PETROLEUM-CONTAMINATED SOIL REMOVAL AND SOIL SAMPLING WORK PLAN

FOR

VCP Project ID# CE0463
CURLY'S TEXACO
294 WILLIAMS BOULEVARD
Richland, WA 99352

December 11, 2017

Prepared for:

Watkins Estate
Attn: Glen Clark
1219 N Edison St
Kennewick WA 99336
and
Mr. Frank Winslow
Department of Ecology
Toxic Cleanup Program, Central Regional Office
1250 West Alder Street
Union Gap, Washington 98903

Prepared by:
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Licensed Hydrogeologist and Geologist

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PROJECT SUMMARY

Client:	Watkins Estate 1219 N Edison St Kennewick WA 99336
Point of Contact:	Glen Clark
Property:	294 Williams Boulevard Richland, Washington 99352
Major Commercial Activity:	Fueling Station/Commercial Property
VCP Project ID Number:	CE0463
Licensed Hydrogeologist/Geologist	Brent N. Bergeron, LHG, LG
License Number/Expiration:	LHG #2267, expires 1/3/2018 LG #2267, expires 1/3/2018
Project Number:	E2017/0905
Report Date:	December 11, 2017

Legal description: Parcel 1-0298-302-0708-029, in the southeast quarter of Section 2, in Township 9 N., Range 28 E.W.M.

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1.0 PROJECT DESCRIPTION

1.1 Purpose and Objectives

The Watkins Estate retained Blue Mountain Environmental and Consulting Company, Inc. (BMEC) to prepare a work plan that presents an approach for conducting petroleum-contaminated soil (PCS) removal and additional delineation of the petroleum hydrocarbon (PHC) contamination in the vadose zone soils for the property located at 294 Williams Boulevard, Richland, Washington (hereafter referred to as the "Site").

The main objective of this work plan is to develop a sampling and analysis program that will further characterize the nature and extent of vadose zone soil contamination per the Washington Department of Ecology (Ecology) guidelines based on the Model Toxics Control Act (MTCA) Method A Cleanup Levels for Unrestricted Land Use.

Specific objectives for the PCS removal and delineation include:

- Additional delineation of the horizontal and vertical extent of gasoline contamination in the vadose zone soils at concentrations exceeding the MTCA Method A Cleanup Levels for Unrestricted Land Use.

- Field assessment of depth to groundwater and necessity to sample such groundwater, if encountered.

- Removal and disposal of existing stockpiled PCS.

- Completion of a report documenting the field activities performed during the PCS removal and additional PHC delineation in vadose zone soils. This report will include the field activity and laboratory analytical results, conclusions, and recommendations regarding the PCS removal and soil sampling activities, as well as the necessity to assess groundwater, if encountered.

1.2 Location

The property consists of one parcel of land with improvements. The Site is accessible from Williams Boulevard to the south and Jadwin Avenue to the west (**Figure 1**). The nearest major highway is Highway 240 approximately 1.4 miles south of the Site. The elevation is approximately 370 feet above mean sea level. The nearest major body of water is the Columbia River approximately 0.36 miles east of the Site. The old Uptown Shopping Center is adjacent to the north-northeast of the Site. There are no flood zones or wetlands associated with the Site.

1.3 Schedule

The proposed PCS removal and additional delineation of PHC contamination in the vadose zone soils is estimated to take approximately three to four business days to complete in the field. The field work will begin as soon as the work plan has been approved by the Client and Ecology, and the appropriate subcontractor(s) (i.e., licensed PCS hauling and disposal company, underground utility locater, and analytical laboratory) have been secured. A report regarding the field activities and laboratory analytical data results shall be completed within an estimated timeframe of four to six weeks following completion of all field activities.

1.4 Reports

The project report will include details of all field work and methodologies performed, a summary of analytical laboratory data and related human health risk-based assessments, certified laboratory data report, a site vicinity map, a sample location map, photographs of field activities, and conclusions and recommendations. All risk-based assessments will be in comparison to Ecology MTCA Method A Cleanup Levels for Unrestricted Land Use.

2.0 SITE BACKGROUND

Historical research indicates the Site has been a gas station as far back as 1948, when it was a Standard Oil station. The current Texaco station was built behind the Standard station and both stations operated at the Site until the 1970s, when the Standard station was demolished. The other structure, currently the Glass Art shop, was a drop-off location for American Linen Dry Cleaners.

