REVISED WORKPLAN FOR SOIL AND GROUNDWATER SITE CHARACTERIZATION

CIRCLE K STORE #2706049
(FORMER SUNMART #30)
6006 WEST CLEARWATER AVENUE
KENNEWICK, WASHINGTON

PREPARED FOR:

Couche-Tard

CIRCLE K STORES INC.
255 EAST RINCON, STE. 100
CORONA, CALIFORNIA 92879

SUBMITTED TO:

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
15 WEST YAKIMA AVENUE, SUITE 200
YAKIMA, WASHINGTON 98902

PREPARED BY:

Blaes ENVIRONMENTAL

18011 SKY PARK CIRCLE, STE. H
IRVINE, CALIFORNIA 92614

BLAES PROJECT #202-06049-03

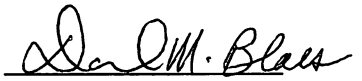
AUGUST 27, 2013

This Revised *Workplan For Soil and Groundwater Site Characterization* has been prepared by Blaes Environmental Management, Inc. for the exclusive use of Circle K Stores Inc. as it pertains to Circle K Store #2706049 located at 6006 West Clearwater Avenue in Kennewick, Washington. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists, engineers, and environmental consultants practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report. *Any use of or reliance on this report by a third party shall be at such a party's sole risk.*

Blaes Environmental Management, Inc. can offer no assurances and assumes no responsibility for site conditions or activities outside the scope of the inquiry requested by Circle K Stores Inc. as outlined in this document. It should be understood by all parties that Blaes Environmental Management, Inc. has relied on the accuracy of documents, oral information, and other materials, services, and information provided by Circle K Stores Inc., subcontractors, and other associated parties. Any subsequent modification, revision or verification of this report must be provided in writing by Blaes Environmental Management, Inc.

All work associated with this project will be performed under the supervision of a State of Washington Licensed Geologist.

Prepared By:
Blaes Environmental Management, Inc.



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Blaes Project #202-06049-03

August 27, 2013

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1.0 INTRODUCTION

This workplan was prepared by Blaes Environmental Management, Inc. (Blaes Environmental), on behalf of Circle K Stores Inc. (Circle K) for Circle K Store #2706049 (formerly Sunmart #30) located at 6006 West Clearwater Avenue in Kennewick, Washington (Figure 1). The workplan is in response to detections of petroleum hydrocarbon concentrations in soil found below the underground storage tank zone during a real estate due diligence drilling program conducted at the former Sunmart #30 property in 2012. It also follows the identification of petroleum hydrocarbons at depth near a dispenser island at the site during the drilling event in July 2013.

Based on the petroleum hydrocarbon concentrations indicated during the due diligence site assessment, Circle K proposes to conduct a site characterization program at the property to determine the vertical and lateral extent of petroleum hydrocarbon concentrations in the soil and potentially within groundwater beneath the site. The site characterization program will include permitting and drilling two soil borings (one boring adjacent to the eastern side of the underground storage tank zone and one boring near dispenser D-7/8), the installation of a groundwater monitoring well within each boring (if groundwater is encountered at the site), well development, soil and groundwater sample collection and laboratory analysis, and preparation of a site characterization report documenting the activities.

2.0 BACKGROUND INFORMATION

This section presents information regarding the site and provides a summary of the site background. The information was obtained from public records, the project files of Blaes Environmental, and the records of Circle K.

2.1 SITE LOCATION AND LAND USE

The property is located on the northwest corner of the intersection of Clearwater Avenue and Kellogg Street in Kennewick, Washington. The property is within Section 32, Township 9 North, Range 29 East of the Pasco Washington U.S. Geological Survey 7 ½ -minute Topographic Quadrangle. The property consists of a concrete and asphalt-paved lot with one existing single-story building (the Sunmart Store) and nine dispenser pumps. The site features are shown on the Site Plan in Figure 2. The site is positioned at a latitude of approximately 46 degrees, 12 minutes, 58.58 seconds north and a longitude of approximately 119 degrees, 12 minutes, 09.75 seconds west as measured on Google Earth 2013.

The area surrounding the site consists of a mixture of vacant property, commercial businesses, and residential development. The commercial business Windermere Real Estate is located directly north of the site and east (across Kellogg Street) is American West Bank. A residential development is located across West Clearwater Avenue south of the site. A natural gas distribution station and a parcel of vacant land are located west of the site.

2.2 SITE PHYSIOGRAPHY

The property lies at an elevation of approximately 527 feet above Mean Sea Level (Google Earth 2013). Natural surface drainage in the area is towards the northeast (U.S. Geological Survey 7 ½ -minute Topographic Quadrangle). On-site drainage is predominantly towards the south and east away from the building and fuel canopy structures and into the streets.

