CITY OF HOUSTON

PUBLIC WORKS AND ENGINEERING
PLANNING & DEVELOPMENT DIVISION

Application for Approval of Municipal Setting Designation

APPLICANT INFORMATION

Additional Applicant, see attached.

Applicant's Name: 1216 Houston Avenue, Ltd.

☐ Individual ☑ Private Entity ☐ Public Entity ☐ Non-Profit Entity ☐ Other

Address: 1520 Oliver Street, Suite 202 (Street) Houston (City) TX (State) 77007 (Zip)

Phone No.: 713-961-3877 Fax No.: 713-292-6990

Email:

Contact Information

Name of Contact: Frank M. K. Liu

Title: President

Address: 1520 Oliver Street, Suite 202 (Street) Houston (City) TX (State) 77007 (Zip)

Phone No.: 713-691-3877 Fax No.: 713-292-6990

Email: frankl@lovetthomes.com

SITE INFORMATION

0131590000001,0131580000011,0131580000007,0131580000002,0131580000015

Site HCAD No(s): 0131580000001, 0131580000018, 0131580000014, 0131580000012, 0131580000013

Site Name: Former Triple D Uniform Supply and City of Houston Impound Lot

Site Size: 4.504 acres

Site Address: 1216 Houston Avenue / 1300 Dart Street (Street) Houston (City) TX (State) 77007 (Zip)

(List all owners – additional sheet is attached, if needed)

Owner: 1216 Houston Avenue, Ltd.

Owner Address: 1520 Oliver Street, Suite 202 (Street) Houston (City) TX (State) 77007 (Zip)

Name of Contact: Helen Ghozali

Title: Vice President of the General Partner of 1216 Houston Avenue, Ltd.

Organization: 1216 Houston Ave., Ltd.

Phone No.: 713-961-3877 Fax No.: 713-292-6990

Email: heleng@lovetthomes.com

Additional Owner List

(Cont'd from pg. 2)

Owner: City of Houston, General Services Department

Owner Address: 900 Bagby Street | Houston | TX | 77002
(Street) (City) (State) (Zip)

Name of Contact: Gabriel Mussio

Title: Division Manager, Environmental Management Section

Organization: City of Houston General Services Department

Phone No.: 832-393-8079 Fax No.: 832-393-8009

Email: Gabriel.Mussio@houstontx.gov

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Owner: _____

Owner Address: _____
(Street) (City) (State) (Zip)

Name of Contact: _____

Title: _____

Organization: _____

Phone No.: _____ Fax No.: _____

Email: _____

Executive Summary

SKA Consulting, L.P. (SKA), on behalf of 1216 Houston Avenue, Ltd. and the City of Houston, has prepared this Municipal Setting Designation (MSD) Application for approximately 4.504 acres consisting of privately, formerly commercially-developed land, city-owned developed land, and two city-owned streets (Hickory Street and Goliad Street) identified as the "designated property," which is located east of the intersection of Houston Avenue and Dart Street in Houston, Harris County, Texas. The designated property is situated approximately 0.5 miles west of downtown Houston and is bordered by Dart Street to the north, by a railroad-right-of-way to the south, by City of Houston Fire Department Logistics Command (1205 Dart Street) to the east, and by Houston Avenue to the west.

No municipalities, other than the City of Houston, have corporate limits within one-half mile of the boundary of the designated property. In addition, public drinking water is currently available to the designated property and properties located within a one-half mile radius surrounding the designated property by the City of Houston public water supply system.

The designated property is currently developed with three different land uses:

- Vacant land (1216 Houston Avenue parcel, approximately 1.126 acres of formerly commercial land),
- City-owned and operated as a police vehicle impound lot (1300 Dart Street parcel, approximately 2.620 acres), and
- Public streets and rights-of-way (Hickory Street and Goliad Street, approximately 0.758 acres).

Properties in the vicinity of the designated property are predominantly mixed commercial, industrial, and residential. The proposed future use of one parcel of the designated property is residential (1216 Houston Avenue parcel); the remaining parcels are currently anticipated to remain as a police vehicle impound lot (1300 Dart Street parcel) and publicly-owned streets and rights-of-way (Hickory Street and Goliad Street).