BMEC conducted a Phase I environmental site assessment (ESA) in March 2017. During the Phase I ESA, site manager Mr. Gary Roal, indicated a former petroleum spill accident occurred at the Site on September 1, 2011, when a car ran into an onsite dispenser. On November 3, 2011, Ecology received a phone call from a service technician who discovered a supply line leaking under the damaged pump. The pumps at the Site did not have containment systems beneath them. The pump has been out of service since November 3, 2011. On December 15, 2011, Ecology inspected the Site and observed visible contamination. Ecology then ordered a site check at the subject property.

On June 1, 2012, PBS Environmental collected soil samples from 1.5 feet below the damaged dispenser. Laboratory analysis indicated petroleum hydrocarbon (PHC) contamination above MTCA cleanup levels. The Site was listed on the DOE Confirmed and Suspected Contaminated Sites (CSCSL) list. The owner was encouraged by Ecology to enter the Voluntary Cleanup Program (VCP) and conduct cleanup of the Site in order to obtain a No Further Action (NFA) determination for the spill at the Site. The spill also indicates a potential Vapor Encroachment Condition at the Site. In addition to this information, the Site is also listed on the WA-DOE CCSL (Confirmed Contaminated Site List).

Ecology Underground Storage Tank (UST) files indicated there were three registered USTs at the Site, including two 8,000-gallon gasoline USTs and one 4,000-gallon diesel UST. These were lined steel USTs with impressed current cathodic protection. Fuel supply lines were single-walled

fiberglass-reinforced plastic (FRP). UST #2 was closed September of 2012 and the UST was emptied to less than 1" of product. No spill containment existed under the dispensers that were removed in August 2017. There were three additional unregistered USTs at the site; one formerly used to store waste oil and two for heating oil. Three in-ground hydraulic lifts are located in the repair shop.

Excavation of all six USTs and piping, pump island removal and disposal, and PCS excavation and stockpiling started on August 14, 2017, and concluded on August 24, 2017. Kyle Parker from Ecology was on-site from August 14 -16 to observe tank excavation and removal activities. Five of the six tanks removed displayed no evidence of corrosion or leaks. However, the 550-gallon steel heating oil tank (HOT) near the waste oil tank displayed corrosion and evidence of holes on the bottom of the tank and Mr. Parker requested confirmation soil sampling in the vicinity of the HOT, after excavation of obvious PCS. These confirmation soil samples came back clean without any indication of PHC contamination above MTCA Method A Cleanup Levels.

Removal, cleaning, and disposal of the six USTs was performed by Bill Elliott, licensed UST service provider and employee of BMEC. The soil sampling and the site assessment was completed by Yancy Meyer, Washington State-registered UST Site Assessor and Decommissioning Supervisor, and employee of BMEC.

Initial soil sampling beneath the USTs after removal of the tanks and excavation of the pump islands was performed on August 23rd and August 24th, 2017. Krystal Rodriguez from Ecology was on-site for the first day's excavation (August 23) of the fuel dispenser island #1 (north island), PCS stockpiling, and associated stockpile and profile samples.

Excavation was conducted beneath pump island #1 (north island) and consisted of two small excavations: the northeast dispenser excavation to a depth of about 14 feet and the northwest dispenser excavation to a depth of about 12 feet (**Appendix A**). Excavation conducted beneath pump island #2 (south island) was to a depth of about 3 feet. The overall areal dimensions of the dispenser island excavations were limited to the length and width of the pump islands. In all, BMEC removed about 80 cubic yards of PCS from both islands. No excavation has been performed between the two islands, nor has any visible PCS been removed outside of the north dispenser island and south dispenser island excavation pits. Thus, PCS still remains in the sidewalls of each of the three excavation pits. The entire dispenser pump island area between the north fuel dispenser island and south dispenser island encompasses approximately 25 by 28 feet.

Profile sampling in the pump island excavations indicated remaining contamination in the pump island excavation area. The PCS remains stockpiled on-site and these excavations remain open. Five of the removed USTs were intact and in good condition prior to being rendered unusable and cleaned out for recycling as scrap. Approximately 60 gallons of diesel fuel was removed from the large diesel UST interior by ORRCO Oil Recyclers. All USTs, including the leaking tank were transported to Twin City Metals in Kennewick, Washington, for disposal as scrap.

