of Bellingham utility easement is located along the western portion of the property (Figure 2). The utility easement contains an active 12-inch diameter cast iron water supply main, and prior to the 2011 and 2012 remedial activities on the property, an abandoned 8-inch diameter wood stave pipe. Storm water at the site is collected from sheet flow along the property surface through catch basins and is channeled through subsurface drain lines to the off-site City of Bellingham storm line. The City storm line is partially present as an unlined ditch (from Kentucky Street to approximately 170 linear feet north) and a subsurface pipe (north and south of the unlined portion) along the east side of Valencia Street.

The property is topographically located at elevations ranging between 90 and 95-feet above mean sea level (MSL). The property is generally flat with a gentle slope from north to south with slight variances to the east and west. Whatcom Creek flows east-west approximately 0.1-mile south of the Site. Lake Whatcom is situated at an elevation of approximately 300-feet above MSL approximately 1.5 miles east of the property.

2.2 Fuel UST

Environmental assessment activities were initiated at the Site in 1990 by an independent Coca-Cola bottler with the removal of a 2,000-gallon underground storage tank (UST) by Colacurcio Brothers Construction Company. The UST, which had been installed in 1978, along with a fuel dispenser, was

used to store and supply unleaded gasoline to service vehicles utilized by Coca-Cola. Coca-Cola began storing diesel fuel in the UST in approximately 1988. In 1989, approximately 60 to 100 gallons of diesel fuel was reportedly spilled during fueling activities. During the 1990 removal of the UST, approximately 20 cubic yards of petroleum hydrocarbon impacted soil was over-excavated and approximately 40 gallons of petroleum hydrocarbon impacted groundwater was removed from the excavation.

2.3 Prior Site Characterization Activities

In 1999, IT Corporation (IT) of Renton, Washington performed a limited subsurface investigation. Soil and groundwater samples collected from 12 soil borings were analyzed for total petroleum hydrocarbons as diesel (TPH-D) and gasoline (TPH-G), benzene, toluene, ethyl benzene, and xylenes (BTEX), and polycyclic aromatic hydrocarbons (PAHs). The results of the investigation were summarized in a February 28, 2000 report entitled Subsurface Investigation Report, Coca-Cola Bottling Company of Bellingham, 2101 Woburn Street Bellingham, Washington (IT, 2000). The report concluded the following: 1) concentrations of TPH-D in soil above MTCA Method A cleanup levels were detected at shallow depths in a limited area west of the former UST; 2) petroleum hydrocarbon impact to groundwater is limited to noncontiguous perched water-bearing zones; and 3) the total concentration of carcinogenic PAHs (cPAHS) meet Ecology's criteria of being protective to human health and groundwater. The February 28, 2000 report also included an application to enter the Site into Ecology's Voluntary Cleanup Program (VCP), and a request for the Site to be granted a No Further Action (NFA) determination with Ecology under the VCP.

In a May 5, 2000 opinion advisory letter from Ecology to IT, Ecology requested further remedial action to be performed at the Site before a NFA determination could be granted. Between 2005 and 2007 further subsurface assessment was conducted by John Harrie Consultants (JHC) of Vancouver, Washington which included the advancement of seventeen (17) soil borings, five (5) hand-auger soil borings and the installation of groundwater monitoring wells MW-1 through MW-7. In 2006 JHC oversaw the excavation and removal of approximately 32 tons of petroleum hydrocarbon impacted soil from the vicinity of the former UST (JHC, 2008).

The Site monitoring well network consisted of seven (7) monitoring wells designated MW-1 through MW-7 as shown on Figure 2. Four groundwater monitoring events were conducted by JHC between September 2005 and November 2007. Groundwater samples were collected only after each groundwater monitoring well was purged dry and then allowed to recover for approximately 24 hours.

In November 2009 groundwater monitoring was resumed by Cardno (formerly doing business as ATC Associates and Cardno ATC).

2.4 Site Characterization Activities Performed by Cardno

Groundwater Monitoring Report – November 2009

Cardno resumed groundwater monitoring and sampling activities at the Site on November 17, 2009. Each of the groundwater samples collected from groundwater monitoring wells MW-1 through MW-7 were analyzed for TPH-G by Ecology Method NWTPH-Gx, TPH-D by Ecology Method NWTPH-Dx, and BTEX by United States Environmental Protection Agency (USEPA) Method 8021B. Analytical results did not identify TPH or BTEX at concentrations above the method reporting limit. Unlike previous groundwater sampling events and to comply with the recommendations for groundwater sampling outlined in Ecology's November 8, 2010 *Draft Guidance for the Remediation of Petroleum Contaminated Sites* (Ecology, 2010), groundwater samples were collected after each groundwater monitoring well was purged using low flow until water quality parameters had stabilized.

May and September, 2010 Groundwater Monitoring and Sampling Events and September, 2010 Limited Subsurface Investigation Report, Coca-Cola Bottling Company of Washington 2101 Woburn Street, Bellingham, Washington 98299 – March 30, 2011

The limited subsurface investigation of the Site was performed to further delineate previously identified petroleum hydrocarbons and BTEX in shallow soil and groundwater and to further evaluate hydrogeological conditions at the Site. The investigation, along with historical data, determined that the greatest concentrations of TPH-G to be located between the surface and 3.5 feet below ground surface, with the maximum concentrations identified in the area along the western property boundary. The concentrations of TPH-G were determined to decrease with depth and by 8 feet bgs, the concentrations are either below laboratory detection levels or the MTCA Method A cleanup level for gasoline mixtures with benzene. The lateral extent of impact was determined to be roughly elliptical in shape with approximately 160 linear feet of impacted soil in the north-south direction and approximately 95 linear feet of impacted soil in the east-west direction.

The groundwater monitoring events were conducted as part of an ongoing assessment of the distribution of dissolved petroleum hydrocarbons and BTEX in the groundwater at the Site and as an evaluation of local groundwater flow direction and gradient. The September, 2010 groundwater sampling event was also used to further evaluate hydrogeological conditions at the Site by collecting groundwater samples from groundwater monitoring wells MW-1 through MW-7 initially after purging each well with by low flow methods and then approximately 24-hours after purging each well dry (as performed during the 2005 through 2007 groundwater sampling events).

Laboratory analytical results from groundwater samples collected during the groundwater sampling event performed on May 12, 2010 were consistent with laboratory analytical results from the previous groundwater sampling event conducted using the low flow sampling method, in that no concentrations of gasoline, diesel, heavy oil, and benzene, the contaminants of concern (COCs), were detected. This data is inconsistent with historical groundwater sampling results.

As a consequence of the inconsistencies in data, Cardno reviewed the subsurface conditions at the Site as described in previous investigations. Cardno noted, as explained above in further detail, the presence of petroleum hydrocarbon impact to soil is confined to soil at depths less than 8 feet bgs. Cardno ATC also noted that groundwater monitoring wells MW-1 through MW-7 are screened below the impacted soil and within a unit made up dominantly by impermeable clay.

The presence of petroleum hydrocarbon in groundwater samples collected prior to the November, 2009 event, which had been collected by initially purging each of the wells dry and then allow the wells to recover, a process that takes up 24-hours, is likely attributed to vacuum pressure, created by removal of the entire well casing volume of water.

The presence of petroleum hydrocarbons in groundwater samples collected by the purge and bail methodology on September 9, 2010, when compared to the lack of petroleum hydrocarbons in the groundwater samples collected by the low-flow methodology, indicates that the removal of groundwater from within the deeper aquifer, previously identified as having a slow recharge rate, has caused short-circuiting between the intermittent groundwater present in the upper petroleum impacted coarse-grained sediments and groundwater present in the underlying dominantly fine-grained sediments of lesser hydraulic conductivity.

The analytical results from the May 12 and September 8, 2010 low-flow sampling of the monitoring wells (MW-1 through MW-7), which represent the deeper water bearing zone, and the analytical results from the September 9, 2010 purge and bail methodology, which represent the intermittent shallow water bearing zone, were all below the MTCA Method A cleanup values for gasoline mixtures with benzene and BTEX. Furthermore, the analytical results indicate that the deeper water bearing zone is not impacted by TPH-G and BTEX.

Analytical results from the September 9, 2010 purge and bail sampling methodology indicate the presence of TPH-G and BTEX in groundwater samples collected from MW-2, MW-4, and MW-7. Groundwater samples collected from the remaining wells did not contain detectable concentrations of TPH-G or BTEX. These results confirmed the theory of the short-circuiting between the intermittent groundwater present in the upper petroleum impacted coarse-grained sediments and groundwater present in the underlying dominantly fine-grained sediments of lesser hydraulic conductivity as a result of the purge and bail sampling method.

During the September 9, 2010 soil and groundwater investigation, only the groundwater 'grab' sample collected from soil boring B-4 was found to have a detection above the MTCA Method A cleanup value. The sample was found to contain a concentration of benzene above the MTCA Method A cleanup levels. Groundwater grab samples from the remaining soil borings did not contain detectable concentrations of benzene.

Storm water is expected to seasonally flow southwards along the unlined drainage ditch located along the western Site boundary, along Valencia Street. Soil samples collected during the September 9, 2010 investigation and during previous investigations along the unlined drainage ditch did not indicate that impacted groundwater, which may have a potentiometric surface that would intercept the side walls of the drainage ditch, has resulted in impacts along the drainage ditch.

2.5 Site Remedial Activities

In order to address the petroleum hydrocarbon impacts previously identified in shallow soil and dissolved petroleum hydrocarbons previously identified within the intermittent shallow water bearing zone, Coca-Cola authorized Cardno to remove all soil that has been identified to contain concentrations of gasoline, diesel, heavy oil, and benzene, the COCs, at concentrations above the Ecology MTCA Method A soil cleanup levels for unrestricted land use and consequently, the intermittent shallow water bearing zone.

On October 18, 2011 the remediation contractor, Clearcreek Contractors, Inc. (CCI) began excavation activities in areas previously identified to contain petroleum hydrocarbon impacts to soil. Over-excavation occurred where laboratory analysis of floor or sidewall samples indicated that concentrations of the COCs were above MTCA Method A cleanup levels.

The excavation activities included both on-property and off-property excavation work. These activities consisted of work in a City easement located along the western boundary of the property and in the City right-of-way beneath Valencia Street. A total of approximately 5,497 tons of petroleum contaminated soil (PCS) was removed during the remedial excavation activities, including approximately 2,117 tons from the property excavation and approximately 3,380 tons from a City of Bellingham easement and the Valencia Street right-of-way. The PCS was transported by CCI to the CEMEX facility in Everett, Washington for incineration. Free groundwater was not encountered during the remedial activities and no groundwater sampling was conducted. Five of the seven monitoring wells were properly abandoned as part of the remedial activities. Groundwater monitoring wells, MW-1 and MW-5, remain on the property.

A total of 90 confirmation soil samples were collected from the remedial excavation to document the successful remedial activities. A total of 51 sidewall samples were collected from the excavation to confirm the lateral limits of the COCs within the soil matrix and the remaining soil samples were collected from the base of the excavation. As necessary, the remedial excavation was expanded until the sidewall samples indicated that concentrations were below the MTCA Method A cleanup levels.

In order to access impacted soils within the City of Bellingham utility easement area and further off site to the west, Coca-Cola agreed to replace the portion of the City of Bellingham water main located within the utility easement. CCI also removed an abandoned 8-inch diameter wood stave pipe located in a parallel orientation approximately three (3) feet west of the cast iron pipe.

Based on the laboratory analytical results of confirmation samples collected within the City of Bellingham

easement, the COCs were removed to concentrations below the MTCA Method A cleanup levels in the north, east and south directions. Laboratory analytical results indicate that concentrations of gasoline and diesel are present along a portion of the western excavation sidewall in concentrations above the MTCA Method A cleanup levels. The residual impacted soils are located off-site, adjacent to the 4-foot corrugated steel storm line, located within Valencia Street. Despite the presence of petroleum hydrocarbons in concentration above MTCA Method A cleanup levels, the remedial excavation could not expanded due to the presence of the 4-foot corrugated steel storm line.

With the exception of the localized, limited soil along the east side of the storm line beneath Valencia Street, the Site was been remediated to the extent practicable to MTCA Method A cleanup levels as defined under the MTCA Cleanup Regulation Washington Administrative Code (WAC) Chapter 173-340. The remaining impacted soils are located at approximately 4 feet bgs and ranged in concentrations from 45.7 milligrams per kilogram (mg/kg) to 1,970 mg/kg of gasoline. In addition, one sample collected along the storm line in Grid D1 was found to contain a concentration of 3,170 mg/kg of diesel-range petroleum hydrocarbons. The residual off-property contaminated soil is contained by polyethylene sheeting installed to the north, south and east of the interface with the steel storm line, to the west by the steel storm line and is covered at the surface by the concrete and asphalt surface which comprises Valencia Street. Cardno ATC conducted quarterly groundwater monitoring and sampling activities of the seven onsite wells on November 17, 2009. Each of the groundwater samples collected from the seven monitoring wells were analyzed for TPH-G by Ecology Method NWTPH-Gx, TPH-D by Ecology Method NWTPH-Dx, and BTEX by United States Environmental Protection Agency (USEPA) Method 8021B. Analytical results did not identify TPH or BTEX at concentrations above the method reporting limit. In accordance with Ecology's November 8, 2010 Draft Guidance for the Remediation of Petroleum Contaminated Sites groundwater samples were collected after each groundwater monitoring well was purged using low flow until water quality parameters had stabilized.

2.6 Entry into the Voluntary Cleanup Program

The results of the remedial activities were summarized in the Remedial Action Report dated November 15, 2012, which was submitted to Ecology along with an application to the VCP (ATC, 2012). In response to the November 15, 2012 Remedial Action Report, an opinion was issued by Ecology in an advisory opinion letter dated March 25, 2013 (Ecology, 2013). The opinion determined that further remedial action would be necessary to obtain a NFA determination for the Site, specifically the issuance of a NFA letter would be achieved if Site groundwater monitoring results demonstrate that groundwater contains concentrations of COCs below MTCA Method A cleanup levels for four consecutive quarters. Ecology also recommended the installation of at least one groundwater monitoring well in a location in the down-gradient direction of groundwater flow from areas of previously identified with impacted groundwater.

3 Site Investigation

Ecology's 2013 and 2014 advisory opinion letters requested characterization of potential off-property impacts and the analysis of Site groundwater samples over four consecutive quarters, with a NFA determination to be granted if the off-property impacts and Site groundwater are verified as in compliance with MTCA Method A cleanup levels.

On November 4 and 5, 2014, Cardno oversaw the advancement of three soil borings, collected soil samples for further characterization, and subsequently completed each boring as a groundwater monitoring well (designated MW-8, MW-9 and MW-10) to ascertain groundwater conditions west of the 4-foot corrugated steel storm line located below Valencia Street and down-gradient of the former UST; well locations are depicted on Figure 2.

