Excavation Report
For
Presto Convenience Store #25
602 W. 9th Street
Lawrence, KS

KDHE Project Code: U4-023-13799
KDHE Facility ID: 28740
Section 31, Township 12 South, Range 20 East
NW NW SW NW; SW SW NW NW; SE SW NW NW
Section 36, Township 12 South, Range 19 East
NE NE SE NE

August 4, 2006

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Prepared for: Kansas Department of Health and Environment
By: Larsen & Associates, Incorporated
P.O. Box 1447
Lawrence, Kansas 66044
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**PROJECT: PRESTO CONVIENCE, L.L.C.   KDHE ID: U4-023-13799**

### TABLE 1.1 - SUMMARY OF WORK COMPLETED

<table>
<thead>
<tr>
<th>TANKS REMOVED</th>
<th>CONTAMINATED SOIL REMOVED (cubic yards)</th>
<th>SOIL TAKEN TO LANDFARM (cubic yards)</th>
<th>SOIL TAKEN TO LANDFILL (tons)</th>
<th>CLEAN SOILS REMOVED (cubic yards)</th>
<th>CLEAN BACKFILL (cubic yards)</th>
<th>EXCAVATED AREA DIMENSIONS (feet)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>3,996.44</td>
<td>0</td>
<td>3,996.44</td>
<td>0</td>
<td>1347.02 (gravel)</td>
<td>80 x 53 x 16</td>
</tr>
</tbody>
</table>

**NOTE:**
- **Tanks Removed:**
  - Number of tanks removed.
- **Soil Taken to Landfarm**:
  - Cubic yards of soil.
- **Soil Taken to Landfill**:
  - Tons of soil.
- **Clean Soils Removed**:
  - Cubic yards of clean soil.
- **Clean Backfill**:
  - Cubic yards of clean backfill.
- **ExcaVated Area Dimensions**:
  - Dimensions of the excavation area in feet.

### TABLE 1.2A - SOIL CHARACTERIZATION

<table>
<thead>
<tr>
<th>LABORATORY METHODS</th>
<th>(BTEX, MTBE, DCA, NAPHTHALENE, EDB: SW846-8260)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPA 6010B</td>
<td>OA1 - SW846-8015</td>
</tr>
<tr>
<td></td>
<td>OA2 - SW846-8015</td>
</tr>
</tbody>
</table>