By August 21, 2017, all six USTs had been hauled away as scrap, and the Site was closed. On August 23, 2017, the pump islands were excavated and associated PCS was stockpiled, sampled, and covered. The next day, excavation of the pump islands was completed, and additional

confirmation samples were taken and sent off to the laboratory for analyses. The pump island excavation has not been backfilled, but is covered with plastic. The approximate dimensions of the pump island excavation are 4 feet wide by 11 feet long by 12 feet deep.

3.0 GEOLOGY AND HYDROGEOLOGY

According to the U.S. Department of Agriculture Soil Survey of Benton County, Washington, the Site is underlain by Kennewick silt loam. Kennewick soil is considered a Class B soil, with moderate infiltration rates. These soils are deep and moderately deep, moderately well and well-drained soils with moderately coarse textures. These well-drained soils have an intermediate water holding capacity, and the depth to the water table is more than 6 feet.

Regional geology of the Tri-Cities area consists of hundreds of feet of Miocene Columbia River Plateau Basalt bedrock overlain by Quaternary sediments consisting of wind-blown silts (loess), sand dunes, glacial flood deposits and scour features resulting from the Pleistocene Missoula Floods, and river alluvium originating from the Blue Mountains. During the UST removal activities in August 2017, silt loam was noted throughout the Site at depths ranging from 0 to 14 feet bgs. No groundwater was encountered during the August 2017 field activities. However, on September 25, 2017, BMEC personnel encountered groundwater at depths of 12 to 12.5 feet bgs at two properties less than 0.25 miles north of the Site. Groundwater flow direction beneath the Site is likely to the east toward the Columbia River which is approximately 0.4 miles away. The groundwater flow direction is to the south with a hydraulic hydraulic gradient of 0.007 feet per foot (Chen-Northern, 1993). The estimated groundwater velocities are less than 1 foot per year (Delta Environmental Consultants, 1989).

Little information has been developed regarding he effects of seasonal variations in the groundwater elevations or flow directions and gradients near the Site. The most dramatic changes are likely to occur at recharge and discharge areas such as the Columbia River to the east and the drainage ditch south of the Site. The annual precipitation is 7-9 inches, the mean annual temperature is 53 degrees F., and the frost-free season is about 135 days.

4.0 PROPOSED SCOPE OF WORK

Based on soil samples collected from the eastern sidewall of the excavation beneath the northeast dispenser island, PCS (benzene, toluene, ethylbenzene, xylenes [BTEX], methyl-tert butyl ether [MTBE], and total petroleum hydrocarbons-gasoline range [TPH-G]) exceeding the MTCA Method A Cleanup Levels was detected in soil samples 9-1-SW-01 and 9-1-SW-02 from a depth of 9 feet below ground surface (bgs). Soil samples collected within the excavation from a depth of 12 feet bgs beneath a thin layer (1 to 2 feet) of silty clay, did not contain any detectable PHCs. BMEC proposes to expand the overall excavation to an area approximating the dimensions of the north and south dispenser islands which is approximately 25 feet by 28 feet in area. BMEC proposes to collect confirmation soil samples, in attempt to delineate the full extent of BTEX, MTBE, and

TPH-G contamination in the vadose zone soils. If applicable, groundwater shall be assessed for a similar suite of analytes, as well.

In theory, soil samples shall be collected from within the observed zone of soil contamination (i.e., approximately 9 feet bgs) and analyzed for the noted suite of PHCs (BTEX, MTBE, and TPH-G. BMEC anticipates utilizing a track-hoe or back-hoe to expand the excavation and collect soil samples from the bucket of the machinery rather than allow anyone to enter the excavation during field activities. BMEC proposes to collect the soil samples from a grid defined by sampling points obtained every 20 feet. Field screening efforts (i.e., photo-ionization detector [PID], visual, and olfactoral) shall be used to assess the necessity to keep expanding the excavation in attempt to fully delineate PCS exceeding MTCA Method A Cleanup Levels. Based on clean confirmation soil samples obtained from the bottom of the north dispenser island excavations on September 1, 2017, BMEC anticipates the depth of the overall excavation to be approximately 12 feet bgs.

BMEC plans to utilize the laboratory chosen by the insurance carrier to perform the laboratory analyses. Soil samples shall be collected in the field via Environmental Protection Agency (EPA) Method 5035 and submitted for BTEX and MTBE analysis via EPA Method 8260. Soil samples shall also be collected in 4-ounce jars provided by the laboratory and analyzed for TPH-G via Northwest Method NWTPH-Gx.