2.3 REGIONAL GEOLOGY AND HYDROGEOLOGY

The site is located within the Columbia Basin**,** also known as the Columbia Plateau, which is a vast area in eastern Washington, southwestern Idaho, and northern Oregon. The physiographic province is characterized by incised rivers, extensive plateaus, and anticlinal ridges rising to 4,000 feet above sea level. The region is underlain by Miocene Columbia River Basalt Group rocks and interbedded Neogene terrestrial sediments.

Data about what lies under the Columbia River basalts are sparse. Along the Idaho border south of Spokane, steptoes that once were mountain tops consist of Precambrian Belt Supergroup sedimentary rocks and metamorphosed Cretaceous granites. These mountains were enveloped by Miocene basalts so that only the summits remain above the lava flows. Deeply weathered granites support a clay mining industry, and a cassiterite deposit is known just south of Spokane.

Even less is known about the pre-Miocene basement in the central and western parts of the Columbia Basin. The only information available is from seven petroleum exploration wells that have penetrated the basalt and from projections of geology from the margins of the basin. Along the margins, Paleogene fault-bounded basins are filled with thick sequences of arkose, volcaniclastic rocks, and coal. Drilling has demonstrated that in a general way these sedimentary basins extend southward under the Columbia River basalts. The subsurface geology changes near the Snake River. A 1987 exploratory well drilled 20 miles northeast of Pasco penetrated a thin Paleogene crystal tuff section before encountering Triassic or Jurassic chloritic metamorphic rocks at an approximate depth of 8,000 feet.

The Columbia basin province is best defined by the areal extent of the Miocene Columbia River Basalt Group rocks. These basalts, which are present in the Blue Mountain uplift as well as in the Columbia Basin, cover 36 percent of the entire state. The group consists of four flood basalt formations, starting with the Imnaha Basalt at 17.5 Ma, followed by the Grande Ronde Basalt (16.5 to 15.6 Ma), the Wanapum Basalt (15.6 to 14.5 Ma), and lastly the Saddle Mountains Basalt (14.5 to 6 Ma). On the basis of geophysical evidence, the basalts are known to reach a maximum thickness of 16,000 feet in the Pasco Basin.

The greatest volume of basalts was erupted before 15.5 Ma. Within the Grande Ronde Basalt, individual flows exceed 480 cubic miles (2,000 km3) in volume. The flows were extruded from vents and northwest-trending fissures east of Pasco and in the southeast corner of the state. The flows were extremely fluid, and as a result a number of them reached the Pacific Ocean via the ancestral Columbia River drainage.

During the Pliocene and the Pleistocene, gravel, sand, silt, and clay were deposited in lakes or by aggrading streams and rivers in depressions such as the Pasco Basin, where 1,000 feet of sediment lies

on top of the basalt. Glacial outwash during the Pleistocene produced huge volumes of wind-blown silt called loess. It blankets much of the Columbia Basin and in places is up to 200 feet thick.

The Columbia Basin was the scene of the greatest catastrophic floods ever documented in the geologic record. The Pleistocene Cordilleran ice sheet advanced south into Idaho, damming the Clark Fork River at the Montana border. A huge impoundment, called Lake Missoula, formed. The lake had the volume of present-day Lake Michigan and was 2,000 feet deep at the dam. The ice dam repeatedly gave way between 12,700 and 15,300 years ago, releasing waters that caused unprecedented flooding. Water raced down the Spokane Valley and spread out over the Columbia Basin. The maximum flow rate was estimated at 15 cubic miles (62.5 km3) per hour, a rate 15 times the combined flow of all the rivers of the world. During the floods the surface of the land was greatly modified. Anastomosing channels were cut through the loess blanket and into basalt, leaving a jumbled topography of coulees, buttes, mesas, dry water falls, hanging valleys, and giant ripples. These geomorphic features are known collectively as the Channeled Scablands. The events are called the Great Spokane Floods.

2.4 SENSITIVE RECEPTORS

The Columbia River is located approximately 6,200 feet northeast of the site. There are no surface water bodies or wetlands within one-mile of the site. The KGH Physician Clinics facility is located approximately 4,350 feet west-southwest of the site. The Kamiakin High School and the Edison Elementary School are located approximately 3,800 feet east-northeast and 4,100 feet southeast of the site, respectively. The Fresenius Medical Care facility is located approximately 5,200 feet west-southwest of the site. The Save Harbor Crisis Nursery is located approximately 2,500 feet northeast of the site. A residential development is located across West Clearwater Avenue south of the site.