On November 11, 2014, depth to groundwater was measured and groundwater samples were collected (post low-flow purging) from five groundwater monitoring wells including existing groundwater monitoring wells MW-1 and MW-5, and newly installed groundwater monitoring wells MW-8, MW-9, and MW-10.

3.1 Soil and Groundwater Investigation

On November 4 and 5, 2014, Cardno contracted Cascade Drilling, Inc. (CDI) of Woodinville, Washington to advance three soil borings (MW-8, MW-9 and MW-10, Figure 2). Drilling was conducted using a mobile drill rig equipped with hollow-stem augers (HSA).

Oversight of the drilling and sampling activities was performed by a qualified Cardno field geologist. Soil samples obtained during HSA drilling operations were collected at approximate five-foot vertical intervals with a previously decontaminated, brass-sleeve loaded 18-inch long split-spoon sampler, driven into the undisturbed soil utilizing a 140-pound hammer dropped from a height of 30 inches. The blow counts were recorded for every six inches the sampler was driven into the soil and were used to derive the density or hardness. After retrieval of each sample, the split-spoon was opened to allow access to the brass sleeves/soil for lithologic evaluation, field screening and sample collection and preservation.

Soil recovery was generally good with a maximum recovery of six to 18 inches from the split-spoon sampler. The soils were classified in general accordance with the Unified Soil Classification System (USCS). Field VOC monitoring was performed by placing a portion of the sample in a sealable plastic bag and then mixing the contents to encourage volatilization of any organic compounds present. A photoionization detector (PID) was inserted into the bag to measure the organic vapor level, which was recorded on the boring logs (Appendix A).

After each soil sampling interval, the split-spoon sampler was decontaminated using a biodegradable detergent and potable water wash followed by a clean potable water rinse and a final rinse with distilled water. In addition, disposable latex sampling gloves were worn between samples to avoid cross contamination between sample depths and locations.

During drilling operations up to two soil samples were submitted per soil boring for analyses at Fremont Analytical of Seattle, Washington, an Ecology accredited laboratory. These soil samples were submitted for laboratory analyses including gasoline utilizing Ecology Method NWTPH-Gx; diesel and oil utilizing Ecology Method NWTPH-Dx/Dx-Ext; BTEX utilizing EPA Method 8260, and total lead utilizing EPA Method 6020.

Soil samples collected for VOC and gasoline analysis were field preserved in accordance with EPA Method 5035A using a five-gram soil core sampler inserted into a T-handle plunger. Each core sample was placed into laboratory provided 40 milliliter (ml) glass volatile organic analysis (VOA) vials. The VOA vials consisted of at least two vials containing sodium bisulfate as a preservative and two vials containing methanol as preservative per sample. Each VOA vial was then labeled, bagged, placed in an iced cooler and entered onto a chain of custody pending delivery to the analytical laboratory. Soil samples collected for diesel, oil, and metals were submitted in capped glass jars. Each sample was labeled, bagged, placed in an iced cooler and entered onto a chain of custody pending delivery to the analytical laboratory. The laboratory analytical report for the soil analyses is included in Appendix B and the results are presented on Table 1, Summary of Soil Sample Laboratory Analytical Results.

The groundwater monitoring wells were constructed with 2-inch diameter schedule 40 polyvinyl chloride (PVC) well casing with a 0.01-inch slotted screen interval extending from approximately 5 to 10 feet bgs in groundwater monitoring well MW-8 and from approximately 5 to 20 feet bgs in groundwater monitoring wells MW-9 and MW-10. The annular space around each well screen was filled with 2/12 sand and sealed with bentonite chips. Each well casing was fitted with a locking expansion cap and completed at the surface by setting a traffic-rated vault box flush with the surrounding surface. The well construction details are presented on the edited boring logs (Appendix A).

The newly installed groundwater monitoring wells were developed by CDI following installation on November 5, 2014. Up to 20 gallons was purged from each well. Turbidity in the purged groundwater was observed to be clear and free of significant sediment at the conclusion of development activities at each well.

In March 2015, Bush, Roed & Hitchings, Inc. (BR&H) professionally surveyed all existing groundwater monitoring wells for top of casing elevation and northing (latitude) and easting (longitude) location. A copy of the well survey is presented in Appendix C.

3.2 Site-Wide Groundwater Sampling and Monitoring

On November 11, 2014, Cardno gauged and collected post-purge groundwater samples from the five Site-related groundwater monitoring wells. Each groundwater monitoring well was purged using low-flow sampling techniques. During low-flow groundwater purging, high density polyethylene (HDPE) tubing was lowered into the well to the approximate center of the well screen interval. Groundwater was then purged by means of a peristaltic pump set at a steady flow rate while maintaining a drawdown of less than 0.33 feet. After a minimum of one tubing volume (including the volume of water in the pump and flow cell) was purged, water physical parameters including turbidity, dissolved oxygen, electroconductivity, pH, temperature, and oxidation-reduction potential (ORP) were recorded every three to five minutes until stabilization occurred (i.e., when the following criteria were met):

- pH: ± 0.1 pH units
- Specific Conductance: ± 3%
- ORP: ± 10 millivolts (mV)

After achievement of stabilization, the groundwater samples were collected from the discharge port of the pump into laboratory-prepared containers. The groundwater samples were then placed on ice, entered onto a chain of custody and transported to the analytical laboratory. To minimize the potential for cross contamination, the flow-through cell was cleaned and new HDPE tubing was used at each well. The well purge logs are presented in Appendix D.

The groundwater samples were analyzed for gasoline utilizing Ecology Method NWTPH-Gx; diesel and oil utilizing Ecology Method NWTPH-Dx/Dx-Ext and BTEX utilizing EPA Method 8260. The laboratory analytical report is included in Appendix B and the results are presented on Table 2, Summary of Groundwater Monitoring and Laboratory Analytical Results. Groundwater elevation isocontour lines are depicted on Figure 2 and select laboratory analytical data are depicted on Figure 3.

3.3 Investigation Derived Waste

All drill cuttings, decontaminant water, well development and well purge water generated during this investigation was containerized in 55-gallon drums. On January 30, 2015, six drums of solid waste (soil cuttings) and three drums of liquid waste (decontaminant water, well development and well purge water) were picked up by WasteXpress for transportation to their disposal facility in Portland, Oregon. A copy of the non-hazardous waste manifest is included in Appendix E.

4 Findings

Cardno evaluated the field observations and the results of laboratory analyses of soil and groundwater samples to develop the following findings pertinent to the investigation described above:

- Subsurface soils encountered during the drilling of the soil borings for groundwater monitoring wells MW-9 and MW-10 indicate that the subsurface below Valencia Street dominantly consists of low plasticity clay with discontinuous lenses of sand, the presence of coarse-grained sediments is particularly prevalent below 17.5 feet bgs.
- During the drilling of the soil borings for groundwater monitoring wells MW-9 and MW-10 free groundwater was encountered at depths of 18.5 and 19 feet bgs. Static groundwater in groundwater monitoring wells when allowed to completely recover from purging has been measured between 4 and 5.5 feet bgs. Based on this data it appears the water bearing discontinuous sand lenses located within the fine-grained sediments and within the screened zone of the groundwater monitoring well network, are under confined conditions.
- Previous investigations and groundwater sampling events indicate that groundwater recharge is very slow in Site-related groundwater monitoring wells. A February 2008 report by JHC entitled Underground Storage Tank (UST) Report of Findings reported that recovery measured in groundwater monitoring well MW-2 averaged at 0.01 feet per minute.
- Groundwater monitoring well MW-8 was installed within the area previously excavated for remedial purposes, although the screened interval extends into clay-rich native sediments below the 2011 remedial excavation.
- Soil samples collected from select depth intervals from the soil borings for groundwater monitoring wells MW-8 through MW-10 did not contain detectable concentrations of gasoline, diesel, oil, or BTEX. Laboratory method detection limits are all below MTCA Method A cleanup levels.
- Groundwater samples collected from groundwater monitoring wells MW-1, MW-5, and MW-8 through MW-10 did not contain detectable concentrations of dissolved gasoline, diesel, oil, or BTEX. Laboratory method detection limits are all below MTCA Method A cleanup levels.
- Based on field measurements collected on November 11, 2014, static groundwater exists between 80.81 and 74.75 feet mean sea level (Table 2, Figure 2). Groundwater flow is calculated toward the west at an approximate gradient of 0.04 foot/foot.

5 Conclusions

Based on the findings presented above, Cardno offers the following conclusions:

- Based on the laboratory analytical results from soil and groundwater samples collected from groundwater monitoring wells MW-9 and MW-10, petroleum hydrocarbon impacts from the reported release(s) from the former Coca Cola facility at 2101 Woburn Street, Bellingham, Washington have not impacted soil or groundwater west of the 4-foot diameter storm line below Valencia Street.
- Analysis of groundwater samples collected from groundwater monitoring wells MW-1, MW-5, and MW-8 through MW-10 indicate that groundwater at the Site is no longer impacted with petroleum hydrocarbons.

Per the Ecology opinion letter (2014), three more quarterly sampling events are proposed to confirm trends detailed above, although should dissolved petroleum hydrocarbon concentrations remain below MTCA Method A cleanup levels, Coca Cola will request a No Further Action determination from Ecology through the VCP with their final quarterly groundwater monitoring and sampling report.

6 References

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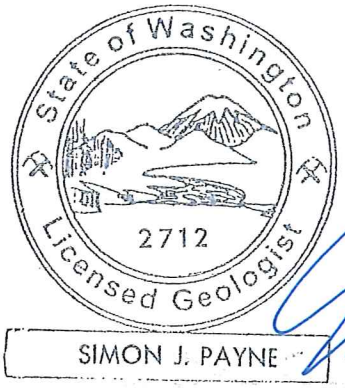
USGS Topographic Map, Bellingham North, WA Quadrangle, 7.5 Minute Series, dated 1949, 1983 photo revised.

7 Certification

The information provided in this Soil and Groundwater Investigation (dated July 10, 2015), for the former Coca-Cola Facility located at2101 Woburn Street, Washington was prepared under the supervision of a Cardno Washington Licensed Geologist.

A professional geologist's certification of conditions comprises a declaration of his or her professional judgement. It does not constitute a warranty or guarantee, expressed or implied, nor does it relieve any other party of its responsibility to abide by contract documents, applicable codes, standards, regulations and ordinances.



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TABLES

Table 1: Summary of Soil Sample Analytical Results
Former Coca Cola Facility
2101 Woburn Street
Bellingham, Washington
Cardno Project No. Z07600021

Boring ID	Sample ID	Sample Depth Interval (feet below ground surface)	Sample Date	Total Petroleum Hydrocarbons[1] in mg/kg			BTEX Compounds[2] in mg/kg				Total Metals[3] in mg/kg
				Gasoline	Diesel (Fuel Oil)	Heavy Oil	Benzene	Toluene	Ethylbenzne	Xylenes	Lead
MW-8	MW-8-9-10	10 - 11	11/4/2014	<4.95	<23.2	<58.0	<0.0198	<0.0198	<0.0297	<0.0198	3.85
MW-9	MW-9-6-6.5	6 - 6.5	11/4/2014	<4.95	<23.2	<58.0	<0.0198	<0.0198	<0.0297	<0.0198	--
	MW-9-11-11.5	11 - 11.5	11/4/2014	<6.08	<21.4	<53.6	<0.0243	<0.0243	<0.0365	<0.0243	--
MW-10	MW-10-6-6.5	6 - 6.5	11/5/2014	<4.95	<23.2	<58.0	<0.0198	<0.0198	<0.0297	<0.0198	--
	MW-10-11-11.5	11 - 11.5	11/5/2014	<5.34	<23.9	<59.7	<0.0214	<0.0214	<0.0320	<0.0214	--
MTCA - Method A Soil Cleanup Leves for Unrestricted Land Uses				**100 (30)[4]**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**250**

Notes:
mg/kg = millgram per kilogram
BTEX - Benzene, toluene, ethylbenzene, and xylenes
MTCA - Washington State Department of Ecology Model Toxics Control Act
-- = Analysis not perfomed on sample
1 = Analytical results by gas chromatography by Washington State Department of Ecology Methods NWTPH-G and NWTPH-Dx/Dx Ext.
2 = Analytical results by gas chromatography and mass spectrometry by United States Environmental Protection Agency Method 8260
3 = Analytical results by inductively coupled plasma and mass spectrometry by United States Environmental Protection Agency Method 6020
4 = MTCA Method A soil cleanup level for gasoline range organics for unrestricted land uses is 100 mg/kg for soil with benzene, toulene, ethylbenezene, and/or xylenes present at concentrations greater than 1% and 30 mg/kg for all other mixtures
All analytical results reported in miligrams per kilogram (mg/kg) or parts per million (ppm)
Bold denotes concentration at or above cleanup value

Table 2: Summary of Groundwater Monitoring and Analytical Results
Former Coca Cola Facility
2101 Woburn St
Bellingham, Washington
Cardno Project No. Z076000021

Monitoring Well ID	TOC Reference Elevation (Bold indicates elevation in feet above MSL)	Sample Date	Depth to Water in feet below TOC	Groundwater Elevation (bold indicates groundwater elevations in feet above MSL)	Total Petroleum Hydrocarbons[1] in µg/L			Volatile Organic Compounds (VOCs)[2] in µg/L			
					Gasoline	Diesel (Fuel Oil)	Heavy Oil	Benzene	Toluene	Ethylbenzne	Total Xylenes
MW-1	99.54	9/22/2005	17.05	82.49	<250	<250	--	<0.50	<0.50	<0.50	<0.50
		3/7/2006	3.64	95.90	<250	**790**[3]	--	<0.50	<0.50	<0.50	<0.50
		8/8/2006	4.70	94.84	<250	<250	--	<0.50	<0.50	<0.50	<0.50
		11/6/2007	4.10	95.44	<250	<260	--	<0.50	<0.50	<0.50	<0.50
		11/17/2009	4.02	95.52	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		5/12/2010	3.88	95.66	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		9/8/2010	4.68	94.86	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		9/9/2010	NM	NM	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
	84.06	11/11/2014	3.25	**80.81**	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00
MW-2	97.11	9/21/2005	16.20	80.91	<250	<260	--	**6.2**	0.81	8.7	1.85
		3/7/2006	2.73	94.38	**1,100**[4]	<280	--	**24**	4.0	74	15.9
		8/8/2006	4.38	92.73	**1,300**[4]	<250	--	**40**	4.9	97	14.6
		11/6/2007	4.43	92.68	**1,400**[4]	2705	--	**32**	5.4	73	11.6
		11/17/2009	2.49	94.62	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		5/12/2010	4.70	92.41	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		9/8/2010	3.64	93.47	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		9/9/2010	14.61	82.50	730	<100	<200	<1.0	<1.0	6.30	<2.0
MW-3	96.72	9/21/2005	26.25	70.47	<250	340[3]	--	2.6	<0.50	4.5	9.4
		3/7/2006	2.29	94.43	<250	<250	--	<0.50	<0.50	<0.50	<0.50
		8/8/2006	2.76	93.96	<250	<250	--	<0.50	<0.50	<0.50	<0.50
		11/6/2007	4.21	92.51	<250	<280	--	<0.50	<0.50	<0.50	<0.50
		11/17/2009	3.48	93.24	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		5/12/2010	4.02	92.70	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		9/8/2010	2.60	94.12	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		9/9/2010	13.05	83.67	<50	<100	<200	<1.0	<1.0	<1.0	<2.0