**LABORATORY METHODS**

<table>
<thead>
<tr>
<th>SAMPLE ID</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE DATE</th>
<th>BENEZENE</th>
<th>TOLUENE</th>
<th>ETHYLBENZENE</th>
<th>TOTAL XYLENES</th>
<th>METHYL ETHENE (MTBE)</th>
<th>ETHYLBENZENE ETHANE (DCA)</th>
<th>NAPHTHALENE</th>
<th>LEAD</th>
<th>TPH GAS RANGE ORGANICS</th>
<th>TPH DIESEL RANGE ORGANICS</th>
<th>FUEL TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS1</td>
<td>11.6'</td>
<td>5/1/06</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>820 [10]</td>
<td>154 [20]</td>
<td>GR</td>
</tr>
<tr>
<td>T3-S2</td>
<td>14'</td>
<td>5/9/06</td>
<td>ND [0.05]</td>
<td>ND [0.05]</td>
<td>ND [0.05]</td>
<td>0.86 [0.05]</td>
<td>ND [0.05]</td>
<td>ND [0.05]</td>
<td>0.50 [0.05]</td>
<td>NA</td>
<td>115 [10]</td>
<td>ND [20]</td>
<td>NA</td>
</tr>
<tr>
<td>UST Excavation</td>
<td>5/10/06</td>
<td>0.66 [0.05]</td>
<td>11.4 [0.05]</td>
<td>3.93 [0.05]</td>
<td>23.0 [0.05]</td>
<td>ND [0.05]</td>
<td>ND [0.05]</td>
<td>4.96 [0.05]</td>
<td>ND [5.00]</td>
<td>317 [10]</td>
<td>76 [20]</td>
<td>GR</td>
<td></td>
</tr>
<tr>
<td>UST EXC S-3</td>
<td>17'</td>
<td>5/11/06</td>
<td>ND [0.05]</td>
<td>10.9 [0.05]</td>
<td>4.64 [0.05]</td>
<td>20.8 [0.05]</td>
<td>ND [0.05]</td>
<td>ND [0.05]</td>
<td>3.63 [0.05]</td>
<td>9.99 [5.00]</td>
<td>1,070 [10]</td>
<td>99 [20]</td>
<td>GR</td>
</tr>
<tr>
<td>UST EXC S-4</td>
<td>15'</td>
<td>5/11/06</td>
<td>ND [0.05]</td>
<td>1.20 [0.05]</td>
<td>1.56 [0.05]</td>
<td>6.60 [0.05]</td>
<td>ND [0.05]</td>
<td>ND [0.05]</td>
<td>1.66 [0.05]</td>
<td>11.4 [5.00]</td>
<td>562 [10]</td>
<td>34 [20]</td>
<td>GR</td>
</tr>
<tr>
<td>TIER 2 RBSL</td>
<td>Residential</td>
<td>9.8 n</td>
<td>930 n</td>
<td>650 s</td>
<td>700 s</td>
<td>2,400 n</td>
<td>4.7 c</td>
<td>100 n</td>
<td>0.09 c</td>
<td>220</td>
<td>2,000 n</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Non Residential</td>
<td>17 c</td>
<td>1,000 s</td>
<td>650 s</td>
<td>700 s</td>
<td>15,000 n</td>
<td>7.3 c</td>
<td>320 n</td>
<td>0.2 c</td>
<td>450</td>
<td>20,000 n</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RES STGW</td>
<td>0.08</td>
<td>40</td>
<td>55</td>
<td>700 s</td>
<td>0.09</td>
<td>0.04</td>
<td>39</td>
<td>0.006 c</td>
<td>39</td>
<td>300</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NON RES STGW</td>
<td>0.08</td>
<td>40</td>
<td>55</td>
<td>700 s</td>
<td>0.09</td>
<td>0.04</td>
<td>140</td>
<td>0.006 c</td>
<td>150</td>
<td>10,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sample Location Descriptions:**
- **SS1:** Collected from the original trench that was dug along the east side of the UST basin in city easement at 11.6 feet bgs.
- **T3-S2:** Collected from the trench along the law office at 14 feet bgs.
- **UST Excavation:** Collected from UST excavation central part of basin.
- **UST EXC S-3:** Collected from the southwestern part of the UST excavation at 17 feet bgs.
- **UST EXC S-4:** Collected from the southcentral part of the UST excavation at 15 feet bgs.

**NOTE:** All soil samples were collected for the landfill solid waste disposal authorization (SWDA). At the direction of KDHE, no confirmation samples were collected.

**TIER 2 RBSL**: Risk Based Screening Levels, from Appendix A of the KDHE RSK Manual.
**GR**: Gasoline Range
**mg/kg or ppm**: milligrams per kilogram or parts per million
**ug/l or ppb**: micrograms per liter or parts per billion
**RES STGW**: Residential Scenario for Soil to Groundwater.
**NON RES STGW**: Non-Residential Scenario for Soil to Groundwater.
**n**: non-carcinogenic risk, HI=1
**c**: carcinogenic risk, risk=1x10⁻⁵
**s**: soil saturation

**NOTE:** Bold concentration exceed the Tier 2 RBSL.

**Reference:** Analytical data sheets for all samples are included in the appendices.
### TABLE 1.2B - GROUNDWATER ANALYTICAL RESULTS