According to records obtained from the Texas Commission on Environmental Quality (TCEQ), the Harris-Galveston Subsidence District, and GeoSearch, Inc., approximately 489 registered/permitted water wells are reportedly located within a 5-mile radius of the designated property. Of these, six are reportedly located within a 0.5-mile radius of the designated property. One water well is reportedly located to the northwest (approximately 635 feet), four water wells are located to the southeast (ranging from 1,585 feet to 2,480 feet), and one water well is located to the west (approximately 2,850 feet) from the designated property. The five water wells located to the northwest and to the southeast are reportedly plugged or destroyed. The water well reportedly located to the west was drilled to 300 feet below the ground surface (ft-bgs) and the screened groundwater bearing unit (GWBU) was not reported. However, due to

the distance from the designated property (approximately 2,850 feet) and the location upgradient of the designated property, this well is unlikely to be affected by contaminants present in soil or groundwater at the designated property.

Of the approximately 489 registered/permitted water wells reportedly located within 5 miles of the designated property, approximately 14 are reportedly owned or operated by a public retail water utility. In addition, 2 of the 14 water wells reportedly located within 5 miles of the designated property are reportedly owned by municipalities or institutions other than the City of Houston. The other municipalities or institutions are the City of West University Place and Rice University.

Presently, approximately 1.126 acres of the westernmost designated property (1216 Houston Avenue parcel) is owned by 1216 Houston Avenue, Ltd. and is enrolled in the Texas Commission on Environmental Quality (TCEQ) Voluntary Cleanup Program (VCP) as VCP No. 1967. The adjacent approximately 2.620 acres parcel to the east (1300 Dart Street parcel) is owned by the City of Houston and is currently utilized by the City of Houston Police as a vehicle impound lot. In 2003, one acre of the 1300 Dart Street parcel was enrolled in the TCEQ Industrial and Hazardous Waste Corrective Action Program and was assigned IHW No. T1912. An Affected Property Assessment was conducted in August 2003, and a No Further Action Letter for IHW No. T1912 was issued by the TCEQ on July 9, 2004.

The results of the soil assessment activities performed to date on the 1216 Houston Avenue parcel of the designated property have identified detectable concentrations of several volatile organic compounds (VOCs). However, only one detection of methylene chloride and two detections of the C6-C12 fraction of total petroleum hydrocarbons (TPH) have exceeded the Texas Risk Reduction Program (TRRP) Tier 1 residential soil-to-groundwater ingestion ($^{GW}Soil_{Ing}$) protective concentration level (PCL). The laboratory report with the methylene chloride exceedence contains other samples with documented methylene chloride laboratory contamination; therefore, it appears the methylene chloride exceedence should be attributed to contamination from the analytical laboratory and not as a chemical of concern (COC). Also, none of the soil detections exceed the TRRP Tier 1 non-ingestion PCLs (total soil combined, $^{Tot}Soil_{Comb}$ or soil vapor inhalation, $^{Air}Soil_{Inh\text{-}V}$).

The results of the groundwater assessment activities performed to date have identified detectable concentrations of several VOCs and the C6-C12 fraction of TPH. However, recent laboratory analytical results indicate that only tetrachloroethene (PCE) and trichloroethene (TCE) exceed their respective TRRP Tier 1 residential groundwater ingestion ($^{GW}GW_{Ing}$) PCLs. The source area of the PCE groundwater PCL exceedence (PCLE) zone appears to be located in the vicinity of monitoring well MW-5B located on the 1216 Houston Avenue parcel. The PCLE zone extends across the 1300 Dart Street parcel to the property adjacently east at 1205 Dart Street. This property (1205 Dart Street) is owned by the City of Houston (the same owner as the 1300 Dart Street parcel of the designated property) and is currently utilized as the Fire

Department Logistics Command. The TCE and PCE groundwater PCLE zones are fully delineated within the designated property. None of the groundwater detections exceed the TRRP Tier 1 non-ingestion PCLs (groundwater vapor inhalation, ${}^{Air}GW_{Inh-V}$).

The following Items "A" through "Z" provide the requested documentation corresponding to the Items in the attached City of Houston MSD Application checklist. Supporting documentation for certain Items are attached and included with the Item's corresponding Appendix.

Appendix B – Property Use

The following is a description of the current land use, and, to the extent known, the anticipated uses of the designated property and surrounding properties located within 500 feet of the designated property boundary.

Current and Anticipated Land Use of the Designated Property

The designated property consists of four parcels with two different owners totaling approximately 4.504 acres:

- The parcel addressed at 1216 Houston Avenue contains ±1.126 acres of undeveloped (formerly commercial) land, privately owned by 1216 Houston Ave, Ltd.;
- The parcel addressed at 1300 Dart Street contains ±2.620 acres of developed land, owned by the City of Houston and utilized by the Houston Police Department for a vehicle impound lot; and
- Two parcels, each including a public street and rights-of-way; Hickory Street (±0.311 acres) and Goliad Street (±0.447 acres).