Table 2: Summary of Groundwater Monitoring and Analytical Results
Former Coca Cola Facility
2101 Woburn St
Bellingham, Washington
Cardno Project No. Z076000021

Monitoring Well ID	TOC Reference Elevation (Bold indicates elevation in feet above MSL)	Sample Date	Depth to Water in feet below TOC	Groundwater Elevation (bold indicates groundwater elevations in feet above MSL)	Total Petroleum Hydrocarbons[1] in µg/L			Volatile Organic Compounds (VOCs)[2] in µg/L			
					Gasoline	Diesel (Fuel Oil)	Heavy Oil	Benzene	Toluene	Ethylbenzne	Total Xylenes
MW-4	95.24	3/7/2006	3.25	91.99	<250	340[3]	--	<0.50	<0.50	<0.50	<0.50
		8/8/2006	4.00	91.24	<250	<250	--	0.620	<0.50	1.80	<0.50
		11/6/2007	1.75	93.49	400[4]	<250	--	75.000	1.200	41	2.700
		11/17/2009	1.77	93.47	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		5/12/2010	2.92	92.32	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		9/8/2010	1.66	93.58	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		9/9/2010	14.30	80.94	120	<100	<200	1.000	<1.0	5.40	<2.0
MW-5	97.02	11/6/2007	2.33	94.69	<250	<260	--	<0.50	<0.50	<0.50	<0.50
		11/17/2009	1.74	95.28	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		5/12/2010	2.05	94.97	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		9/8/2010	3.47	93.55	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		9/9/2010	2.47	94.55	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
	81.34	11/11/2014	3.00	**78.34**	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00
MW-6	95.71	11/6/2007	1.43	94.28	310[4]	<260	--	1.6	0.7	2.0	1.1
		11/17/2009	1.43	94.28	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		5/12/2010	1.60	94.11	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		9/8/2010	1.77	93.94	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		9/9/2010	4.33	91.38	170	<100	<200	<1.0	<1.0	<1.0	<2.0
MW-7	95.57	11/06/07	2.34	93.23	460[4]	<260	--	4.3	0.96	10	2.1
		11/17/09	1.57	94.000	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		05/12/10	1.85	93.720	<50	<100	<200	<1.0	<1.0	<1.0	<1.0
		09/08/10	1.64	93.930	<50	<100	<200	<1.0	<1.0	<1.0	<2.0
		09/09/10	5.50	90.07	100	<100	<200	<1.0	<1.0	<1.0	<2.0

Table 2: Summary of Groundwater Monitoring and Analytical Results
Former Coca Cola Facility
2101 Woburn St
Bellingham, Washington
Cardno Project No. Z076000021

Monitoring Well ID	TOC Reference Elevation (Bold indicates elevation in feet above MSL)	Sample Date	Depth to Water in feet below TOC	Groundwater Elevation (bold indicates groundwater elevations in feet above MSL)	Total Petroleum Hydrocarbons[1] in µg/L			Volatile Organic Compounds (VOCs)[2] in µg/L			
					Gasoline	Diesel (Fuel Oil)	Heavy Oil	Benzene	Toluene	Ethylbenzne	Total Xylenes
MW-8	**80.27**	11/11/2014	3.19	**77.08**	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00
MW-9	**79.72**	11/11/2014	4.73	**74.99**	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00
MW-10	**79.97**	11/11/2014	5.22	**74.75**	<50.0	<50.0	<100	<1.00	<1.00	<1.00	<1.00
MTCA Method A Cleanup Levels for Groundwater					**800/1,000[4]**	**500**	**500**	**5**	**1,000**	**700**	**1,000**

Notes:
TOC = Top of Casing
MSL = Mean sea level
µg/L = micrograms per liter
BTEX = Benzene, toluene, ethylbenzene, and xylenes
-- = Not analyzed
Bold indicates concentration is above MTCA Method A cleanup level
MTCA = Washington State Department of Ecology Model Toxics Control Act
NE = MTCA Method A cleanup level for groundwater not established
1 = Analytical results by gas chromatography by Washington State Department of Ecology Methods NWTPH-Gx and NWTPH-Dx/Dx Extended
2 = Analytical results by gas chromatography and mass spectrometry by United States Environmental Protection Agency Method 8260
3 = Analytical results by cold vapor atomic absorption and inductively coupled plasma-atomic emission spectrometry by United States Environmental Protection Agency Methods 7470 and 6020
4 = MTCA Method A clean up level of 800 µg/L if benzene present in groundwater and 1,000 µg/L if no detectable benzene is present in groundwater
All analytical results reported in micrograms per liter (mg/L) or parts per billion (ppb)

FIGURES

SOURCE: USGS TOPO MAP, TERRASERVER.COM

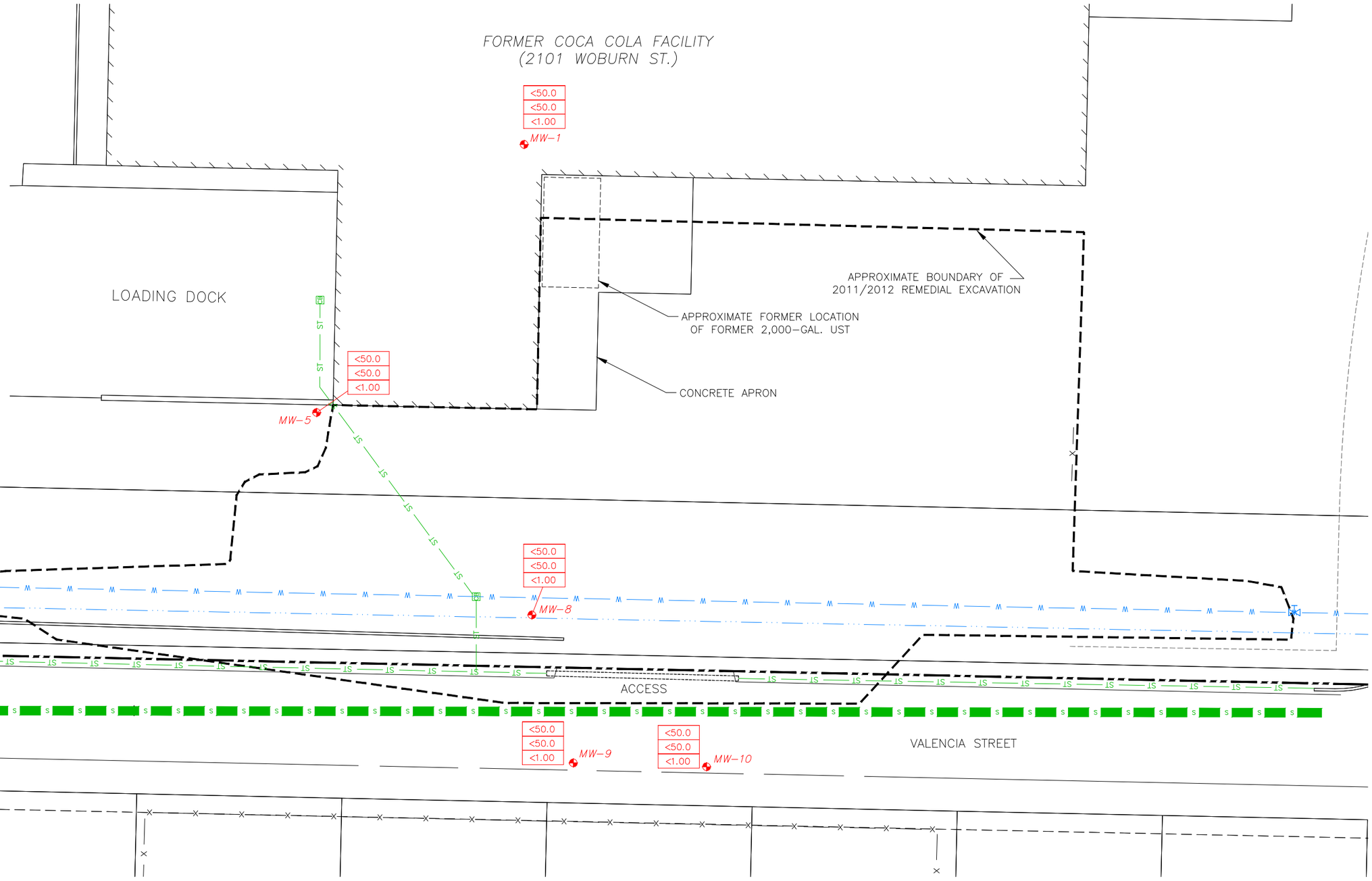
SITE VICINITY MAP

COCA-COLA BOTTLING COMPANY OF WASHINGTON
BELLINGHAM FACILITY - 2101 WOBURN STREET
BELLINGHAM, WA

PROJECT NUMBER: 76.17568.0001		DATE: 12/16/09	FIGURE 1
APPROVED BY: SP		DRAWN BY: BK	

VATC ASSOCIATES INC.
6347 Seaview Avenue NW
Seattle, Washington 98107
Ph: (206) 781-1449 *** Fax: (206) 781-1543

S:\Projects\76\17568 Coca Cola\000111 VICINITY.dwg



NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

DISSOLVED PETROLEUM HYDROCARBON CONCENTRATION MAP
(11/11/14)
FORMER COCA-COLA BOTTLING COMPANY
2101 WOBURN STREET
BELLINGHAM, WA

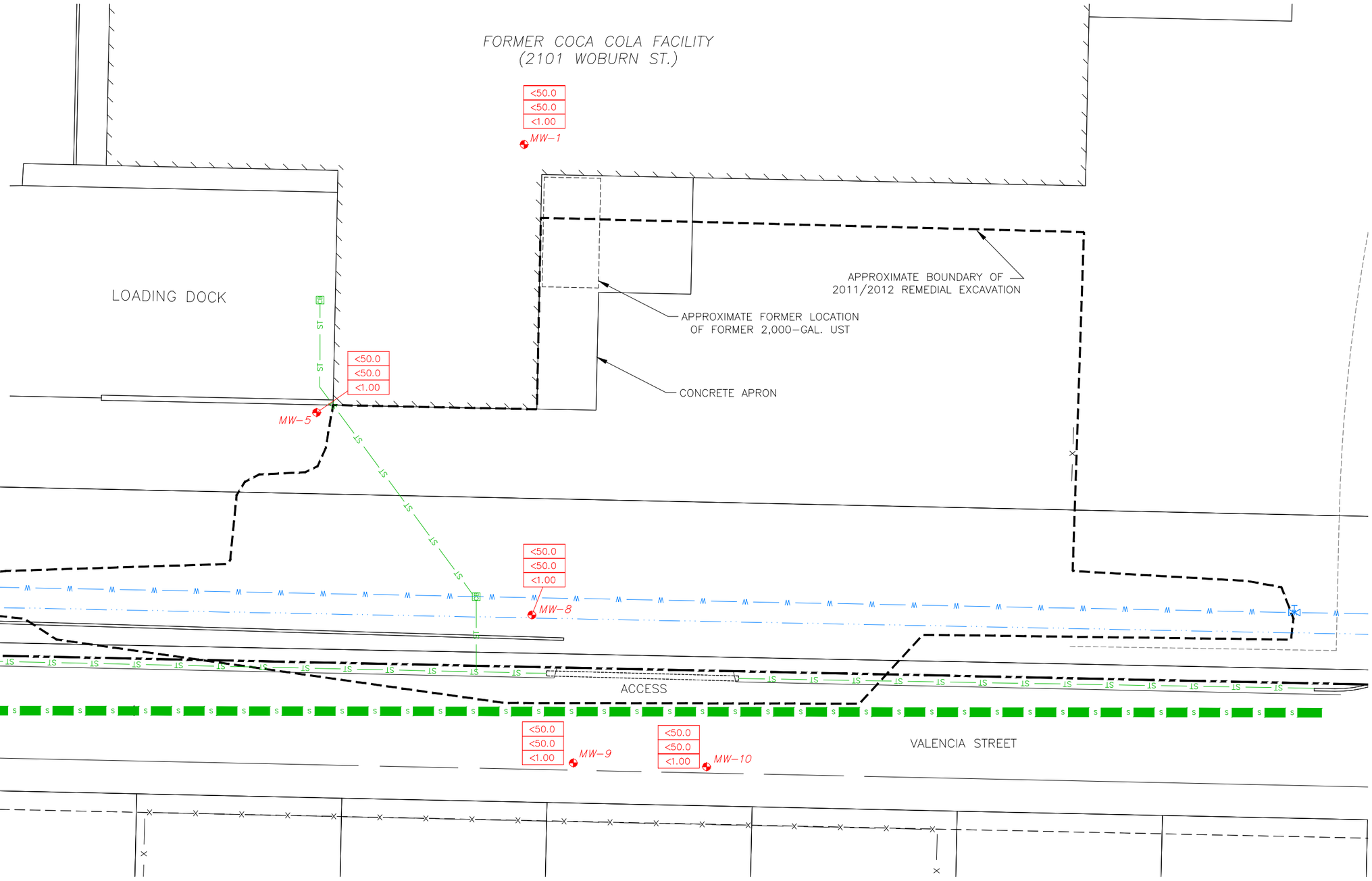
FIGURE 3

DATE: 7/27/15
DRAWN BY: BK

PROJECT NUMBER: Z076000021
APPROVED BY: SP

Cardno 6347 Seaview Avenue NW
Seattle, Washington 98107
Ph: (206) 781-1449 *** Fax: (206) 781-1543

S:\Projects\76\17568 Coca Cola\0003\DPHC_111114.dwg



NOTE: SCALE AND LOCATIONS ARE APPROXIMATE

DISSOLVED PETROLEUM HYDROCARBON CONCENTRATION MAP
(11/11/14)
FORMER COCA-COLA BOTTLING COMPANY
2101 WOBURN STREET
BELLINGHAM, WA

FIGURE 3

DATE: 7/27/15
DRAWN BY: BK

PROJECT NUMBER: Z076000021
APPROVED BY: SP

Cardno 6347 Seaview Avenue NW
Seattle, Washington 98107
Ph: (206) 781-1449 *** Fax: (206) 781-1543

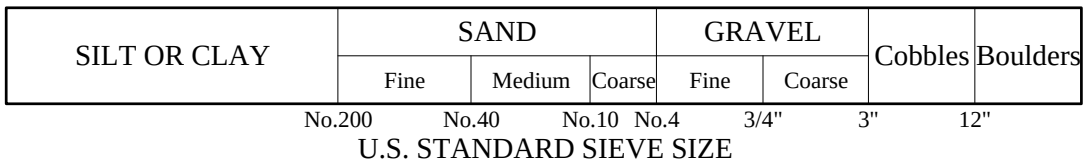
S:\Projects\76\17568 Coca Cola\0003\DPHC_111114.dwg

APPENDIX A

KEY TO SYMBOLS AND DESCRIPTIONS AND BORING LOGS

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel - sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravels, gravel - sand - silt mixtures.
			GC	Clayey gravels, gravel - sand - clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 Sieve Size)	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand - silt mixtures
			SC	Clayey sands, sand - clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts and with slight plasticity.
			CL	Inorganic lays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.



Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No. 3-357, Vol. 1, March, 1953 (Revised April, 1960)

Undisturbed Sample		Auger Cuttings	
Split Spoon Sample		Bulk Sample	
Rock Core		Modified California Ring	
Dilatometer		Pressure Meter	
Packer		No Recovery	
Water Table at time of drilling		Water Table after 24 hours	

Correlation of Penetration Resistance with Relative Density and Consistency

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 1	Very Soft
5 - 10	Loose	2 - 4	Soft
11 - 30	Medium Dense	5 - 8	Medium Stiff
31 - 50	Dense	9 - 15	Stiff
Over 50	Very Dense	16 - 30	Very Stiff
		Over 31	Hard

KEY TO SYMBOLS AND DESCRIPTIONS

Cardno
Shaping the Future
9185 S. Farmer Avenue, Ste. 111
Tempe, Arizona 85284
(480) 894-2056
(480) 894-2497 fax

LOG OF MW-10

SHEET 1 OF 1

Project COCA COLA | Location 2101 WOBURN STREET, BIRMINGHAM, WA

Client COCA COLA | Drill Method HSA | Elevation (ft amsl) --

Number 76.17568.0003 | Drilling Started 11/4/14 | Ended 11/4/14 | Total Depth (ft) 20

Logged By S. PAYNE | Drill Contractor CDI | Depth To Water (ft)

DEPTH (feet)	SAMPLE NO.	BLOWS/6"	USCS	LITHOLOGY	DESCRIPTION	COMPLETION DETAILS	DEPTH FEET
					6" OF ASPHALT		
					CLAY, WITH SAND, MEDIUM BROWN WITH GRAY MOTTLING, 20% FINE SAND, 5% COARSE SAND, LOW PLASTICITY, HARD, DAMP, NPO (CL)	BENTONITE CHIPS	
5	SS 1	9 13 20	CL				5
10	SS 2	9 11 20			CLAY, MEDIUM BROWN, 15% FINE SAND, 5% COARSE SAND, 0-10% COARSE GRAVEL, VERY STIFF, DAMP, NPO (CL)	SCH 40. PVC 0.010 SLOT SCREEN	10
15	SS 3	50/5	CL				15
					CLAYEY SAND, GRAY FINE SAND, 25% COARSE SAND, 45% CLAY, LOW PLASTICITY, WET, NPO (SC)		
20	SS 4		SC		Bottom of hole at 20 feet		20

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Remarks:

See key sheet for symbols and abbreviations used above.

LOG OF MW-8

SHEET 1 OF 1

Project COCA COLA | Location 2101 WOBURN STREET, BIRMINGHAM, WA

Client COCA COLA | Drill Method HSA | Elevation (ft amsl) --

Number 76.17568.0003 | Drilling Started 11/4/14 | Ended 11/4/14 | Total Depth (ft) 10

Logged By S. PAYNE | Drill Contractor CDI | Depth To Water (ft)

DEPTH (feet)	SAMPLE NO.	BLOWS/6"	USCS	LITHOLOGY	DESCRIPTION	COMPLETION DETAILS	DEPTH FEET
					6" OF ASPHALT	BENTONITE CHIPS	
			GM		GRAVEL, DARK BROWN, COARSE, 35% FINE GRAVEL, 20% COARSE SAND, 5% MEDIUM TO FINE SAND, TRACE SILT, WET, NPO (GM)		
5						SCH 40. PVC 0.010 SLOT SCREEN	5
			SC		CLAYEY SAND, DARK BROWN MEDIUM SAND, 15% COARSE SAND, 5% FINE SAND, 40% CLAY, LOW PLASTICITY, WET, NPO (SC)		
	SS 1	4 5 4	CL		CLAY, DARK OLIVE BROWN, 20% FINE SAND, 5% MEDIUM SAND, LOW PLASTICITY, FIRM, DAMP, NPO (CL)		
10					Bottom of hole at 10 feet		10
15							15
20							20

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Remarks:

See key sheet for symbols and abbreviations used above.

LOG OF MW-9

SHEET 1 OF 1

Project COCA COLA | Location 2101 WOBURN STREET, BIRMINGHAM, WA

Client COCA COLA | Drill Method HSA | Elevation (ft amsl) --

Number 76.17568.0003 | Drilling Started 11/4/14 | Ended 11/4/14 | Total Depth (ft) 20

Logged By S. PAYNE | Drill Contractor CDI | Depth To Water (ft) ▽ ATD 18.5

DEPTH (feet)	SAMPLE NO.	BLOWS/6"	USCS	LITHOLOGY	DESCRIPTION	COMPLETION DETAILS	DEPTH FEET
					6" OF ASPHALT		
			SC		CLAYEY SAND, MEDIUM BROWN FINE SAND, 35% CLAY, 0-20% COARSE GRAVEL, LOW PLASTICITY, DAMP, NPO (SC)	BENTONITE CHIPS	
5	SS 1	9 30 20	CL		CLAY, LIGHT BROWN, 20% FINE SAND, 0-10% COARSE GRAVEL, LOW PLASTICITY, HARD, DAMP, NPO, GRADING TO OLIVE-GREEN MOTTLING BELOW 6' (CL)		5
	SS 2	9 11 13					
10	SS 3	9 11 12	CL		CLAY, GRAY, 60% CLAY, 25% FINE SAND, 15% COARSE GRAVEL, LOW PLASTICITY, DAMP TO WET, NPO BELOW 10' (CL)	SCH 40. PVC 0.010 SLOT SCREEN	10
	SS 4	10 11 12					
15	SS 5	9 9 13	CL		CLAY, 60% CLAY, 10% COARSE GRAVEL, 10% COARSE SAND, 20% FINE SAND, LOW PLASTICITY, WET, NPO BELOW 15' (CL)		15
	SS 6	5 5 6	SC		CLAYEY SAND, DARK GRAY, FINE SAND, 10% COARSE GRAVEL, 10% MEDIUM SAND, 45% CLAY, LOW PLASTICITY, WET TO SATURATED, NPO (CL)		▽
20					Bottom of hole at 20 feet		20

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Shaping the Future

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Fax: 480.894.2497

Remarks:

See key sheet for symbols and abbreviations used above.

APPENDIX B

LABORATORY ANALYTICAL REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Cardno ATC
Simon Payne
6347 Seaview Ave NW
Seattle, WA 98107

RE: Coca Cola Bellingham 2014 Well Install
Lab ID: 1411042

November 13, 2014

Attention Simon Payne:

Fremont Analytical, Inc. received 7 sample(s) on 11/6/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Sample Moisture (Percent Moisture)
Total Metals by EPA Method 6020
Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Date: *11/13/2014*

CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install
Lab Order: 1411042

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1411042-001	MW-8-9-10	11/04/2014 12:20 PM	11/06/2014 11:32 AM
1411042-002	MW-9-6-6.5	11/04/2014 2:30 PM	11/06/2014 11:32 AM
1411042-003	MW-9-11-11.5	11/04/2014 2:40 PM	11/06/2014 11:32 AM
1411042-004	MW-9-19.5-20	11/04/2014 3:15 PM	11/06/2014 11:32 AM
1411042-005	MW-10-6-6.5	11/05/2014 9:10 AM	11/06/2014 11:32 AM
1411042-006	MW-10-11-11.5	11/05/2014 9:20 AM	11/06/2014 11:32 AM
1411042-007	MW-10-19.5-20	11/05/2014 9:30 AM	11/06/2014 11:32 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1411042**
Date: **11/13/2014**

CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Analytical Report

WO#: **1411042**
Date Reported: **11/13/2014**

Client: Cardno ATC
Collection Date: 11/4/2014 2:30:00 PM
Project: Coca Cola Bellingham 2014 Well Install
Lab ID: 1411042-002
Matrix: Soil
Client Sample ID: **MW-9-6-6.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9231		Analyst: AK
Diesel (Fuel Oil)	ND	23.2		mg/Kg-dry	1	11/6/2014 7:19:00 PM
Heavy Oil	ND	58.0		mg/Kg-dry	1	11/6/2014 7:19:00 PM
Surr: 2-Fluorobiphenyl	93.2	50-150		%REC	1	11/6/2014 7:19:00 PM
Surr: o-Terphenyl	83.1	50-150		%REC	1	11/6/2014 7:19:00 PM
Gasoline by NWTPH-Gx				Batch ID: R17942		Analyst: EM
Gasoline	ND	4.95		mg/Kg-dry	1	11/7/2014 5:56:00 PM
Surr: 4-Bromofluorobenzene	103	65-135		%REC	1	11/7/2014 5:56:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	11/7/2014 5:56:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 9232		Analyst: BC
Benzene	ND	0.0198		mg/Kg-dry	1	11/7/2014 5:56:00 PM
Toluene	ND	0.0198		mg/Kg-dry	1	11/7/2014 5:56:00 PM
Ethylbenzene	ND	0.0297		mg/Kg-dry	1	11/7/2014 5:56:00 PM
m,p-Xylene	ND	0.0198		mg/Kg-dry	1	11/7/2014 5:56:00 PM
o-Xylene	ND	0.0198		mg/Kg-dry	1	11/7/2014 5:56:00 PM
Surr: Dibromofluoromethane	90.8	63.7-129		%REC	1	11/7/2014 5:56:00 PM
Surr: Toluene-d8	94.7	64.3-131		%REC	1	11/7/2014 5:56:00 PM
Surr: 1-Bromo-4-fluorobenzene	99.6	63.1-141		%REC	1	11/7/2014 5:56:00 PM
Total Metals by EPA Method 6020				Batch ID: 9233		Analyst: TN
Lead	3.85	0.194		mg/Kg-dry	1	11/7/2014 7:08:15 PM
Sample Moisture (Percent Moisture)				Batch ID: R17887		Analyst: TK
Percent Moisture	16.1			wt%	1	11/6/2014 2:06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411042**

Date Reported: **11/13/2014**

Client: Cardno ATC **Collection Date:** 11/4/2014 2:40:00 PM

Project: Coca Cola Bellingham 2014 Well Install

Lab ID: 1411042-003 **Matrix:** Soil

Client Sample ID: **MW-9-11-11.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9231		Analyst: AK
Diesel (Fuel Oil)	ND	21.4		mg/Kg-dry	1	11/6/2014 8:21:00 PM
Heavy Oil	ND	53.6		mg/Kg-dry	1	11/6/2014 8:21:00 PM
Surr: 2-Fluorobiphenyl	95.0	50-150		%REC	1	11/6/2014 8:21:00 PM
Surr: o-Terphenyl	84.1	50-150		%REC	1	11/6/2014 8:21:00 PM
Gasoline by NWTPH-Gx				Batch ID: R17942		Analyst: EM
Gasoline	ND	6.08		mg/Kg-dry	1	11/7/2014 6:25:00 PM
Surr: 4-Bromofluorobenzene	103	65-135		%REC	1	11/7/2014 6:25:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	11/7/2014 6:25:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 9232		Analyst: BC
Benzene	ND	0.0243		mg/Kg-dry	1	11/7/2014 6:25:00 PM
Toluene	ND	0.0243		mg/Kg-dry	1	11/7/2014 6:25:00 PM
Ethylbenzene	ND	0.0365		mg/Kg-dry	1	11/7/2014 6:25:00 PM
m,p-Xylene	ND	0.0243		mg/Kg-dry	1	11/7/2014 6:25:00 PM
o-Xylene	ND	0.0243		mg/Kg-dry	1	11/7/2014 6:25:00 PM
Surr: Dibromofluoromethane	91.7	63.7-129		%REC	1	11/7/2014 6:25:00 PM
Surr: Toluene-d8	95.5	64.3-131		%REC	1	11/7/2014 6:25:00 PM
Surr: 1-Bromo-4-fluorobenzene	101	63.1-141		%REC	1	11/7/2014 6:25:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R17887		Analyst: TK
Percent Moisture	15.2			wt%	1	11/6/2014 2:06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411042**

Date Reported: **11/13/2014**

Client: Cardno ATC **Collection Date:** 11/5/2014 9:10:00 AM

Project: Coca Cola Bellingham 2014 Well Install

Lab ID: 1411042-005 **Matrix:** Soil

Client Sample ID: **MW-10-6-6.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9231		Analyst: AK
Diesel (Fuel Oil)	ND	24.6		mg/Kg-dry	1	11/6/2014 8:52:00 PM
Heavy Oil	ND	61.6		mg/Kg-dry	1	11/6/2014 8:52:00 PM
Surr: 2-Fluorobiphenyl	94.8	50-150		%REC	1	11/6/2014 8:52:00 PM
Surr: o-Terphenyl	84.2	50-150		%REC	1	11/6/2014 8:52:00 PM
Gasoline by NWTPH-Gx				Batch ID: R17942		Analyst: EM
Gasoline	ND	5.53		mg/Kg-dry	1	11/7/2014 6:54:00 PM
Surr: 4-Bromofluorobenzene	102	65-135		%REC	1	11/7/2014 6:54:00 PM
Surr: Toluene-d8	102	65-135		%REC	1	11/7/2014 6:54:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 9232		Analyst: BC
Benzene	ND	0.0221		mg/Kg-dry	1	11/7/2014 6:54:00 PM
Toluene	ND	0.0221		mg/Kg-dry	1	11/7/2014 6:54:00 PM
Ethylbenzene	ND	0.0332		mg/Kg-dry	1	11/7/2014 6:54:00 PM
m,p-Xylene	ND	0.0221		mg/Kg-dry	1	11/7/2014 6:54:00 PM
o-Xylene	ND	0.0221		mg/Kg-dry	1	11/7/2014 6:54:00 PM
Surr: Dibromofluoromethane	92.0	63.7-129		%REC	1	11/7/2014 6:54:00 PM
Surr: Toluene-d8	96.0	64.3-131		%REC	1	11/7/2014 6:54:00 PM
Surr: 1-Bromo-4-fluorobenzene	99.4	63.1-141		%REC	1	11/7/2014 6:54:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R17887		Analyst: TK
Percent Moisture	24.4			wt%	1	11/6/2014 2:06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411042**