<table>
<thead>
<tr>
<th>LABORATORY METHODS</th>
<th>SAMPLE ID</th>
<th>SAMPLE DATE</th>
<th>BENZENE</th>
<th>TOluENE</th>
<th>ETHYl BENZENE</th>
<th>TOTAl XYLENes</th>
<th>Methyl-tert BUTYL ETHER (MTBE)</th>
<th>1,2-DichloroETHANE (DCA)</th>
<th>NAPTHALene</th>
<th>TPH GAS RANGE ORGANICS</th>
<th>TPH DIESEL RANGE ORGANICS</th>
<th>FUEL TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>T3-S1</td>
<td>5/9/06</td>
<td>10,100</td>
<td>34,900</td>
<td>3,610</td>
<td>15,400</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>3500</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>WW-1</td>
<td>6/5/06</td>
<td>20,200</td>
<td>38,800</td>
<td>3,640</td>
<td>14,900</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>339</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>WW-2</td>
<td>6/5/06</td>
<td>18,200</td>
<td>37,500</td>
<td>3,720</td>
<td>15,700</td>
<td>ND</td>
<td>ND</td>
<td>ND</td>
<td>511</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>TIER 2 RBSL</td>
<td>Res</td>
<td>5 m</td>
<td>1,000 m</td>
<td>700 m</td>
<td>10,000 m</td>
<td>20 h</td>
<td>5 m</td>
<td>100 n</td>
<td>500</td>
<td>500</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td></td>
<td>NonR</td>
<td>5 m</td>
<td>1,000 m</td>
<td>700 m</td>
<td>10,000 m</td>
<td>20 h</td>
<td>5 m</td>
<td>350 n</td>
<td>500</td>
<td>720</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

### TABLE 1.2C - TOXICITY CHARACTERISTIC LEACHING PROCEDURE (TCLP) ANALYSIS

<table>
<thead>
<tr>
<th>SAMPLE ID</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE DATE</th>
<th>TCLP VOLATILES: BENZENE (EPA 1311/8260)</th>
<th>TCLP LEAD (SW 846-1311)</th>
<th>FLASHPOINT - OPEN, SOLIDS (SW 846-1010)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS1</td>
<td>11.6'</td>
<td>5/1/06</td>
<td>0.519 [0.025]</td>
<td>ND [0.08]</td>
<td>&gt;200</td>
</tr>
<tr>
<td>C1</td>
<td>3-12'</td>
<td>5/4/06</td>
<td>ND [0.025]</td>
<td>ND [0.08]</td>
<td>&gt;200</td>
</tr>
<tr>
<td>UST Excavation</td>
<td>NA</td>
<td>5/10/06</td>
<td>NA</td>
<td>NA</td>
<td>&gt;200</td>
</tr>
</tbody>
</table>

### TABLE 1.2D - PRODUCT IDENTIFICATION SAMPLES

<table>
<thead>
<tr>
<th>PRODUCT ID: TPH</th>
<th>SAMPLE ID</th>
<th>SAMPLE DEPTH</th>
<th>SAMPLE DATE</th>
<th>PRODUCT ID: TPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>OA1 - SW846-8015</td>
<td>Recovery</td>
<td>NA</td>
<td>5/3/06</td>
<td>GR 100%*</td>
</tr>
<tr>
<td>OA2 - SW846-8015</td>
<td>Unleaded T</td>
<td>NA</td>
<td>5/3/06</td>
<td>GR 100%</td>
</tr>
<tr>
<td></td>
<td>Premium T</td>
<td>NA</td>
<td>5/3/06</td>
<td>GR 100%</td>
</tr>
</tbody>
</table>

### TABLE 1.2 ABBREVIATIONS AND REFERENCES

- **n**: non-carcinogenic risk, HI=1
- **c**: carcinogenic risk, risk=1x10-5
- **s**: soil saturation
- **mg/kg or ppm**: milligrams per kilogram or parts per million
- **ug/l or ppb**: micrograms per liter or parts per billion
- **GR**: Gasoline Range
- **GR***: Sample fits Unleaded product more closely than Premium.