2.5 PREVIOUS INVESTIGATIONS

Previous investigations conducted at the site include the Environmental Due Diligence Site Assessment conducted in August 2012. The objectives of the Site Assessment Program were to gather geologic and hydrogeologic data from the site to evaluate whether or not petroleum hydrocarbon constituents exist at specific locations in the subsurface soil at the site. The Site Assessment Program involved drilling and collecting soil and groundwater samples from one soil boring adjacent to the UST basin and hand augering nine angled soil borings and collecting soil samples adjacent to the existing dispenser islands.

Based on the Site Assessment Program findings, Blaes Environmental confirmed, through laboratory analysis, the presence of GRO, DRO, and VOC concentrations in the samples collected from the soil boring adjacent to the location of the USTs. Volatile petroleum hydrocarbons constituents including GRO, DRO, and VOCs were also found in the soil below dispensers D-1/2 and D-7/8 at the site.

In July 2013, Blaes Environmental attempted to drill a groundwater monitoring well adjacent to boring B-1 with a Sonic drilling rig. The boring only advance to approximately 35 feet but was halted due to problems with the sonic casing binding against the cobbles in the boring. The boring was properly abandoned. Concurrent with the sonic drilling, Blaes Environmental and Cascade Drilling advanced a soil boring adjacent to dispenser D-1/2 and adjacent to dispenser D-7/8 with a hollow stem auger drilling rig. The soil near D-1/2 did not have significant field indications of petroleum hydrocarbons. However, the boring near D-7/8 had notable field indications of hydrocarbons from approximately 10 feet to the bottom of the boring at approximately 30 feet below the ground surface. The hollow-stem auger drilling rig could not go further through the cobbles at approximately 30 feet so Blaes Environmental decided to place a vapor well (VE-1A) in the boring near D-7/8.

2.6 SITE LITHOLOGY AND DEPTH TO GROUNDWATER

Based on soil samples collected from boring B-1 during the drilling program, subsurface soils consist predominantly of cobbles, gravel, and sand from the ground surface to the total depth of the boring at approximately 70 feet below ground surface (bgs). This site is extremely difficult drilling due to the large cobbles and gravel throughout the soil column. Groundwater was not encountered during the drilling program at this site simply because the augers could not penetrate further through the rocky soil. A groundwater well located at the Vista Field Airport, approximately 1,700 feet northwest of the site, (installed in 1995) indicates that the depth to groundwater, at the time of drilling, was approximately 109 feet bgs. Blaes Environmental believes that the depth to groundwater at the site is approximately 120-130 feet bgs now.

3.0 PROPOSED SITE CHARACTERIZATION PROGRAM

Circle K is proposing to continue the site characterization program including drilling two deeper soil borings (using air rotary drilling methods) and the installation of groundwater monitoring wells adjacent to the underground tank zone and adjacent to dispenser D-7/8 to determine the vertical extent of petroleum hydrocarbons in soil beneath these dispensers. The site assessment program will include, but not be limited to: 1) regulatory permitting to drill the borings deeper than 10 feet and install the groundwater monitoring wells; 2) drilling, soil sampling, and well installation if water is encountered; 3) well development and surveying; 4) collection and laboratory analysis of soil and groundwater samples from the borings and monitoring wells; and 5) the preparation of a site characterization report documenting the activities. Details of the proposed site characterization program are provided in the following sections.

3.1 SOIL BORING AND WELL PERMITTING

Blaes Environmental will prepare the required permits for drilling the proposed soil borings/groundwater monitoring wells. The permits will be obtained from the appropriate agency, kept on site during all drilling operations, and a copy included in the site characterization report.

3.2 SITE-SPECIFIC HEALTH AND SAFETY PLAN

Prior to initiating field activities, Blaes Environmental will produce a site-specific health and safety plan (HASP) for the site. The HASP will include a list of potential chemical and physical hazards, health and safety policies and practices, and emergency contingencies, including contact information for police, medical, and fire. A copy of the HASP will be kept on-site during all field activities. Before initiating field activities, a health and safety meeting will be conducted and the HASP will be reviewed and signed by all Blaes Environmental personnel and subcontractors. The HASP will conform to OSHA HAZWOPER requirements (29 CFR 1910.120).

3.3 UNDERGROUND UTILITY LOCATION/CLEARING AND STORE NOTIFICATION

An underground utility locator service will be contracted to mark underground utilities at the site that may be present near the proposed drilling locations. The utility survey will be completed within one week prior to conducting field work. Prior to drilling, the drilling crew will clear the boring location with hand tools to a depth of approximately five feet bgs. This will be performed as a precautionary measure to minimize the possibility of accidental damage to existing underground utilities.