Date Reported: **11/13/2014**

Client: Cardno ATC **Collection Date:** 11/5/2014 9:20:00 AM

Project: Coca Cola Bellingham 2014 Well Install

Lab ID: 1411042-006 **Matrix:** Soil

Client Sample ID: **MW-10-11-11.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9231		Analyst: AK
Diesel (Fuel Oil)	ND	23.9		mg/Kg-dry	1	11/6/2014 9:24:00 PM
Heavy Oil	ND	59.7		mg/Kg-dry	1	11/6/2014 9:24:00 PM
Surr: 2-Fluorobiphenyl	91.9	50-150		%REC	1	11/6/2014 9:24:00 PM
Surr: o-Terphenyl	82.9	50-150		%REC	1	11/6/2014 9:24:00 PM
Gasoline by NWTPH-Gx				Batch ID: R17942		Analyst: EM
Gasoline	ND	5.34		mg/Kg-dry	1	11/7/2014 7:23:00 PM
Surr: 4-Bromofluorobenzene	102	65-135		%REC	1	11/7/2014 7:23:00 PM
Surr: Toluene-d8	101	65-135		%REC	1	11/7/2014 7:23:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: 9232		Analyst: BC
Benzene	ND	0.0214		mg/Kg-dry	1	11/7/2014 7:23:00 PM
Toluene	ND	0.0214		mg/Kg-dry	1	11/7/2014 7:23:00 PM
Ethylbenzene	ND	0.0320		mg/Kg-dry	1	11/7/2014 7:23:00 PM
m,p-Xylene	ND	0.0214		mg/Kg-dry	1	11/7/2014 7:23:00 PM
o-Xylene	ND	0.0214		mg/Kg-dry	1	11/7/2014 7:23:00 PM
Surr: Dibromofluoromethane	89.8	63.7-129		%REC	1	11/7/2014 7:23:00 PM
Surr: Toluene-d8	95.6	64.3-131		%REC	1	11/7/2014 7:23:00 PM
Surr: 1-Bromo-4-fluorobenzene	99.2	63.1-141		%REC	1	11/7/2014 7:23:00 PM
Sample Moisture (Percent Moisture)				Batch ID: R17887		Analyst: TK
Percent Moisture	17.9			wt%	1	11/6/2014 2:06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Date: *11/13/2014*

Work Order: 1411042
CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install

QC SUMMARY REPORT

Total Metals by EPA Method 6020

Sample ID: **MB-9233**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **11/6/2014**	RunNo: **17927**
Client ID: **MBLKS**	Batch ID: **9233**		Analysis Date: **11/7/2014**	SeqNo: **357362**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	ND	0.200									

Sample ID: **LCS-9233**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **11/6/2014**	RunNo: **17927**
Client ID: **LCSS**	Batch ID: **9233**		Analysis Date: **11/7/2014**	SeqNo: **357363**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	184	0.200	189.0	0	97.4	74.6	125.4				

Sample ID: **1411035-001ADUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **11/6/2014**	RunNo: **17927**
Client ID: **BATCH**	Batch ID: **9233**		Analysis Date: **11/7/2014**	SeqNo: **357365**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	2.95	0.182						2.586	13.0	20	

Sample ID: **1411035-001AMS**	SampType: **MS**	Units: **mg/Kg-dry**	Prep Date: **11/6/2014**	RunNo: **17927**
Client ID: **BATCH**	Batch ID: **9233**		Analysis Date: **11/7/2014**	SeqNo: **357369**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	25.3	0.182	22.80	2.586	99.5	75	125				

Sample ID: **1411035-001AMSD**	SampType: **MSD**	Units: **mg/Kg-dry**	Prep Date: **11/6/2014**	RunNo: **17927**
Client ID: **BATCH**	Batch ID: **9233**		Analysis Date: **11/7/2014**	SeqNo: **357370**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lead	24.4	0.182	22.80	2.586	95.8	75	125	25.27	3.40	30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411042
CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID: **LCS-9231** SampType: **LCS** Units: **mg/Kg** Prep Date: **11/6/2014** RunNo: **17905**
Client ID: **LCSS** Batch ID: **9231** Analysis Date: **11/6/2014** SeqNo: **356940**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	385	20.0	500.0	0	76.9	65	135				
Surr: 2-Fluorobiphenyl	19.2		20.00		95.8	50	150				
Surr: o-Terphenyl	16.8		20.00		83.8	50	150				

Sample ID: **MB-9231** SampType: **MBLK** Units: **mg/Kg** Prep Date: **11/6/2014** RunNo: **17905**
Client ID: **MBLKS** Batch ID: **9231** Analysis Date: **11/6/2014** SeqNo: **356941**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	20.0									
Heavy Oil	ND	50.0									
Surr: 2-Fluorobiphenyl	17.8		20.00		88.9	50	150				
Surr: o-Terphenyl	16.3		20.00		81.5	50	150				

Sample ID: **1411042-002ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **11/6/2014** RunNo: **17905**
Client ID: **MW-9-6-6.5** Batch ID: **9231** Analysis Date: **11/6/2014** SeqNo: **357090**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	23.2						0		30	
Heavy Oil	ND	57.9						0		30	
Surr: 2-Fluorobiphenyl	21.8		23.17		94.1	50	150		0		
Surr: o-Terphenyl	19.4		23.17		83.5	50	150		0		

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411042
CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **1411035-001BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **11/6/2014**	RunNo: **17942**
Client ID: **BATCH**	Batch ID: **R17942**		Analysis Date: **11/7/2014**	SeqNo: **357650**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	3.53						0		30	
Surr: Toluene-d8	1.79		1.766		101	65	135		0		
Surr: 4-Bromofluorobenzene	1.81		1.766		102	65	135		0		

Sample ID: **LCS-R17942**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **11/7/2014**	RunNo: **17942**
Client ID: **LCSS**	Batch ID: **R17942**		Analysis Date: **11/7/2014**	SeqNo: **357673**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	22.9	5.00	25.00	0	91.7	65	135				
Surr: Toluene-d8	2.52		2.500		101	65	135				
Surr: 4-Bromofluorobenzene	2.60		2.500		104	65	135				

Sample ID: **MB-R17942**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **11/7/2014**	RunNo: **17942**
Client ID: **MBLKS**	Batch ID: **R17942**		Analysis Date: **11/7/2014**	SeqNo: **357674**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	5.00									
Surr: Toluene-d8	2.51		2.500		100	65	135				
Surr: 4-Bromofluorobenzene	2.55		2.500		102	65	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411042
CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **1411035-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **11/6/2014** RunNo: **17935**
Client ID: **BATCH** Batch ID: **9232** Analysis Date: **11/7/2014** SeqNo: **357524**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.0189	0.0141						0.01881	0.338	30	
Toluene	ND	0.0141						0		30	
Ethylbenzene	ND	0.0212						0		30	
m,p-Xylene	0.0308	0.0141						0.03107	0.788	30	
o-Xylene	ND	0.0141						0		30	
Surr: Dibromofluoromethane	1.62		1.766		91.8	63.7	129		0		
Surr: Toluene-d8	1.67		1.766		94.4	64.3	131		0		
Surr: 1-Bromo-4-fluorobenzene	1.76		1.766		99.8	63.1	141		0		

Sample ID: **1411035-002BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **11/6/2014** RunNo: **17935**
Client ID: **BATCH** Batch ID: **9232** Analysis Date: **11/7/2014** SeqNo: **357526**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.635	0.0136	0.6798	0	93.3	63.5	133				
Toluene	0.620	0.0136	0.6798	0	91.2	63.4	132				
Ethylbenzene	0.697	0.0204	0.6798	0	102	54.5	134				
m,p-Xylene	1.31	0.0136	1.360	0	96.3	53.1	132				
o-Xylene	0.668	0.0136	0.6798	0	98.3	53.3	139				
Surr: Dibromofluoromethane	1.95		1.700		115	63.7	129				
Surr: Toluene-d8	1.64		1.700		96.8	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	1.78		1.700		105	63.1	141				

Sample ID: **LCS-9232** SampType: **LCS** Units: **mg/Kg** Prep Date: **11/6/2014** RunNo: **17935**
Client ID: **LCSS** Batch ID: **9232** Analysis Date: **11/7/2014** SeqNo: **357547**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.877	0.0200	1.000	0	87.7	64.3	133				
Toluene	0.850	0.0200	1.000	0	85.0	67.3	138				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411042
CLIENT: Cardno ATC
Project: Coca Cola Bellingham 2014 Well Install

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID: **LCS-9232** SampType: **LCS** Units: **mg/Kg** Prep Date: **11/6/2014** RunNo: **17935**
Client ID: **LCSS** Batch ID: **9232** Analysis Date: **11/7/2014** SeqNo: **357547**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	0.971	0.0300	1.000	0	97.1	74	129				
m,p-Xylene	1.81	0.0200	2.000	0	90.3	79.8	128				
o-Xylene	0.935	0.0200	1.000	0	93.5	72.7	124				
Surr: Dibromofluoromethane	2.73		2.500		109	63.7	129				
Surr: Toluene-d8	2.37		2.500		94.9	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	2.59		2.500		104	63.1	141				

Sample ID: **MB-9232** SampType: **MBLK** Units: **mg/Kg** Prep Date: **11/6/2014** RunNo: **17935**
Client ID: **MBLKS** Batch ID: **9232** Analysis Date: **11/7/2014** SeqNo: **357548**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0200									
Toluene	ND	0.0200									
Ethylbenzene	ND	0.0300									
m,p-Xylene	ND	0.0200									
o-Xylene	ND	0.0200									
Surr: Dibromofluoromethane	2.20		2.500		87.9	63.7	129				
Surr: Toluene-d8	2.36		2.500		94.4	64.3	131				
Surr: 1-Bromo-4-fluorobenzene	2.48		2.500		99.4	63.1	141				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**ATC**	Work Order Number:	**1411042**
Logged by:	**Erica Silva**	Date Received:	**11/6/2014 11:32:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	2.9	Good
Sample	1.9	Good

Fremont Analytical

Chain of Custody Record

3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Laboratory Project No (internal): 1411042

Date: 11/04/14

Page: 1 of: 1

Client: Cardno ATC
Address: 6347 Seaview Ave NW
City, State, Zip: Seattle WA 98107 Tel: 206 781 1449
Reports To (PM): S. Payne Fax: 206 781 1543

Project Name: Coca Cola Bellingham 2014 Well Instal
Location: 2101 Woburn St, Bellingham
Collected by: S. Payne
Email: simon.payne@cardno.com Project No: 76.17568.0003

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	MW-8-9-10	11/04/14	1220	Soil														hold
2	MW-9-6-6.5	|	1430	|		X				X			X	T			
3	MW-9-11-11.5	|	1440	|		X				X							
4	MW-9-19.5-20	↓	1515	|														hold
5	MW-10-6-6.5	11/05/14	0910	|		X				X								
6	MW-10-11-11.5	|	0920	|		X				X								
7	MW-10-19.5-20	↓	0930	↓														hold
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni (Pb) Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks:

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished	Date/Time	Received	Date/Time
x	11/06/14 11:30	x	11/6/14 1132 am
Relinquished	Date/Time	Received	Date/Time
x		x	

TAT -> SameDay^ NextDay^ 2 Day 3 Day (STD)

^Please coordinate with the lab in advance

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Cardno ATC
Simon Payne
6347 Seaview Ave NW
Seattle, WA 98107

RE: Coca-Cola Bellingham
Lab ID: 1411109

November 18, 2014

Attention Simon Payne:

Fremont Analytical, Inc. received 6 sample(s) on 11/11/2014 for the analyses presented in the following report.

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.
Gasoline by NWTPH-Gx
Volatile Organic Compounds by EPA Method 8260

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Chelsea Ward
Project Manager

Date: *11/18/2014*

CLIENT: Cardno ATC
Project: Coca-Cola Bellingham
Lab Order: 1411109

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1411109-001	MW-1	11/11/2014 12:45 PM	11/11/2014 3:40 PM
1411109-002	MW-5	11/11/2014 1:30 PM	11/11/2014 3:40 PM
1411109-003	MW-8	11/11/2014 10:20 AM	11/11/2014 3:40 PM
1411109-004	MW-9	11/11/2014 11:55 AM	11/11/2014 3:40 PM
1411109-005	MW-10	11/11/2014 11:10 AM	11/11/2014 3:40 PM
1411109-006	DUP-1	11/11/2014 7:00 AM	11/11/2014 3:40 PM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **1411109**
Date: **11/18/2014**

CLIENT: Cardno ATC
Project: Coca-Cola Bellingham

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Prep Comments for METHOD (PREP-DX-W), SAMPLE (1411109-006A) required Silica Gel Cleanup Procedure (Using Method No 3630C).
Prep Comments for METHOD (PREP-DX-W), SAMPLE (1411109-005A) required Silica Gel Cleanup Procedure (Using Method No 3630C).
Prep Comments for METHOD (PREP-DX-W), SAMPLE (1411109-004A) required Silica Gel Cleanup Procedure (Using Method No 3630C).
Prep Comments for METHOD (PREP-DX-W), SAMPLE (1411109-001A) required Silica Gel Cleanup Procedure (Using Method No 3630C).
Prep Comments for METHOD (PREP-DX-W), SAMPLE (1411109-002A) required Silica Gel Cleanup Procedure (Using Method No 3630C).
Prep Comments for METHOD (PREP-DX-W), SAMPLE (1411109-003A) required Silica Gel Cleanup Procedure (Using Method No 3630C).