The designated property is located on the east side of Houston Avenue and to the south of Dart Street in Houston, Harris County, Texas (***Figure C.1***). The designated property is located approximately 0.5 miles northwest of downtown Houston, Texas. The designated property is bordered to the north by commercial, industrial, and residential property and Dart Street, to the south by a Union Pacific railroad right-of-way, to the east by city-owned property occupied by the City of Houston Fire Department, and to the west by Houston Avenue. A metes and bounds description of the designated property is included in ***Appendix A***.

The designated property is located in the White Oak Bayou Watershed. According to the Federal Emergency Management Agency (FEMA) Federal Flood Insurance Rate Map (FIRM) for the area containing the designated property, the designated property is located within Flood Zone X (unshaded) and is outside the 0.2% annual chance floodplain areas. A watershed map and a floodplain map of the area containing the designated property are included as ***Figures C.2*** and ***C.3***, respectively.

Approximately 70 percent of the designated property is covered by concrete or asphalt pavement. The 1300 Dart Street parcel is developed with driveways, sidewalks, parking areas, and commercial buildings, although the paving throughout much of the 1300 Dart Street parcel is in poor condition. The road parcels (Hickory Street and Goliad Street) are both asphalt-paved streets. The remainder of the designated property (the 1216 Houston Avenue parcel) is unpaved and covered by vegetation. The structures and features formerly present on the 1216 Houston Avenue parcel were demolished in 2006. The proposed future use of the 1216 Houston Avenue parcel is residential.

The 1216 Houston Avenue parcel is enrolled in the Texas Commission on Environmental Quality (TCEQ) Voluntary Cleanup Program (VCP) as ID No. 1967 under the TCEQ Texas Risk Reduction Program (TRRP) for adverse environmental impacts identified in connection with the former on-site chlorinated solvent dry cleaning operations. The former use of the 1216 Houston Avenue parcel is discussed further in ***Appendix J***.

The current land use of the 1300 Dart Street parcel is an impound lot utilized by the City of Houston Police Department, and contains or contained the following improvements:

- two vehicle parking lots for the storage of impounded, wrecked, and burned vehicles;
- a guard trailer, vehicle examination building, and two parking canopies;
- a former belowground oil/water separator on the western portion of the property;
- a former vehicle crushing area in the central portion of the property; and,
- a fleet maintenance building containing mechanic bays.

The proposed future use of the 1300 Dart Street parcel of the designated property is anticipated to remain unchanged. The 1300 Dart Street parcel was enrolled in 2003 in the TCEQ Industrial and Hazardous Waste Corrective Action (IHW) Program as IHW No. T1912 for a voluntary cleanup of adverse environmental impacts identified in connection with vehicle crushing and storage operations. This assessment was conducted by Weston Solutions, Inc. and a No Further Action letter was issued by the TCEQ on July 9, 2004.

Current and Anticipated Land Use of the Surrounding Properties

Properties in the vicinity of the designated property are predominantly mixed commercial, industrial, and residential. Commercial buildings, industrial buildings, and single-family residences are located directly north of the 1216 Houston Avenue parcel, followed by Dart Street. Houston Avenue and a Union Pacific Railroad right-of-way are located west and south of the designated property, respectively. The City of Houston Fire Department Logistics Command is located directly east of the designated property at 1205 Dart Street. The 1300 Dart Street parcel is bordered to the north by Dart Street followed by single-family and multi-family residences. A map detailing the land use of the surrounding properties within 500 feet of the designated property is presented as ***Figure C.4***. The future use of the land in the area of the designated property is anticipated to remain mixed commercial, industrial, and residential.