Concurrent with the utility line locating process, Blaes Environmental will contact the store manager a minimum of 48 hours prior to drilling at the site. Blaes Environmental will describe the Site Assessment Program's scope of work to the store manager and indicate that Blaes Environmental and the drilling contractor would work diligently to minimize the impact to the business during the subsurface investigation. The store manager will be informed that Blaes Environmental intends to complete the assessment program within three days.

3.4 DRILLING AND MONITORING WELL INSTALLATION

The site assessment program will involve the drilling of one soil boring and subsequent installation of a groundwater monitoring well adjacent to and northeast of the UST area to determine if there are petroleum hydrocarbon concentrations in groundwater beneath the site and adjacent to dispenser 7/8. The approximate soil boring and groundwater monitoring well locations are shown on Figure 2. The tasks to complete the site assessment are presented in the following sections.

3.4.1 Soil Boring Drilling and Sampling

A State of Washington-licensed drilling company will be contracted to drill two soil borings using an air rotary drill rig. The soil borings will be drilled to a depth of approximately 150 feet bgs depending on the lithologic characteristics at the drilling location and whether or not groundwater is encountered in the borings before the vertical extent of hydrocarbons in soil is identified at each location.

During drilling, soil samples will be collected at 10-foot depth intervals beginning at a depth of approximately 40 feet below the ground surface. Soil samples will be collected using a modified California split-spoon soil sampler or from the air rotary cyclone. The soil samples will be logged using the Unified Soil Classification System (USCS) and will be screened using a calibrated photo-ionization detector (PID) to detect for the presence of VOCs. In addition to the PID measurements, Blaes Environmental will log the number of blow counts (if applicable) needed to sample at each sample horizon and prepare a lithologic log for each boring.

Upon sample collection, the sample sleeve will be removed from the split spoon sampler or recovered from the rotary cyclone. A small quantity of soil will be subsequently removed from the sleeve/sampling container using a Terra Core "T" sampler and added to a laboratory supplied vial containing methanol in accordance with sampling guidelines for Environmental Protection Agency (EPA)

Method 5035. A second quantity of soil will be removed from the sleeve/sampling container and placed into a laboratory-supplied glass sample jars. Both the methanol vials and glass jars will be labeled with pertinent project information, placed in sealable plastic bags, and placed on ice in a cooler. A written record of each sample will be entered onto a chain-of-custody record for transport to TestAmerica in Seattle, Washington for laboratory analysis. The drilling and soil sampling equipment, procedures, and quality assurance methods used during the drilling program are included in Appendix A.

3.4.2 Laboratory Analysis of Soil Samples

Soil samples collected during the site characterization program will be delivered by Blaes Environmental, under proper chain-of-custody record, to TestAmerica in Seattle, Washington. Soil samples from the soil borings will be analyzed for NWTPH-GX volatile GRO, NWTPH-DX semi-volatile DRO, and for VOCs including Benzene, Toluene, Ethylbenzene, & Total Xylenes (BTEX) and fuel oxygenates including methyl-tert butyl ether (MTBE) according to EPA Method 8260. Select soil samples may be analyzed for EDB using EPA method 8260. The laboratory results and a copy of the laboratory report (including quality control/quality assurance documentation, and chain-of-custody record) will be included in the site characterization report.

3.4.3 Monitoring Well Drilling and Installation

The soil borings may be converted into groundwater monitoring well MW-1 and well MW-2. The approximate location of the proposed wells is shown on Figure 2. The monitoring well casing will be 4-inch diameter Schedule 40 PVC and will be constructed with 0.020-inch slotted well screen installed from approximately 50 feet to 150 feet bgs. The remainder of the well will consist of blank casing to the ground surface. A sand pack will be placed in the annular space between the slotted well casing and the borehole wall from the bottom of the boring to approximately two foot above the screened interval (48 feet bgs). A 5-foot layer of hydrated bentonite will be placed on top of the sand pack and extend from a depth of approximately 48 feet up to a depth of approximately 43 feet bgs. The remaining 43-foot annular space in the borehole will be filled with cement grout to the ground surface.

At the ground surface, the groundwater monitoring well will be sealed with a removable cap and the well will be enclosed within a traffic-rated, 18-inch-diameter locking well box that will be cemented in place. A proposed construction diagram of each well is included in Appendix B.

3.4.4 Monitoring Well Development

Following drilling and well installation activities, the groundwater monitoring wells will be developed using a surge tool and bailer. Surging and bailing will settle and clean the sand pack and remove sediment from the well. Well development activities will continue until relatively clear water can be purged from the well. Development water will be temporarily stored on-site in properly labeled Department of Transportation (DOT)-approved 55-gallon drums pending profile analysis and disposal.