Analytical Report

WO#: **1411109**

Date Reported: **11/18/2014**

Client: Cardno ATC **Collection Date:** 11/11/2014 12:45:00 PM

Project: Coca-Cola Bellingham

Lab ID: 1411109-001 **Matrix:** Water

Client Sample ID: MW-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9307		Analyst: EC
Diesel (Fuel Oil)	ND	50.0		µg/L	1	11/17/2014 5:42:00 PM
Heavy Oil	ND	100		µg/L	1	11/17/2014 5:42:00 PM
Surr: 2-Fluorobiphenyl	62.6	50-150		%REC	1	11/17/2014 5:42:00 PM
Surr: o-Terphenyl	70.9	50-150		%REC	1	11/17/2014 5:42:00 PM
Gasoline by NWTPH-Gx				Batch ID: R18063		Analyst: BC
Gasoline	ND	50.0		µg/L	1	11/14/2014 8:35:00 PM
Surr: 4-Bromofluorobenzene	97.6	65-135		%REC	1	11/14/2014 8:35:00 PM
Surr: Toluene-d8	96.4	65-135		%REC	1	11/14/2014 8:35:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: R18048		Analyst: BC
Benzene	ND	1.00		µg/L	1	11/14/2014 8:35:00 PM
Toluene	ND	1.00		µg/L	1	11/14/2014 8:35:00 PM
Ethylbenzene	ND	1.00		µg/L	1	11/14/2014 8:35:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/14/2014 8:35:00 PM
o-Xylene	ND	1.00		µg/L	1	11/14/2014 8:35:00 PM
Surr: Dibromofluoromethane	102	61.7-130		%REC	1	11/14/2014 8:35:00 PM
Surr: Toluene-d8	97.8	40.1-139		%REC	1	11/14/2014 8:35:00 PM
Surr: 1-Bromo-4-fluorobenzene	98.1	68.2-127		%REC	1	11/14/2014 8:35:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411109**

Date Reported: **11/18/2014**

Client: Cardno ATC **Collection Date:** 11/11/2014 1:30:00 PM

Project: Coca-Cola Bellingham

Lab ID: 1411109-002 **Matrix:** Water

Client Sample ID: MW-5

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9307		Analyst: EC
Diesel (Fuel Oil)	ND	50.0		µg/L	1	11/17/2014 6:44:00 PM
Heavy Oil	ND	100		µg/L	1	11/17/2014 6:44:00 PM
Surr: 2-Fluorobiphenyl	55.9	50-150		%REC	1	11/17/2014 6:44:00 PM
Surr: o-Terphenyl	59.1	50-150		%REC	1	11/17/2014 6:44:00 PM
Gasoline by NWTPH-Gx				Batch ID: R18063		Analyst: BC
Gasoline	ND	50.0		µg/L	1	11/14/2014 9:03:00 PM
Surr: 4-Bromofluorobenzene	95.6	65-135		%REC	1	11/14/2014 9:03:00 PM
Surr: Toluene-d8	96.7	65-135		%REC	1	11/14/2014 9:03:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: R18048		Analyst: BC
Benzene	ND	1.00		µg/L	1	11/14/2014 9:03:00 PM
Toluene	ND	1.00		µg/L	1	11/14/2014 9:03:00 PM
Ethylbenzene	ND	1.00		µg/L	1	11/14/2014 9:03:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/14/2014 9:03:00 PM
o-Xylene	ND	1.00		µg/L	1	11/14/2014 9:03:00 PM
Surr: Dibromofluoromethane	101	61.7-130		%REC	1	11/14/2014 9:03:00 PM
Surr: Toluene-d8	98.6	40.1-139		%REC	1	11/14/2014 9:03:00 PM
Surr: 1-Bromo-4-fluorobenzene	96.2	68.2-127		%REC	1	11/14/2014 9:03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411109**

Date Reported: **11/18/2014**

Client: Cardno ATC **Collection Date:** 11/11/2014 10:20:00 AM

Project: Coca-Cola Bellingham

Lab ID: 1411109-003 **Matrix:** Water

Client Sample ID: MW-8

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9307		Analyst: EC
Diesel (Fuel Oil)	ND	50.0		µg/L	1	11/17/2014 7:15:00 PM
Heavy Oil	ND	100		µg/L	1	11/17/2014 7:15:00 PM
Surr: 2-Fluorobiphenyl	62.2	50-150		%REC	1	11/17/2014 7:15:00 PM
Surr: o-Terphenyl	60.9	50-150		%REC	1	11/17/2014 7:15:00 PM
Gasoline by NWTPH-Gx				Batch ID: R18063		Analyst: BC
Gasoline	ND	50.0		µg/L	1	11/14/2014 9:30:00 PM
Surr: 4-Bromofluorobenzene	98.4	65-135		%REC	1	11/14/2014 9:30:00 PM
Surr: Toluene-d8	99.0	65-135		%REC	1	11/14/2014 9:30:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: R18048		Analyst: BC
Benzene	ND	1.00		µg/L	1	11/14/2014 9:30:00 PM
Toluene	ND	1.00		µg/L	1	11/14/2014 9:30:00 PM
Ethylbenzene	ND	1.00		µg/L	1	11/14/2014 9:30:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/14/2014 9:30:00 PM
o-Xylene	ND	1.00		µg/L	1	11/14/2014 9:30:00 PM
Surr: Dibromofluoromethane	104	61.7-130		%REC	1	11/14/2014 9:30:00 PM
Surr: Toluene-d8	101	40.1-139		%REC	1	11/14/2014 9:30:00 PM
Surr: 1-Bromo-4-fluorobenzene	98.9	68.2-127		%REC	1	11/14/2014 9:30:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411109**

Date Reported: **11/18/2014**

Client: Cardno ATC **Collection Date:** 11/11/2014 11:55:00 AM

Project: Coca-Cola Bellingham

Lab ID: 1411109-004 **Matrix:** Water

Client Sample ID: MW-9

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9307		Analyst: EC
Diesel (Fuel Oil)	ND	50.0		µg/L	1	11/17/2014 7:46:00 PM
Heavy Oil	ND	100		µg/L	1	11/17/2014 7:46:00 PM
Surr: 2-Fluorobiphenyl	59.0	50-150		%REC	1	11/17/2014 7:46:00 PM
Surr: o-Terphenyl	69.0	50-150		%REC	1	11/17/2014 7:46:00 PM
Gasoline by NWTPH-Gx				Batch ID: R18063		Analyst: BC
Gasoline	ND	50.0		µg/L	1	11/14/2014 9:58:00 PM
Surr: 4-Bromofluorobenzene	101	65-135		%REC	1	11/14/2014 9:58:00 PM
Surr: Toluene-d8	100	65-135		%REC	1	11/14/2014 9:58:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: R18048		Analyst: BC
Benzene	ND	1.00		µg/L	1	11/14/2014 9:58:00 PM
Toluene	ND	1.00		µg/L	1	11/14/2014 9:58:00 PM
Ethylbenzene	ND	1.00		µg/L	1	11/14/2014 9:58:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/14/2014 9:58:00 PM
o-Xylene	ND	1.00		µg/L	1	11/14/2014 9:58:00 PM
Surr: Dibromofluoromethane	102	61.7-130		%REC	1	11/14/2014 9:58:00 PM
Surr: Toluene-d8	101	40.1-139		%REC	1	11/14/2014 9:58:00 PM
Surr: 1-Bromo-4-fluorobenzene	102	68.2-127		%REC	1	11/14/2014 9:58:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411109**

Date Reported: **11/18/2014**

Client: Cardno ATC **Collection Date:** 11/11/2014 11:10:00 AM

Project: Coca-Cola Bellingham

Lab ID: 1411109-005 **Matrix:** Water

Client Sample ID: **MW-10**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9307		Analyst: EC
Diesel (Fuel Oil)	ND	50.0		µg/L	1	11/17/2014 8:17:00 PM
Heavy Oil	ND	100		µg/L	1	11/17/2014 8:17:00 PM
Surr: 2-Fluorobiphenyl	63.5	50-150		%REC	1	11/17/2014 8:17:00 PM
Surr: o-Terphenyl	68.5	50-150		%REC	1	11/17/2014 8:17:00 PM
Gasoline by NWTPH-Gx				Batch ID: R18063		Analyst: BC
Gasoline	ND	50.0		µg/L	1	11/14/2014 10:25:00 PM
Surr: 4-Bromofluorobenzene	97.5	65-135		%REC	1	11/14/2014 10:25:00 PM
Surr: Toluene-d8	95.1	65-135		%REC	1	11/14/2014 10:25:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: R18048		Analyst: BC
Benzene	ND	1.00		µg/L	1	11/14/2014 10:25:00 PM
Toluene	ND	1.00		µg/L	1	11/14/2014 10:25:00 PM
Ethylbenzene	ND	1.00		µg/L	1	11/14/2014 10:25:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/14/2014 10:25:00 PM
o-Xylene	ND	1.00		µg/L	1	11/14/2014 10:25:00 PM
Surr: Dibromofluoromethane	102	61.7-130		%REC	1	11/14/2014 10:25:00 PM
Surr: Toluene-d8	98.1	40.1-139		%REC	1	11/14/2014 10:25:00 PM
Surr: 1-Bromo-4-fluorobenzene	98.0	68.2-127		%REC	1	11/14/2014 10:25:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Analytical Report

WO#: **1411109**

Date Reported: **11/18/2014**

Client: Cardno ATC **Collection Date:** 11/11/2014 7:00:00 AM

Project: Coca-Cola Bellingham

Lab ID: 1411109-006 **Matrix:** Water

Client Sample ID: DUP-1

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.				Batch ID: 9307		Analyst: EC
Diesel (Fuel Oil)	ND	50.0		µg/L	1	11/17/2014 8:48:00 PM
Heavy Oil	ND	100		µg/L	1	11/17/2014 8:48:00 PM
Surr: 2-Fluorobiphenyl	57.9	50-150		%REC	1	11/17/2014 8:48:00 PM
Surr: o-Terphenyl	66.9	50-150		%REC	1	11/17/2014 8:48:00 PM
Gasoline by NWTPH-Gx				Batch ID: R18063		Analyst: BC
Gasoline	ND	50.0		µg/L	1	11/14/2014 10:53:00 PM
Surr: 4-Bromofluorobenzene	99.0	65-135		%REC	1	11/14/2014 10:53:00 PM
Surr: Toluene-d8	96.3	65-135		%REC	1	11/14/2014 10:53:00 PM
Volatile Organic Compounds by EPA Method 8260				Batch ID: R18048		Analyst: BC
Benzene	ND	1.00		µg/L	1	11/14/2014 10:53:00 PM
Toluene	ND	1.00		µg/L	1	11/14/2014 10:53:00 PM
Ethylbenzene	ND	1.00		µg/L	1	11/14/2014 10:53:00 PM
m,p-Xylene	ND	1.00		µg/L	1	11/14/2014 10:53:00 PM
o-Xylene	ND	1.00		µg/L	1	11/14/2014 10:53:00 PM
Surr: Dibromofluoromethane	101	61.7-130		%REC	1	11/14/2014 10:53:00 PM
Surr: Toluene-d8	99.3	40.1-139		%REC	1	11/14/2014 10:53:00 PM
Surr: 1-Bromo-4-fluorobenzene	99.6	68.2-127		%REC	1	11/14/2014 10:53:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411109
CLIENT: Cardno ATC
Project: Coca-Cola Bellingham

QC SUMMARY REPORT

Diesel and Heavy Oil by NWTPH-Dx/Dx Ext.

Sample ID **1411109-001ADUP**	SampType: **DUP**			Units: **µg/L**		Prep Date: **11/14/2014**		RunNo: **18092**		
Client ID: **MW-1**	Batch ID: **9307**					Analysis Date: **11/17/2014**		SeqNo: **360714**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0						0		30	
Heavy Oil	ND	100						0		30	
Surr: 2-Fluorobiphenyl	48.7		80.00		60.8	50	150		0		
Surr: o-Terphenyl	51.3		80.00		64.2	50	150		0		

Sample ID **LCS-9307**	SampType: **LCS**			Units: **µg/L**		Prep Date: **11/14/2014**		RunNo: **18092**		
Client ID: **LCSW**	Batch ID: **9307**					Analysis Date: **11/17/2014**		SeqNo: **360726**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	826	50.0	1,000	0	82.6	65	135				
Surr: 2-Fluorobiphenyl	48.9		80.00		61.1	50	150				
Surr: o-Terphenyl	52.5		80.00		65.6	50	150				

Sample ID **MB-9307**	SampType: **MBLK**			Units: **µg/L**		Prep Date: **11/14/2014**		RunNo: **18092**		
Client ID: **MBLKW**	Batch ID: **9307**					Analysis Date: **11/17/2014**		SeqNo: **360727**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel (Fuel Oil)	ND	50.0									
Heavy Oil	ND	100									
Surr: 2-Fluorobiphenyl	42.4		80.00		53.0	50	150				
Surr: o-Terphenyl	47.5		80.00		59.3	50	150				

Date: *11/18/2014*

Work Order: 1411109
CLIENT: Cardno ATC
Project: Coca-Cola Bellingham

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID	**1411113-002ADUP**	SampType:	**DUP**	Units:	**µg/L**	Prep Date:	**11/15/2014**	RunNo:	**18063**
Client ID:	**BATCH**	Batch ID:	**R18063**			Analysis Date:	**11/15/2014**	SeqNo:	**360194**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0						0		30	
Surr: Toluene-d8	49.6		50.00		99.2	65	135		0	0	
Surr: 4-Bromofluorobenzene	49.2		50.00		98.3	65	135		0	0	

Sample ID	**LCS-R18063**	SampType:	**LCS**	Units:	**µg/L**	Prep Date:	**11/14/2014**	RunNo:	**18063**
Client ID:	**LCSW**	Batch ID:	**R18063**			Analysis Date:	**11/14/2014**	SeqNo:	**360200**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	460	50.0	500.0	0	92.0	65	135				
Surr: Toluene-d8	49.6		50.00		99.3	65	135				
Surr: 4-Bromofluorobenzene	49.4		50.00		98.8	65	135				

Sample ID	**MB-R18063**	SampType:	**MBLK**	Units:	**µg/L**	Prep Date:	**11/14/2014**	RunNo:	**18063**
Client ID:	**MBLKW**	Batch ID:	**R18063**			Analysis Date:	**11/14/2014**	SeqNo:	**360201**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	50.0									
Surr: Toluene-d8	49.0		50.00		97.9	65	135				
Surr: 4-Bromofluorobenzene	47.4		50.00		94.8	65	135				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411109
CLIENT: Cardno ATC
Project: Coca-Cola Bellingham

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID **LCS-R18048**	SampType: **LCS**	Units: **µg/L**	Prep Date: **11/14/2014**	RunNo: **18048**
Client ID: **LCSW**	Batch ID: **R18048**		Analysis Date: **11/14/2014**	SeqNo: **359592**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.1	1.00	20.00	0	90.3	69.3	132				
Toluene	17.8	1.00	20.00	0	89.2	61.3	145				
Ethylbenzene	18.7	1.00	20.00	0	93.3	72	130				
m,p-Xylene	37.1	1.00	40.00	0	92.7	73	131				
o-Xylene	18.5	1.00	20.00	0	92.7	72.1	131				
Surr: Dibromofluoromethane	49.6		50.00		99.3	61.7	130				
Surr: Toluene-d8	49.9		50.00		99.8	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	48.8		50.00		97.6	68.2	127				