Subsequent to fully delineated the extent of soil contamination based on MTCA Method A Cleanup Levels and approval by Ecology, the excavation shall be properly backfilled with clean fill material and compacted. If groundwater is encountered, it shall be sampled and assessed, accordingly.

5.0 DATA QUALITY OBJECTIVES AND QUALITY ASSURANCE

Data quality objectives for the proposed field activities are to generate data of known and documented quality that can be used to determine whether chemicals of potential concern are present above detection levels and at levels that pose an unacceptable risk to receptors. Data will be compared to MTCA Method A Cleanup Levels for Unrestricted Land Use to determine whether these levels are exceeded and to support decision-making regarding the need for further investigation. Samples will be obtained according to standard field methods and will be prepared in accordance with protocol established by the analytical laboratory for containers, preservation, storage and transport to the laboratory. Proper chain-of-custody documentation will be prepared for all samples obtained for laboratory analysis. Appropriate decontamination procedures will be followed to prevent cross contamination of the excavation and sampling equipment between sample locations.

6.0 INVESTIGATION-DERIVED WASTE DISPOSAL

All decontamination water shall be containerized in 55-gallon drums. Each drum shall be properly labeled, sealed, and temporarily staged onsite at a location approved by the client, prior to future

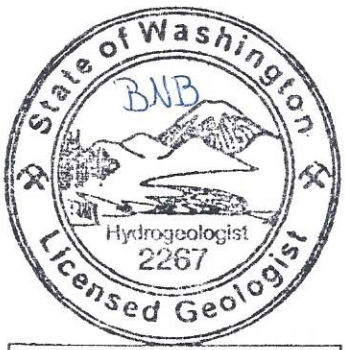
disposal at a licensed waste facility. All newly generated PCS and existing PCS stock-piled onsite from previous field activities shall be hauled away and properly disposed. All gloves, plastic, paper towels, bailers and rope shall be containerized in a plastic trash bag and disposed onsite and standard refuse.

7.0 UNDERGROUND UTILITY LOCATOR

Utility locating services, including private locating services shall be utilized prior to the commencement of any intrusive groundwork (i.e., excavation). Additionally, an attempt will be made to locate all underground utilities via maps provided by the client and/or via the underground utility locating company personnel. All located underground utilities shall be illustrated on a map of the Site and included in the final report.

8.0 STATEMENT OF ENVIRONMENTAL PROFESSIONALS

We shall perform these PCS removal and soil sampling field activities in accordance with generally accepted environmental practices and procedures, as of the date of this work plan. We shall employ the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area. The proposed excavation and soil sampling strategy recommended within this work plan are based upon site conditions we readily observed or which were reasonably ascertainable and present at the time of previous field work performed by BMEC personnel.



Brent N. Bergeron

Expires 1/3/18

Brent N. Bergeron, WA Professional Hydrogeologist/Geologist

9.0 REFERENCES

Blue Mountain Environmental and Consulting Company, Inc., UST Site Closure Report, September 11, 2017.