3.4.5 Monitoring Well Surveying

A licensed land surveyor will survey the elevation of the new wells using a local datum or benchmark. The well elevation will be surveyed from a permanent mark on the top of the uncapped PVC well casing. In addition, the longitude and latitude of the new well will be identified to sub-meter accuracy, as applicable.

3.5 GROUNDWATER MONITORING AND SAMPLING

Blaes Environmental will conduct a groundwater monitoring and sampling event following the well installation program. The groundwater monitoring and sampling event will consist of three tasks: 1) measuring the depth to groundwater in the wells; 2) purging approximately three casing volumes of water from the well and collecting a groundwater sample using a low flow controller; and 3) analyzing the groundwater sample at a State of Washington certified analytical laboratory. A description of each task is presented in the following sections.

3.5.1 Groundwater Depth Measurement

The depth to groundwater in the monitoring well will be measured to the nearest 0.01 foot using a groundwater level indicator or an interface probe. The water level measurement probe will be washed with a Liquinox™ solution and rinsed with tap water before and after the groundwater depth measurement to prevent cross contamination.

The depth to groundwater will be measured from a permanent mark on the top of the uncapped PVC well casing. Using the elevation of the well casing at that same mark, Blaes Environmental will calculate the elevation of groundwater in each well during the monitoring event by subtracting the measured depth to groundwater within the well from the surveyed wellhead elevation. The elevation of the groundwater surface in the well will be integrated into the hydraulic gradient data for the site.

3.5.2 Monitoring Well Purging and Groundwater Sample Collection

Prior to collecting a groundwater sample from each well, Blaes Environmental will purge the well using a submersible pump with a low flow controller. During the purging process, groundwater parameters such as dissolved oxygen, conductivity, and temperature within the well will be recorded using a water parameter meter. The field parameters and purge water volume from the well will be recorded in the field notes and presented in the site characterization report. The submersible pump and water parameter meter will be washed with a Liquinox™ solution and rinsed with tap water before and after each use. Purged groundwater will be temporarily stored in DOT-approved drums, prior to disposal.

Following purging, a groundwater sample will be collected from the groundwater monitoring well to evaluate the current dissolved petroleum hydrocarbon concentrations in the groundwater. The groundwater sample will be collected using the low flow controller and pump system at the end of the purge cycle and placed into laboratory supplied sample containers. The sample containers will be sealed with Teflon lined caps, labeled, and placed on ice in a cooler. A written record of the sample will be entered onto a chain-of-custody document for transport to the analytical laboratory.

3.5.3 Groundwater Laboratory Analyses

The groundwater samples will be delivered to Test America in Seattle, Washington for laboratory analyses. The groundwater samples will be analyzed for NWTPH-GX volatile GRO, NWTPH-DX semi-volatile DRO, and for VOCs including BTEX and fuel oxygenates including and MTBE according to EPA Method 8260B. A copy of the analytical results and the laboratory report (including quality control/quality assurance documentation, and chain-of-custody record) will be included in the site characterization report.

3.6 DERIVED WASTE MANAGEMENT

Soil waste generated during the drilling and well installation will be stored in rolloff bins pending profile analysis and disposal. Waste water generated during the drilling, well installation, well development process, and well sampling will be stored on-site in properly labeled DOT-approved 55 gallon steel drums, or poly tank, pending removal and disposal. Composite samples will be collected and analyzed from each media (soil and water) at Test America in Seattle, Washington to profile the waste for proper disposal. Following the successful completion of the profiling process, the waste will be removed from the site. Copies of the profile and disposal documentation will be included in the site characterization report.