Sample ID **MB-R18048**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **11/14/2014**	RunNo: **18048**
Client ID: **MBLKW**	Batch ID: **R18048**		Analysis Date: **11/14/2014**	SeqNo: **359593**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00									
Toluene	ND	1.00									
Ethylbenzene	ND	1.00									
m,p-Xylene	ND	1.00									
o-Xylene	ND	1.00									
Surr: Dibromofluoromethane	49.9		50.00		99.8	61.7	130				
Surr: Toluene-d8	49.6		50.00		99.1	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	47.6		50.00		95.2	68.2	127				

Sample ID **1411113-002ADUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **11/15/2014**	RunNo: **18048**
Client ID: **BATCH**	Batch ID: **R18048**		Analysis Date: **11/15/2014**	SeqNo: **360075**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	1.00						0		30	
Toluene	ND	1.00						0		30	

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Work Order: 1411109
CLIENT: Cardno ATC
Project: Coca-Cola Bellingham

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260

Sample ID **1411113-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **11/15/2014** RunNo: **18048**
Client ID: **BATCH** Batch ID: **R18048** Analysis Date: **11/15/2014** SeqNo: **360075**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	ND	1.00						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	1.00						0		30	
Surr: Dibromofluoromethane	51.1		50.00		102	61.7	130		0		
Surr: Toluene-d8	49.7		50.00		99.3	40.1	139		0		
Surr: 1-Bromo-4-fluorobenzene	49.4		50.00		98.9	68.2	127		0		

Sample ID **1411138-005AMS** SampType: **MS** Units: **µg/L** Prep Date: **11/14/2014** RunNo: **18048**
Client ID: **BATCH** Batch ID: **R18048** Analysis Date: **11/14/2014** SeqNo: **360084**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	8.10	1.00	10.00	0	81.0	65.4	138				
Toluene	7.69	1.00	10.00	0	76.9	64	139				
Ethylbenzene	7.94	1.00	10.00	0	79.4	64.5	136				
m,p-Xylene	16.5	1.00	20.00	0	82.4	63.3	135				
o-Xylene	8.12	1.00	10.00	0	81.2	65.4	134				
Surr: Dibromofluoromethane	50.4		50.00		101	61.7	130				
Surr: Toluene-d8	49.6		50.00		99.2	40.1	139				
Surr: 1-Bromo-4-fluorobenzene	48.9		50.00		97.8	68.2	127				

Qualifiers:

B	Analyte detected in the associated Method Blank	D	Dilution was required	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits	ND	Not detected at the Reporting Limit
R	RPD outside accepted recovery limits	RL	Reporting Limit	S	Spike recovery outside accepted recovery limits

Sample Log-In Check List

Client Name:	**ATC**	Work Order Number:	**1411109**
Logged by:	**Erica Silva**	Date Received:	**11/11/2014 3:40:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Required ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all coolers received at a temperature of >0°C to 10.0°C	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is the headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC	Condition
Cooler	0.0	Good
Sample	3.6	Good

Chain of Custody Record

Fremont Analytical

3600 Fremont Ave N. Tel: 206-352-3790
Seattle, WA 98103 Fax: 206-352-7178

Laboratory Project No (internal): 1411109

Date: 11/11/14 Page: 1 of: 1

Client: Cardno ATC
Address:
City, State, Zip Tel:
Reports To (PM): Simon Payne Fax:

Project Name: Coca-Cola Bellingham
Location: 2101 Woburn St. Bellingham, WA
Collected by: Mark Newman
Email: Project No: 76.17568.0003

*Matrix Codes: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, WW = Waste Water

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOC (EPA 8260)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SEMI VOL (EPA 8270)	PAH (EPA 8270 - SIM)	PCBs (EPA 8082)	Metals** (6020 / 200.8)	Total (T) ; Dissolved (D)	Anions (IC)***	EDB (8011)	Comments/Depth
1	MW-1	12:45	11/11/14	Water		X				X								
2	MW-5	13:30				X				X								
3	MW-8	10:20				X				X								
4	MW-9	11:55				X				X								
5	MW-10	11:10				X				X								
6	DUP-1	7:00				X				X								
7																		
8																		
9																		
10																		

**Metals Analysis (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Special Remarks: Silica gel cleanup

Sample Disposal: ☐ Return to Client ☐ Disposal by Lab (A fee may be assessed if samples are retained after 30 days.)

Relinquished x [signature] Date/Time 11/11/14 15:40
Received x [signature] Date/Time 11/11/14 15:40

Relinquished x Date/Time
Received x Date/Time

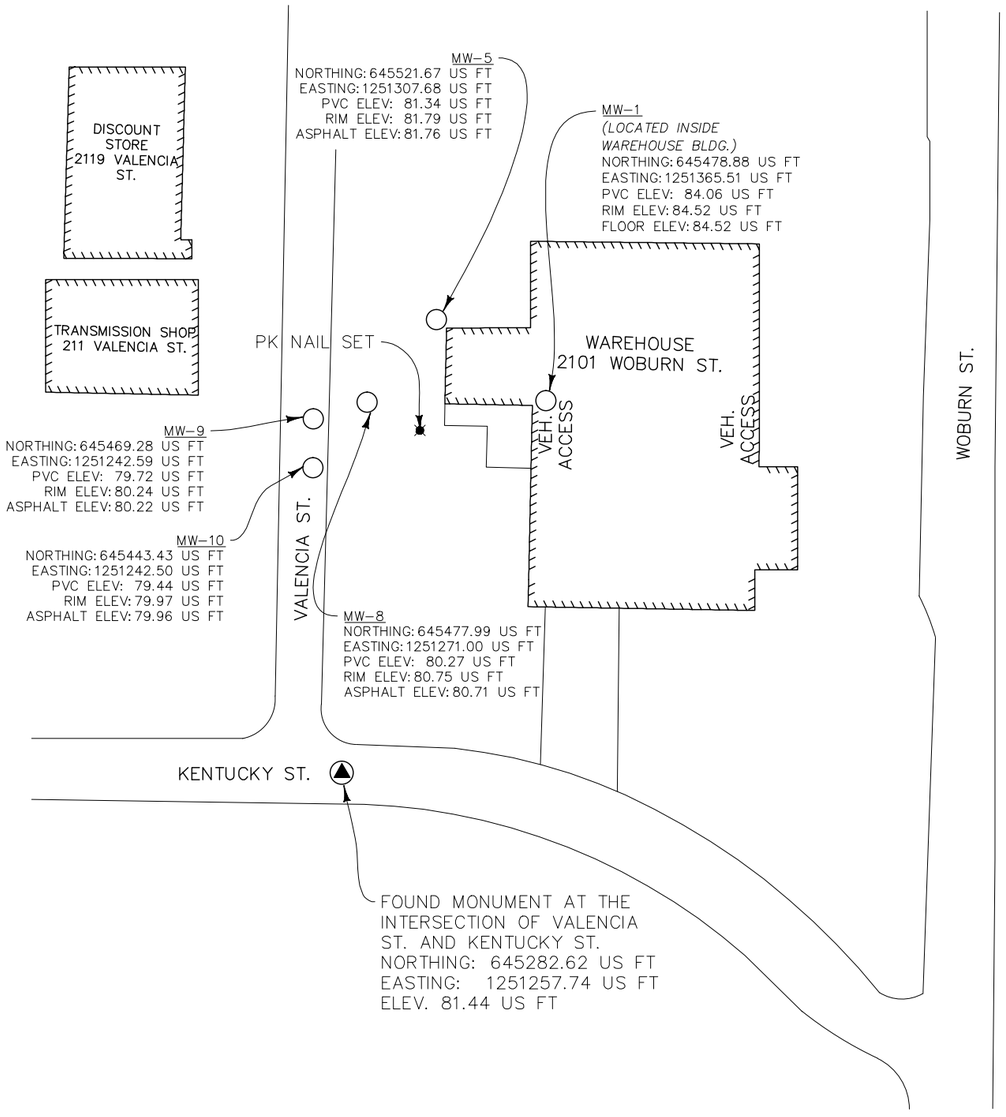
TAT -> SameDay^ NextDay^ 2 Day 3 Day STD

^Please coordinate with the lab in advance

Distribution: White - Lab, Yellow - File, Pink - Originator

APPENDIX C

PROFESSIONAL SURVEY DATA



SURVEY NOTES:

HORIZONTAL DATUM:

BASED UPON NAD 83/13 , WASHINGTON STATE PLANE COORDINATE SYSTEM, NORTH ZONE. US SURVEY FEET.
USING CITY OF BELLINGHAM MONUMENT AT THE INTERSECTION OF VALENCIA ST. AND KENTUCKY ST.

NORTHING: 645282.62 US SURVEY FEET
EASTING: 1251257.74 US SURVEY FEET

VERTICAL DATUM:

BASED UPON NAVD88 USING DIFFERENTIAL LEVELS FROM A SET PK NAIL DERIVED FROM ABOVE HORIZONTAL COORDINATES.

ELEVATION: 81.44 US SURVEY FEET

THE ABOVE DESCRIBED ESTABLISHED WITH RTK GPS OBSERVATIONS USING SMART NET NETWORK SOLUTION, PROVIDED BY LEICA.

http://smartnet.leica-geosystems.us/

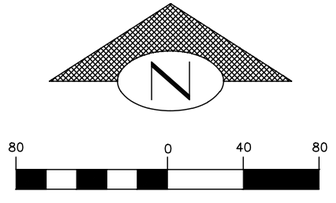
MONITOR WELL NOTE:

MONITOR WELL VALUES SHOWN HEREON ARE MEASURED AS FOLLOWS:

PVC PIPE LOCATED FROM THE BLACK MARK FOUND AND/OR ON THE TOP OF THE PVC PIPE AT THE NORTH EDGE FOR EACH WELL.

GROUND ELEVATIONS ARE SHOWN AS MEASURED AT THE ASPHALT AND OR FLOOR SURFACE DIRECTLY NORTH AND ADJACENT.

RIM ELEVATIONS OF THE STRUCTURE SURROUNDING THE PVC PIPE ARE LOCATED AT THE NORTH RIM.



(IN FEET)
1 inch = 80 ft.

3/31/2015

BUSH, ROED & HITCHINGS, INC.
CIVIL ENGINEERS & LAND SURVEYORS
2009 MINOR AVE. EAST, SEATTLE, WA 98102
(206) 323-4144 FAX (206) 323-7135
1-800-935-0508 E-MAIL: INFO@BRHINC.COM

MONITOR WELL EXHIBIT
CARDNO ATC PROJECT # Z076000021
COCA COLA FACILITY
CITY OF BELLINGHAM WASHINGTON

JOB NO	2015043.00
SCALE	1"=80'
DRAWN	TTB
CHECKED	DAB
DATE	3/30/15

LAYERSTATE: 2015043.00

APPENDIX D

LOW-FLOW WELL PURGING AND SAMPLING LOGS

Cardno ATC
Shaping the Future

Monitoring Well Purging and Sampling Log

FLD-103
Revision 1.0
Jul-08

Cardno ATC Branch: **Seattle**	Date: 11/11/14	Page 1 of 1
Cardno ATC Representative(s):	Project: **Coca-Cola Bellingham**	
Role: **Geologist**	Location: **2101 Woburn Street, Bellingham, WA**	
Contact Information: **206-781-1449**	Project No: **76.17568.0003**	Task No: —
MW-1	Contractor: **NA**	
	Weather: —	Temperature: —

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): **Envirotape**	Interface Probe (Model/ID): **NA**
Water Quality Meter (Model/ID): **YSI 556 MPS**	Decontamination Method: **Alconox/DI Water**

Purging Method: _____ PVC Bailer _____ Vacuum Truck _____ Submersible Pump _X_ Peristaltic Pump Other: _____

3 Well Volumes _____ Low Flow _X_ Micro Purge _____ Intake Depth (feet below TOC) 14.0

Sampling Method: _____ Teflon Bailer _____ Disposable Bailer _X_ Dedicated Tubing Other: _____

Casing Volume Information	Purging Calculations
Casing Diameter (Circle): (2") 4" 6" Other	Casing Volumes (CV): —
Casing Multiplier (CM)(gallons/foot): (0.16) 0.65 1.47	WC _____ x CM _____ = _____ (CV)(gal) x 3.0 CV (gal) =_____ PV

Monitoring Measurements

Depth to LNAPL (feet): —	Total Well Depth (feet): 27.5
Depth to Water (DTW)(feet): 3.25	Water Column (WC)(feet): 24.25
LNAPL Thickness (ft): —	Purging Start Time: 12:20

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	Temp (°C) (± 1°)	Specific Cond. (uS/cm) (± 5%)	Turbidity NTU	Dissolved Oxygen (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10 mV)	Other
12:35	3.29	0.15	14.17	40	Clear	3.14	7.50	-40.0	
12:38	3.31	0.18	14.16	40	"	3.12	7.42	-39.2	
12:41	3.33	0.21	14.17	40	"	3.08	7.47	-41.8	
12:44	3.36	0.24	14.16	40	"	3.02	7.51	-45.5	

Sample Data

Sample ID: MW-1	Time of Sample: 12:45	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
3-40ml VOAs, 1-1L Amber		N	HCl	8260, DRO, BTEX

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 3.36	Approximate Flow Rate (GPM): 0.01
Recovery Type: X Fast _____ Slow	% Recovery = 100

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments:

Monitoring Well Purging and Sampling Log

Cardno ATC — Shaping the Future

FLD-103 | Revision 1.0 | Jul-08

Cardno ATC Branch: **Seattle**	Date: 11/11/14	Page 1 of 1
Cardno ATC Representative(s): M. Newman	Project: **Coca-Cola Bellingham**	
Role: **Geologist**	Location: **2101 Woburn Street, Bellingham, WA**	
Contact Information: **206-781-1449**	Project No: **76.17568.0003**	Task No:
MW-5	Contractor: **NA**	
	Weather: —	Temperature: —

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): **Envirotape**	Interface Probe (Model/ID): **NA**
Water Quality Meter (Model/ID): **YSI 556 MPS**	Decontamination Method: **Alconox/DI Water**

Purging Method: _____ PVC Bailer _____ Vacuum Truck _____ Submersible Pump _X_ Peristaltic Pump Other: _____

3 Well Volumes _____ Low Flow _X_ Micro Purge _____ Intake Depth (feet below TOC) 13.00

Sampling Method: _____ Teflon Bailer _____ Disposable Bailer _X_ Dedicated Tubing Other: _____

Casing Volume Information				Purging Calculations
Casing Diameter (Circle):	2"	4"	6"	Other	Casing Volumes (CV): —
Casing Multiplier (CM)(gallons/foot):	0.16	0.65	1.47	WC _____ x CM _____ = _____ (CV)(gal) x 3.0 CV (gal) = _____ PV

Monitoring Measurements

Depth to LNAPL (feet): —	Total Well Depth (feet): 25.00
Depth to Water (DTW)(feet): 3.00	Water Column (WC)(feet): 22.00
LNAPL Thickness (ft): —	Purging Start Time: 13:05