**NA**: Not analyzed.

**ND**: Not detected above the method detection limit in parenthesis.

**RES STGW**: Residential Scenario for Soil to Groundwater.

**NON R STGW**: Non-Residential Scenario for Soil to Groundwater.

**RBSL**: Risk Based Screening Levels, from Appendix A of the KDHE RSK Manual.

**NOTE**: Bold concentration exceed the Tier 2 RBSL.

**NOTE**: Sample T3-S1 was collected from the trench at 842 Louisiana.

**NOTE**: Samples WW-1 and WW-2 were collected from the trench at 838 Louisiana.

**NOTE**: Samples were analyzed for ten additional volatile compounds which were below detection limits.

**Reference**: Analytical data sheets for all samples are included in Appendix 3.
FIGURE 1 – TOPOGRAPHIC MAP

PROJECT: Presto Convenience Store #25
602 W 9th Street
Lawrence, KS
KDHE ID: U4-023-13799

SOURCE: Lawrence West, KS Quadrangle;
Lawrence East, KS Quadrangle
Sec. 31, Township 12S, Range 20E
NW NW SW NW, SW SW NW NW &
SE SW NW NW
Sec. 36, Township 12S, Range 19E
NE NE SE NE

LARSEN & Associates, Inc.
P.O. Box 1447 Lawrence, KS 66044
Office: 785.841.8707    Fax: 785.865.4282
ENVIRONMENTAL CONSULTANTS
FIGURE 2.3 - AREA BASE MAP

PROJECT:
Presto Convenience Store #25
602 W 9th Street
Lawrence, KS
KDHE ID: U4-023-13799

DATE: 5/1/06

LEGEND

Approximate Size & Location of Active UST Basin & Pump Islands
Approximate Location of Former UST Basin

- Monitoring Well (5/8-16/06)

W - Water (3 - 4 ft BGS)
G - Gas (1.5 - 2 ft BGS)
FQ - Fiber Optic (Min. 30" BGS)
SS - Storm Sewer (2 - 6 ft BGS)
QH - Overhead Lines

NOTE: Not all monitoring wells are shown; there are a total of 25 monitoring wells associated with the Presto Convenience site.

NOTE: Utility depths and locations are approximate.
FIGURE 2.4 - EXCAVATION MAP

PROJECT:
Presto Convenience Store #25
602 W 9th Street
Lawrence, KS
KDHE ID: U4-023-13799

LEGEND

Approximate Size & Location of Active UST Basin & Pump Islands
Approximate Location of Former UST Basin
Monitoring Well (5/8-16/06)
Extent of UST Excavation (5/1-29/06)

NOTE: Not all monitoring wells are shown; there are a total of 25 monitoring wells associated with the Presto Convenience site.

Larsen & Associates, Inc., Lawrence, KS (785) 841-8707
Site Photographs (August 1, 2006)

Photograph 1

View of entire Presto facility, facing west.

Photograph 2

View of entire Presto facility, facing north-northwest.
Site Photographs Prior to Excavation (May 1, 2006)

Photograph 3

Photograph 4

Photograph 3:  Approximate location of former UST basin, facing east.
Photograph 4:  Approximate location of former UST basin, facing southwest.
Excavation Photographs

Photograph 5 (May 8, 2006)

Photograph 6 (May 9, 2006, ~3:00pm)

Photograph 5: View of removed UST, facing west-northwest.
Photograph 6: Location of original UST basin, facing north-northwest.
Excavation Photographs (May 16, 2006, ~1:30pm)

**Photograph 7:** Extent of excavation, facing northwest.

**Photograph 8:** View of gravel fill material and clay layer, facing southwest
Photograph 9: Extent of excavation, facing north-northeast.
Photograph 10: View of excavation prior to installation of new tank, facing north.
Excavation Photographs

Photograph 11

Installation of new tank, facing west.

Photograph 12

Installation of new tank, facing north.
Excavation Photographs

Photograph 13: View of excavated area and pump islands, facing northwest.

Photograph 14: View of SVE piping in excavated area, facing west.
Photograph 15: View of tank basin after excavation activities, facing northeast.

Photograph 16: View of tank basin after excavation activities, facing west.