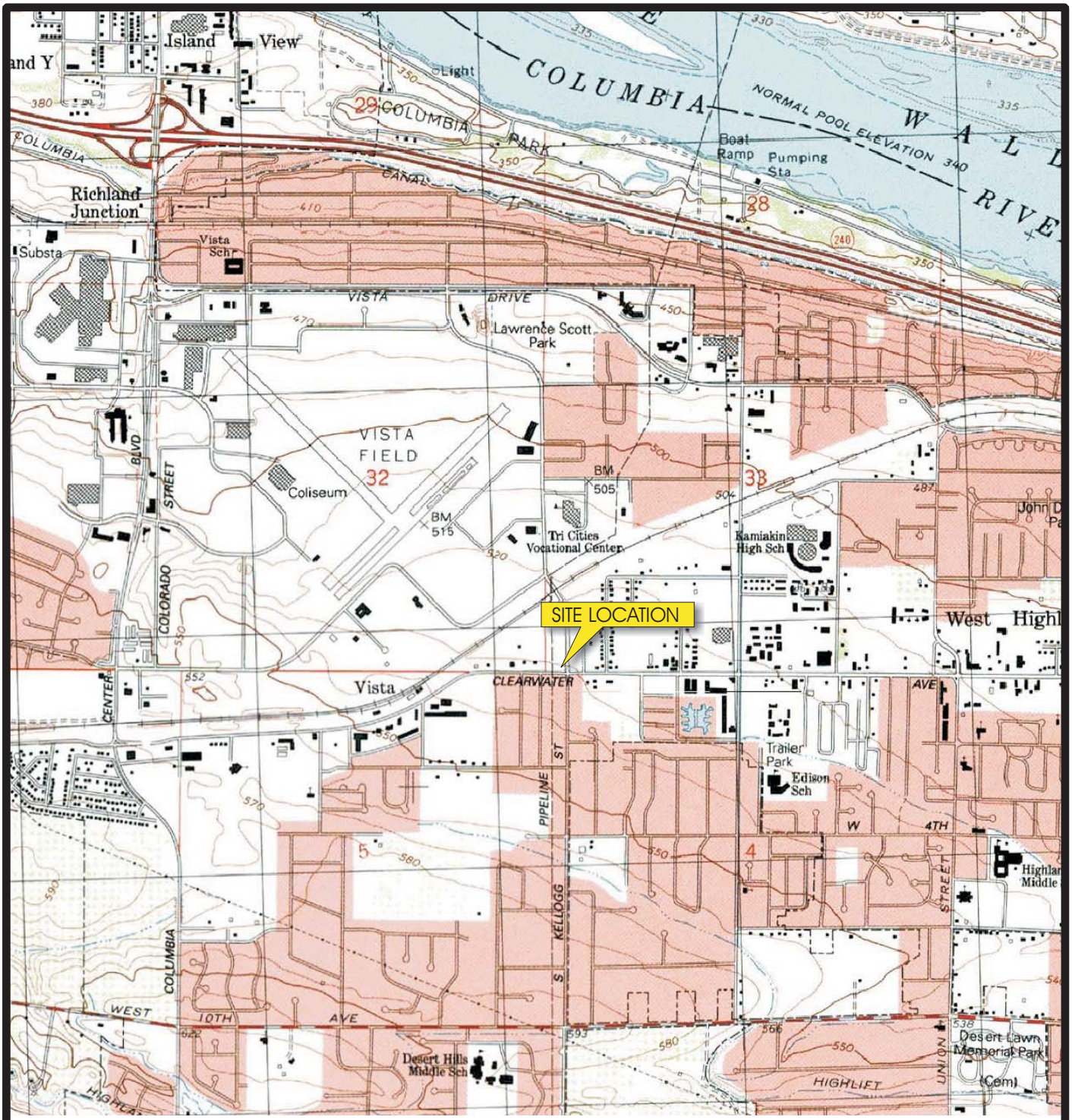
3.7 REPORT PREPARATION

Following completion of field activities, Blaes Environmental will evaluate the data and prepare a site characterization report that will document the activities conducted at the site and present the findings of the site characterization program. The site characterization report will be submitted to the State of Washington Department of Ecology following completion.

4.0 REFERENCES

Lasmanis, Raymond, 1991, The geology of Washington: Rocks and Minerals, v. 66, no. 4, p. 262-277. © Copyright Heldref Publications (Helen Dwight Reid Educational Foundation).

FIGURES



Source: MapTech Terrain Navigator Kennewick Quadrangle, 7.5 Minute Topographic Series, 1992

QUADRANGLE LOCATION

Approximate Scale
1:24,000
1 inch = 2000 feet

0 1000 2000 3000 4000

Contour Interval = 10 feet

SITE LOCATION: T9N, R29E, Section 32
46° 12′ 46.72″ North Latitude; 119° 12′ 06.14″ West Longitude

Blaes ENVIRONMENTAL

Couche-Tard Circle K Stores, Inc.

Circle K Store #2706049
6006 West Clearwater Ave.
Kennewick, WA

SITE LOCATION MAP

April 2013	Project #202-06049-02	Figure 1

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Approximate Scale
1 inch = 60 feet

0 30 60 120

Legend

MW/SVE-1	Approximate Location of Proposed Monitoring/SVE Well & ID
B-3	Approximate Location of Proposed Soil Borings & ID
B-1	Approximate location of Soil Boring & ID
D-1/2	Approximate location of Angled Soil Boring-ID

Blaes ENVIRONMENTAL

Couche-Tard Circle K Stores, Inc.