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	Temp (°C) (± 1°)	Specific Cond. (uS/cm) (± 5%)	Turbidity NTU	Dissolved Oxygen (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10 mV)	Other
13:20	3.21	0.15	13.04	42	clear	3.18	7.53	-26.1	
13:23	3.28	0.18	12.98	43	"	3.05	7.52	-26.2	
13:26	3.33	0.21	12.93	42	"	2.91	7.51	-26.6	
13:29	3.36	0.24	12.90	43	"	2.82	7.51	-27.1	

Sample Data

Sample ID: MW-5	Time of Sample: 13:30	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
3-40ml VOAs, 1-1L Amber		N	HCl	6200, Pb, BTEX

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 3.36	Approximate Flow Rate (GPM): 0.01
Recovery Type: X Fast _____ Slow	% Recovery = 100

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments:

Cardno ATC
Shaping the Future

Monitoring Well Purging and Sampling Log

FLD-103
Revision 1.0
Jul-08

Cardno ATC Branch: **Seattle**	Date: 11/12/14	Page 1 of 1
Cardno ATC Representative(s): Mark Murman	Project: **Coca-Cola Bellingham**	
Role: **Geologist**	Location: **2101 Woburn Street, Bellingham, WA**	
Contact Information: **206-781-1449**	Project No: **76.17568.0003**	Task No: —
MW-8	Contractor: **NA**	
	Weather: —	Temperature: —

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): **Envirotape**	Interface Probe (Model/ID): **NA**
Water Quality Meter (Model/ID): **YSI 556 MPS**	Decontamination Method: **Alconox/DI Water**

Purging Method: _____ PVC Bailer _____ Vacuum Truck _____ Submersible Pump _X_ Peristaltic Pump Other: _____

3 Well Volumes _____ Low Flow _X_ Micro Purge _____ Intake Depth (feet below TOC) 6.0

Sampling Method: _____ Teflon Bailer _____ Disposable Bailer _X_ Dedicated Tubing Other: _____

Casing Volume Information

Casing Diameter **(Circle)**: 2" 4" 6" Other

Casing Multiplier (CM)(gallons/foot): 0.16 0.65 1.47

Purging Calculations

Casing Volumes (CV): —

WC _____ x CM _____ = _____ (CV)(gal) x 3.0 CV (gal) = _____ PV

Monitoring Measurements

Depth to LNAPL (feet): —	Total Well Depth (feet): 10.0
Depth to Water (DTW)(feet): 3.19	Water Column (WC)(feet): 6.81
LNAPL Thickness (ft): —	Purging Start Time: 10:00

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	Temp (°C) (± 1°)	Specific Cond. (uS/cm) (± 5%)	Turbidity NTU	Dissolved Oxygen (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10 mV)	Other
10:10	3.22	0.10	13.58	55	clear	5.11	8.25	-54.3	
10:13	3.26	0.13	13.55	54	"	5.09	8.16	-51.9	
10:16	3.27	0.16	13.53	54	"	5.08	8.10	-43.8	
10:19	3.29	0.19	13.54	53	"	5.06	8.07	-35.9	

Sample Data

Sample ID: MW-8	Time of Sample: 10:20	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
1-.8L Amber, 3-40ml VOAs		N	HCl	8x, BTEX, DX

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet):	Approximate Flow Rate (GPM):
Recovery Type: _____ Fast _____ Slow	% Recovery =

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments: Dup 1 collected from this well (7:00)

Cardno ATC
Shaping the Future

Monitoring Well Purging and Sampling Log

FLD-103
Revision 1.0
Jul-08

Cardno ATC Branch: **Seattle**	Date: 11/11/14	Page of
Cardno ATC Representative(s): M. Newman	Project: **Coca-Cola Bellingham**	
Role: **Geologist**	Location: **2101 Woburn Street, Bellingham, WA**	
Contact Information: **206-781-1449**	Project No: **76.17568.0003**	Task No: —
MW-9	Contractor: **NA**	
	Weather: —	Temperature: —

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): **Envirotape**	Interface Probe (Model/ID): **NA**
Water Quality Meter (Model/ID): **YSI 556 MPS**	Decontamination Method: **Alconox/DI Water**

Purging Method: _____ PVC Bailer _____ Vacuum Truck _____ Submersible Pump _X_ Peristaltic Pump Other: _____

3 Well Volumes _____ Low Flow _X_ Micro Purge _____ Intake Depth (feet below TOC) 8.0

Sampling Method: _____ Teflon Bailer _____ Disposable Bailer _X_ Dedicated Tubing Other: _____

Casing Volume Information	Purging Calculations
Casing Diameter **(Circle)**: 2" 4" 6" Other	Casing Volumes (CV): —
Casing Multiplier (CM)(gallons/foot): 0.16 0.65 1.47	WC _____ x CM _____ = _____ (CV)(gal) x 3.0 CV (gal) = _____ PV

Monitoring Measurements

Depth to LNAPL (feet): —	Total Well Depth (feet): 20.00
Depth to Water (DTW)(feet): 4.73	Water Column (WC)(feet): 15.27
LNAPL Thickness (ft): —	Purging Start Time: 11:30

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	Temp (°C) (± 1°)	Specific Cond. (uS/cm) (± 5%)	Turbidity NTU	Dissolved Oxygen (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10 mV)	Other
11:45	5.04	0.15	18.16	39	clear	8.83	6.84	74.6	
11:48	5.17	0.18	18.19	40	"	8.80	6.85	72.3	
11:51	5.28	0.21	18.21	41	"	8.79	6.85	70.1	
11:54	5.36	0.24	18.22	41	"	8.77	6.84	67.2	

Sample Data

Sample ID: MW-9	Time of Sample: 11:55	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
3 - 40mL VOAs, 1-1L Amber		N	HCl	6a, Dx, BTEX

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 5.36	Approximate Flow Rate (GPM): 0.01
Recovery Type: X Fast ____ Slow	% Recovery = 100

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments:

Cardno ATC
Shaping the Future

Monitoring Well Purging and Sampling Log

FLD-103
Revision 1.0
Jul-08

Cardno ATC Branch: **Seattle**	Date: 11/11/14	Page 1 of 1
Cardno ATC Representative(s): M. Newman	Project: **Coca-Cola Bellingham**	
Role: **Geologist**	Location: **2101 Woburn Street, Bellingham, WA**	
Contact Information: **206-781-1449**	Project No: **76.17568.0003**	Task No: —
MW-10	Contractor: **NA**	
	Weather: —	Temperature: —

Purging & Sampling Instrumentation & Method

Water Level Meter (Model/ID): **Envirotape**	Interface Probe (Model/ID): **NA**
Water Quality Meter (Model/ID): **YSI 556 MPS**	Decontamination Method: **Alconox/DI Water**

Purging Method: _____ PVC Bailer _____ Vacuum Truck _____ Submersible Pump _X_ Peristaltic Pump Other: _____

3 Well Volumes _____ Low Flow _X_ Micro Purge _____ Intake Depth (feet below TOC) 8.5

Sampling Method: _____ Teflon Bailer _____ Disposable Bailer _X_ Dedicated Tubing Other: _____

Casing Volume Information					Purging Calculations
Casing Diameter **(Circle)**:	(2")	4"	6"	Other	Casing Volumes (CV): —
Casing Multiplier (CM)(gallons/foot):	(0.16)	0.65	1.47		WC _____ x CM _____ = _____ (CV)(gal) x 3.0 CV (gal) = _____ PV

Monitoring Measurements

Depth to LNAPL (feet):	—	Total Well Depth (feet):	20
Depth to Water (DTW)(feet):	5.22	Water Column (WC)(feet):	14.78
LNAPL Thickness (ft):	—	Purging Start Time:	10:45

Purging Data

Time (24 Hours)	DTW (Feet)	Cum. Vol. Purged (Gallons)	Temp (°C) (± 1°)	Specific Cond. (uS/cm) (± 5%)	Turbidity NTU	Dissolved Oxygen (mg/L) (± 10%)	pH (± 0.1)	ORP (mV) (± 10 mV)	Other
11:00	6.01	0.15	14.83	41	clear	10.43	6.65	31.9	
11:03	6.11	0.18	14.81	42	"	10.39	6.68	30.3	
11:06	6.23	0.21	14.80	42	"	10.33	6.72	27.8	
11:09	6.29	0.24	14.91	43	"	10.22	6.73	23.5	

Sample Data

Sample ID: MW-10	Time of Sample: 11:10	Filtered (yes/no)	Preservatives	Analytical Parameters
Container Types, Volumes, & Quantities:				
3-40ml VOAs, 1-1L Amber		N	HCl	6x Dx, BTEX

Well Recovery Data

Maximum Drawdown (DTW*m*)(feet): 6.29	Approximate Flow Rate (GPM): 0.07
Recovery Type: ____ Fast X Slow	% Recovery = 100

Purge Water Disposition (Attach Drum Inventory Log - FLD 108):

Comments:

APPENDIX E

WASTE DISPOSAL DOCUMENTATION

REQUEST FOR WASTE PROFILING AND DISPOSAL APPROVAL

P.O. Box 31100 Portland OR 97231 Call 503-224-3206 Fax 503-228-9168

Company / Generator Name: Cardno ATC / Former Coca-Cola Facility - Bellingham

Business Address: 2101 Woburn Street City: Bellingham State: WA Zip Code: 98229

Telephone / Fax: 206-664-1899 Contact Person / Title: Simon Payne

Waste Name:	Soil	Water	
Waste Generation Process:	IDW	IDW – Purge and Decon	
Flashpoint:	N/A	☐≤140 °F ■>140 °F	☐≤140 °F ☐>140 °F
pH:	N/A	☐≤2 ■6-8 ☐7-12 ☐≥12.5	☐≤2 ☐3-7 ☐7-12 ☐≥12.5
Heavy Metals Above Limit:	☐Yes ■No	☐Yes ■No	☐Yes ☐No
RCRA VOCs:	☐Yes ■No	☐Yes ■No	☐Yes ☐No
Viscosity:	☐Liquid ☐Liquid/Solid ■Solid	■Liquid ☐Liquid/Solid ☐Solid	☐Liquid ☐Liquid/Solid ☐Solid
Composition:	Soil 99.99-100 % Lead 0-3.85 mg/kg % % %	Water 100 % % % % %	% % % % %
Analytical or MSDS on File:	■Yes ☐No	■Yes ☐No	☐Yes ☐No
Hazardous Waste:	☐Yes ■No	■Yes ☐No	☐Yes ☐No
Waste Codes:	N/A	N/A	
WA State Codes:	N/A	N/A	
Shipping Container Type:	Drum	Drum	
Volume:	6 ea	3 ea	
UN Number (If Applicable):	N/A	N/A	
Profile Number:	109003OR	IRM-PPV	

I EPA ID (if registered): CESQG

II. CEG Certification (sign if applicable)

State and Federal hazardous waste regulations define a Conditionally Exempt Generator (CEG) as a hazardous waste generator that generates, in one month, no more than 100 kilograms (220 pounds or approximately 25 gals) of hazardous waste, 2.2 pounds of acutely hazardous waste, or 220 pounds of spill cleanup debris containing hazardous waste. Additionally, to be a Conditionally Exempt Generator a generator must not at any time accumulate more than 2200 pounds (approximately 250 gals) of hazardous waste on site. Generators that do not meet these requirements are no longer defined as Conditionally Exempt Generators and must comply with regulations for small quantity or large quantity generators.

Under penalty of law and for the purposes of receiving the benefits of WasteXpress's Conditionally Exempt Generator hazardous waste collection service, I certify my organization complies with all requirements for conditionally exempt generator status. I understand that only the types and quantities of waste(s) listed on the Work Order/Quote and approved by WasteXpress may be disposed through this service. Additionally, I acknowledge CEG waste being shipped to International Resource Management will be repackaged, consolidated and shipped on a manifest along with other CEG generators to a permitted recycler, subtitle C / D landfill or TSDF per the 40 CFR for proper reclamation or waste disposal.

Signature Ann E. Macdonald Date 1-28-15

I hereby certify that all information submitted above and attached contains true and accurate descriptions of this waste. I hereby authorize WasteXpress to proceed with submitting waste profiles, wastestream surveys and or waste approval forms on my behalf to secure necessary approvals to dispose of this waste at a hazardous waste treatment, storage, disposal facility (TSDF) or other facility that is permitted and able to manage this waste. This authorization does not obligate me in any way to direct any volume of this waste to any disposal at this time, but may be decided once waste disposal approval has been obtained. I agree to notify WasteXpress if there is any change in the waste stream information as submitted for approval. I also certify that if waste samples were obtained, they were collected according to EPA acceptable methods and the sample(s) were analyzed by a qualified certified laboratory and that the appropriate chain of custody was used.

Signature Ann E. Macdonald **Date** 1-28-15

Printed Name Ann E. Macdonald **Title** Region Environmental Manager

Please return this completed form by fax to WasteXpress @ 503-228-9168

NON-HAZARDOUS WASTE MANIFEST

Please print or type (Form designed for use on elite (12 pitch) typewriter)

NON-HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: N/A

Manifest Document No.: 21377

2. Page 1 of 1

3. Generator's Name and Mailing Address:
Former Coca-Cola Facility % Cardno ATC
2101 Woburn St.
Bellingham, WA 98229

4. Generator's Phone: (503) 224-3206

5. Transporter 1 Company Name: Waste Xpress

6. US EPA ID Number: ORQ000023150

A. State Transporter's ID: 881002

B. Transporter 1 Phone: (503) 224-3206

7. Transporter 2 Company Name:

8. US EPA ID Number:

C. State Transporter's ID:

D. Transporter 2 Phone:

9. Designated Facility Name and Site Address:
IRM
11618 N Lombard St.
Portland, OR 97203

10. US EPA ID Number: ORQ000011643

E. State Facility's ID:

F. Facility's Phone: (503) 224-3206

11. WASTE DESCRIPTION	12. Containers No.	12. Containers Type	13. Total Quantity	14. Unit Wt./Vol.
a. Non-Regulated Solids, N.O.S. (Soil)	05 65	DM	3000	P
b. Non-Regulated Liquid, N.O.S. (Water)	5	DM	200	G
c.				
d.				

G. Additional Descriptions for Materials Listed Above
9 W X 1-5
b W 6-10

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

GENERATOR

16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

Printed/Typed Name | Signature | Date: Month Day Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name: Matthew Morris | Signature | Date: Month 01 Day 30 Year 15

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name | Signature | Date: Month Day Year

FACILITY

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

Printed/Typed Name: Dustin Stocker on behalf of IRM | Signature | Date: Month 2 Day 2 Year 15

NON-HAZARDOUS WASTE