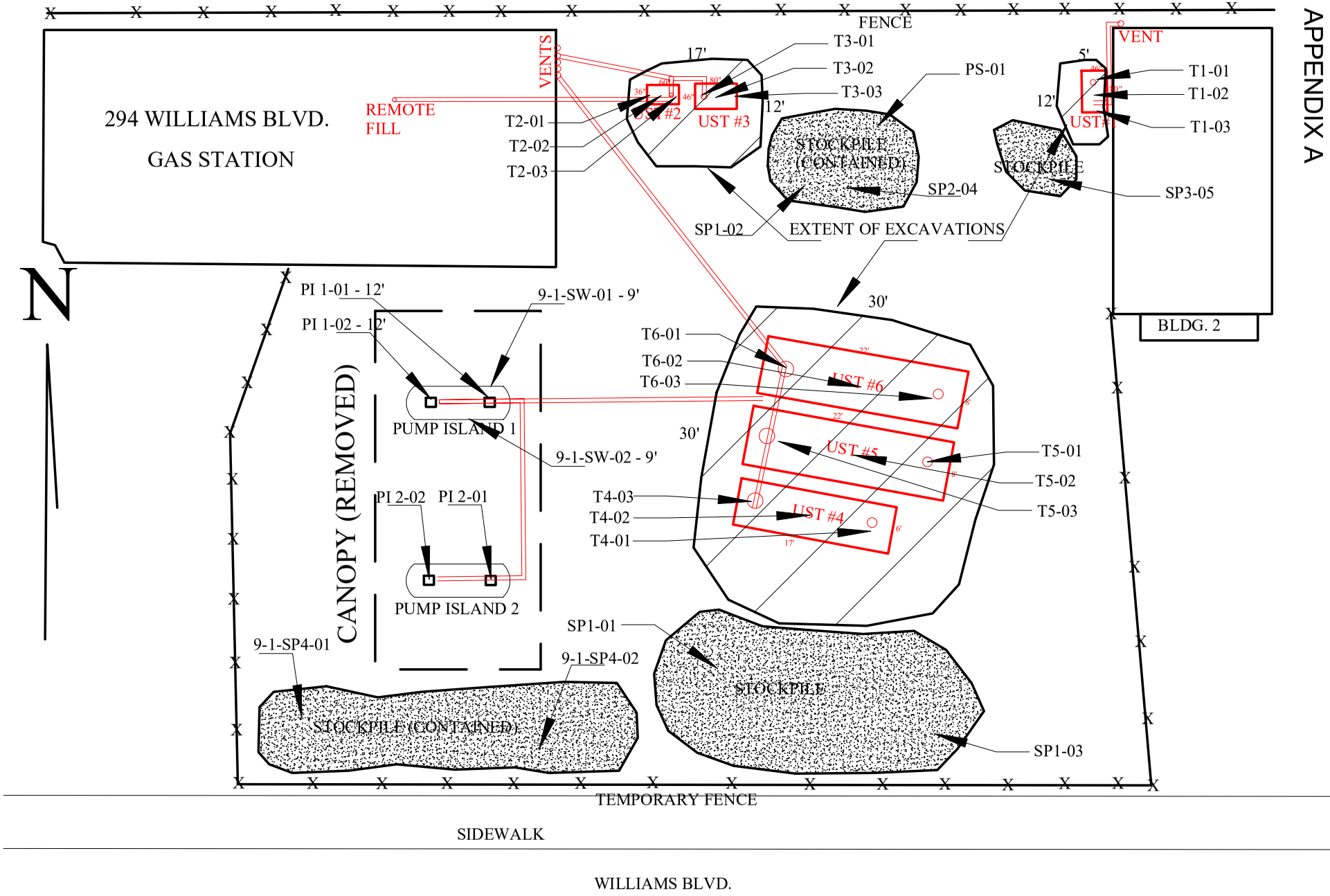
Chen-Northern, Phase I Environmental Site Assessment for Uptown Shopping Center Parking Lot, Richland, Washington, 1993.

Delta Environmental Consultants, Inc., Preliminary Hydrogeologic Assessment, 421 Williams Boulevard, Richland, Washington, March 3, 1989.

Google Maps, 2017.

Huntingdon Engineering and Environmental, Underground Storage Tank Removal Project, Limited Environmental Site Assessment-Uptown Shopping Center, Richland, Washington, June 8, 1994.

APPENDIX A


294 WILLIAMS BLVD.
GAS STATION
FENCE
VENTS
REMOTE FILL
T2-01
T2-02
T2-03
17'
T3-01
T3-02
T3-03
UST #2
UST #3
12'
PS-01
STOCKPILE (CONTAINED)
SP2-04
SP1-02
EXTENT OF EXCAVATIONS
5'
VENT
T1-01
T1-02
T1-03
12'
UST #1
STOCKPILE
SP3-05
BLDG. 2
N
PI 1-01 - 12'
PI 1-02 - 12'
9-1-SW-01 - 9'
CANOPY (REMOVED)
PUMP ISLAND 1
9-1-SW-02 - 9'
PI 2-02
PI 2-01
PUMP ISLAND 2
30'
T6-01
T6-02
T6-03
UST #6
30'
UST #5
T5-01
T5-02
T5-03
T4-03
T4-02
T4-01
UST #4
9-1-SP4-01
9-1-SP4-02
STOCKPILE (CONTAINED)
SP1-01
STOCKPILE
SP1-03
TEMPORARY FENCE
SIDEWALK
WILLIAMS BLVD.