Circle K Store #2706049
(Former Sunmart #30)
6006 West Clearwater Avenue
Kennewick, Washington

SITE PLAN

April 2013 | Project #202-06049-02

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Figure 2

APPENDICES

APPENDIX A

DRILLING, SOIL SAMPLING, AND BORING ABANDONMENT PROCEDURES

DRILLING, SOIL SAMPLING, AND BORING ABANDONMENT PROCEDURES

1.0 DRILLING PROCEDURES

1.1 Drilling Equipment

Soil borings drilled around the UST area will be drilled using a truck-mounted hollow-stem auger drilling rig (Model CME-75). The drilling rig will be outfitted with hollow-stem auger flights five feet in length. The drilling rig will be equipped with all additional tools and support equipment necessary to complete each soil boring to the desired depth.

1.2 Drilling Procedures

Prior to drilling, a utility search will be conducted for each boring. The utility search will involve hand augering to a depth of approximately five feet below the ground surface. After the utility search, the drilling rig will be positioned at the drilling location and stabilized using four hydraulic leveling pistons. After the drilling rig is seated and stable, the mast will be raised into position. The hollow-stem augers will be advanced until reaching each target sampling depth. When the target sampling depth is reached, the top auger flight will be disconnected from the drive assembly near the ground surface and the sampling equipment will be placed down the borehole using a wireline and a downhole drive hammer. Following soil sample collection, the auger flights will be reconnected and drilling proceeded to the next sampling depth. This process will continue until the total depth of the boring was reached and all of the desired soil samples were collected.

1.3 Drilling QA/QC

All drilling equipment, including the rig, hollow-stem auger flights, and hand-auger assembly, will be decontaminated prior to arriving at the site and after completing each boring to prevent cross-contamination. The equipment will be steam cleaned, rinsed with water, and allowed to air dry.

2.0 SOIL SAMPLE COLLECTION AND PRESERVATION PROCEDURES

2.1 Qualifications of Sampling Personnel

All soil samples will be handled by personnel from Blaes Environmental. Blaes Environmental personnel have drilled over 650 soil borings, collected over 1,400 soil samples, and have installed over 270 groundwater wells in the last 10 years. Further, Blaes Environmental maintains up to date information on regulatory requirements and standards relating to soil and groundwater sampling.

2.2 Soil Sampling Equipment

Soil samples collected by the drilling rig will be collected using the drilling drive hammer and accessories. Soil samples collected from any hand augered borings were collected directly from the bucket or using a Modified California split-spoon sampler consisting of an outer sampling barrel lined with three 6-inch long brass sample rings. When the drive hammer is used, the sample rings will be placed inside the split barrel halves, which will be held in place by a bottom drive shoe and an external top sub. Soil Samples collected from the hand-augered soil borings, if any, will be collected using a non-mechanized drive sampling equipment consisting of solid-stem rods attached to a 30-pound drive hammer and drive shoe (containing a six-inch brass sample ring).

2.3 Soil Sampling Procedures

Soil samples will be collected at approximate 5-foot depths within each boring, typically beginning at a depth of approximately 5 feet below the ground surface. After drilling to the desired sampling depth, the split-spoon or drive sampler will be attached to the wireline or rods and lowered through the

hollow-stem augers. The sampler will be driven approximately 12 to 18-inches into undisturbed soil by the drive hammer for the samples collected by the drilling rig and driven approximately six-inches into undisturbed soil by the drive hammer for the samples collected in any hand-augered borings. The number of hammer blow counts was recorded on the lithologic log sheets.

After the sampler is retrieved, the sample rings will be removed from the sample barrel/shoe. Blaes Environmental will submit the soil from the lead sample sleeve (some prepared with methanol) for laboratory analysis. Samples will be labeled, placed in sealable plastic bags, and placed on ice in a cooler. A written record of each sample will be entered on a Chain-of-Custody, a copy of which will remain with the samples until it arrives at the analytical laboratory. The lithologic characteristics of the soil from the upper sample rings will be described using the Unified Soil Classification System (USCS).

2.4 Decontamination Procedures During Soil Sampling

All sampling equipment will be decontaminated prior to arriving on site and between each sampling depth to prevent cross-contamination between samples. The sampling equipment will be washed with a laboratory soap solution, rinsed twice with tap water, and allowed to air dry.

2.5 Methods Used to Prevent Volatile Losses During Sampling Program

Following retrieval of the sampler, a member of the drilling crew will hand the sampler to the Blaes Environmental field personnel. Blaes Environmental will remove the sample sleeves from the sampler and immediately seal the ends of each ring with plastic end caps placing the samples into the ice chest. In some cases, the samples will be prepared using EPA Method 5035 with methanol.

2.6 Methods Used to Preserve the Samples Until Delivery to the Laboratory

All samples will be stored in the cooler or sample refrigerator (chilled to approximately 33 degrees Fahrenheit) by Blaes Environmental for pick up by the laboratory the following morning or will be directly delivered from the site to the laboratory. All samples will be stored on ice in a cooler during transport.

2.7 Chain-of-Custody Documentation

All soil samples will be logged onto a Chain-of-Custody record in the field. When the samples are picked up by the laboratory, each sample will be transferred directly to an ice chest for transport to the laboratory. The laboratory member that transfers the samples will also sign the Chain-of-Custody verifying that the samples were properly delivered in-tact and chilled.

3.0 SOIL BORING ABANDONMENT PROCEDURES

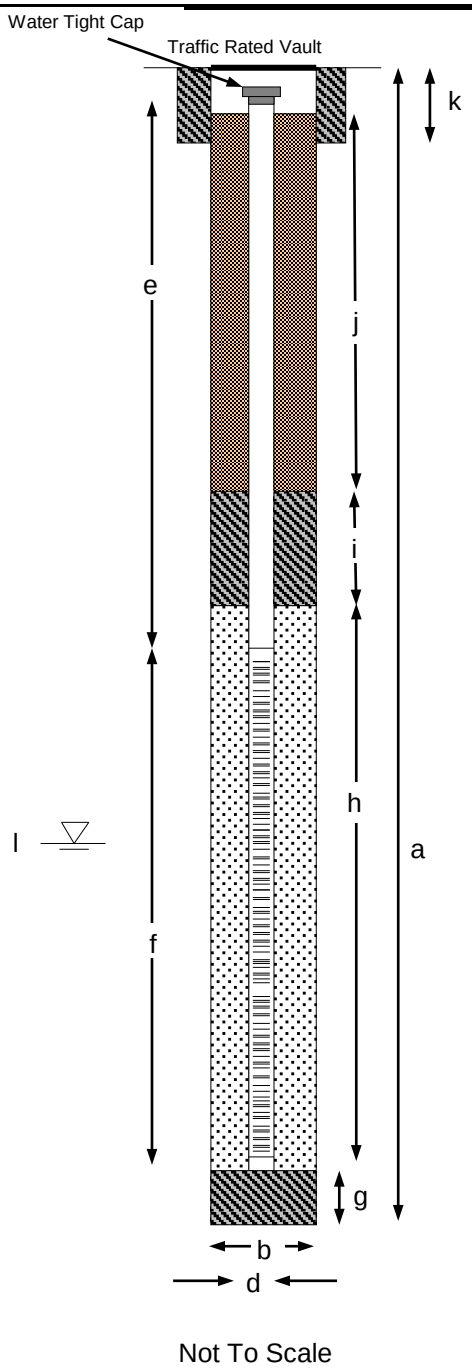
Soil cuttings from each soil boring will be used as backfill to abandon the soil boring if the boring is drilled to less than 10 feet below the ground surface. Soil borings that extend below 10 feet will be grouted and the soil cuttings properly disposed of offsite.

APPENDIX B

PROPOSED
MONITOR WELL CONSTRUCTION DIAGRAM

Monitoring Well

PROJECT NUMBER		BORING / WELL NO.	**Proposed MW-1**
PROJECT NAME		TOP OF CASING ELEV.	
LOCATION		GROUND SURFACE ELEV.	
		DATUM	
WELL PERMIT NO.		INSTALLATION DATE	



Not To Scale

EXPLORATORY BORING

a.	Total depth	150 ft.
b.	Diameter	10 in.
	Drilling method	Hollow-Stem Auger

WELL CONSTRUCTION

c.	Total casing length	150 ft.
	Material	Schedule 40 PVC
d.	Casing Diameter	4 in.
e.	Length of Blank Casing	50 ft.
f.	Screen Interval	50 ft.@ 150 ft.
	Perforation type	Machine Slot
	Perforation size	0.020 inch
g.	Bottom seal	0 ft.
	Seal material	None
h.	Sand Pack interval	48 ft.@ 150 ft.
	Pack material	Silica Sand
i.	Seal	5 ft.
	Seal material	Hydrated bentonite
j.	Surface Seal	43 ft.
	Seal material	Cement Grout
k.	Surface Completion	ft.
	Completion Material	Well Box
l.	Depth to groundwater below ground surface	Est 120 ft.

Well Construction

Attachment

Blaes ENVIRONMENTAL

Prepared by: _____ Date: _____

Reviewed by: _____ Date: _____