Water Wells

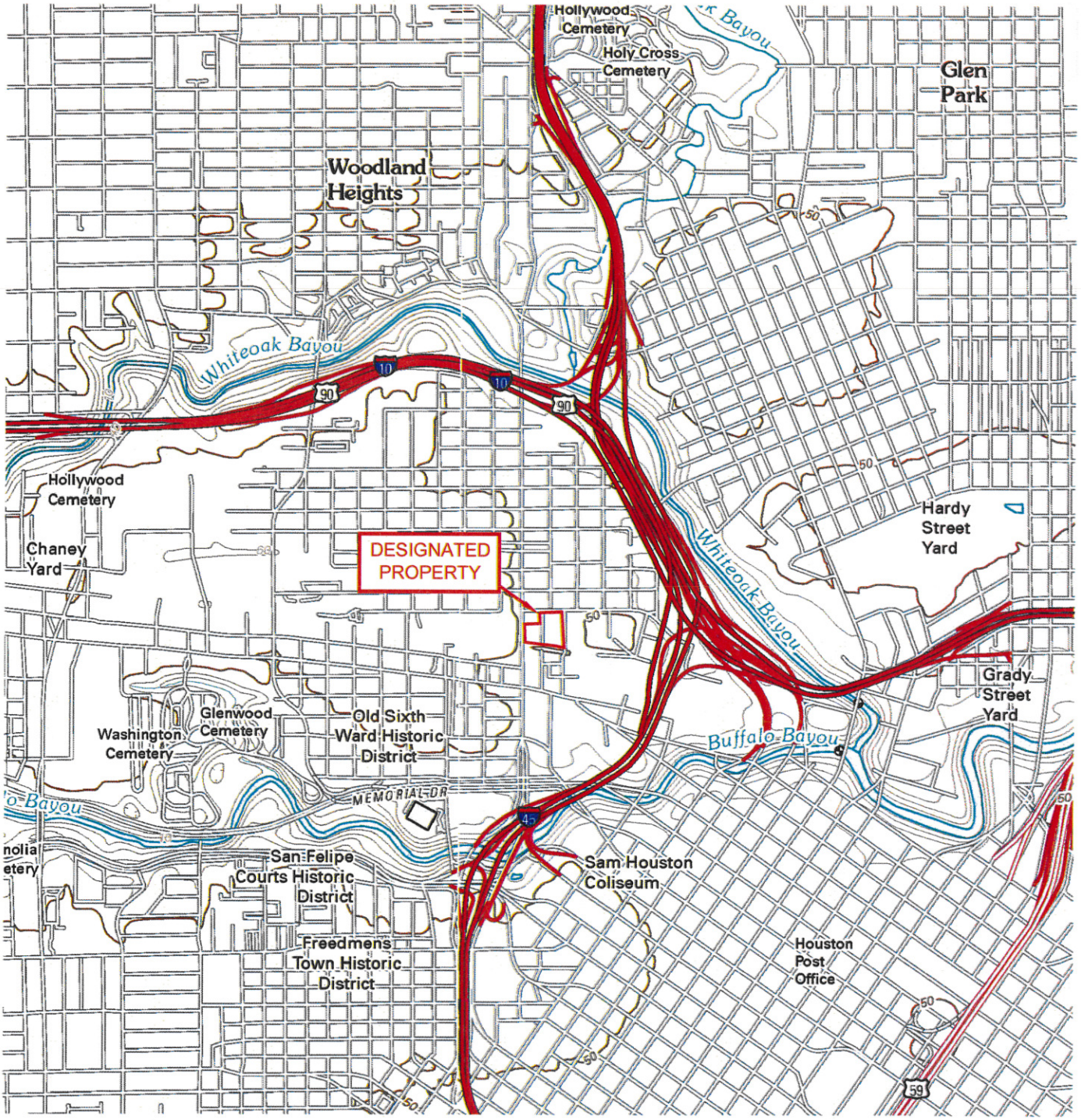
According to records obtained from the TCEQ, the Harris-Galveston Subsidence District, and GeoSearch, Inc., approximately 489 registered/permitted water wells are reportedly located within a 5-mile radius of the designated property. Of these, six are reportedly located within a 0.5-mile radius of the designated property. One water well is reportedly located to the northwest (approximately 635 feet), four water wells are located to the southeast (ranging from 1,585 feet to 2,480 feet), and one water well is located to the west (approximately 2,850 feet) from the designated property. The five water wells located to the northwest and to the southeast were

reportedly plugged or destroyed. The water well reportedly located to the west was drilled to 300 feet below the ground surface (ft-bgs) and the screened groundwater bearing unit (GWBU) was not reported. However, due to the distance from the designated property (approximately 2,850 feet) and the location upgradient of the designated property, this well is unlikely to be affected by contaminants present in soil or groundwater at the designated property.

Appendix C – Site Maps

The following figures are included in ***Appendix C***.

- Figure C.1 Site Location and Topographic Map
- Figure C.2 Watershed Map
- Figure C.3 Floodplain Map
- Figure C.4 Surrounding Land Use Map
- Figure C.5 Soil and Groundwater Sampling Location Map
- Figure C.6 Groundwater Gradient Map April 17, 2012
- Figure C.7 Protective Concentration Level Exceedance (PCLE) Zone Soil Map
- Figure C.8 Protective Concentration Level Exceedance (PCLE) Zone Groundwater Map



REFERENCE USGS 7.5-MINUTE TOPOGRAPHIC QUADRANGLE
HOUSTON HEIGHTS AND SETTEGAST, TEXAS
2010

0 1000 2000 4000

APPROXIMATE SCALE: 1"=2000'

SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON, TEXAS 77080

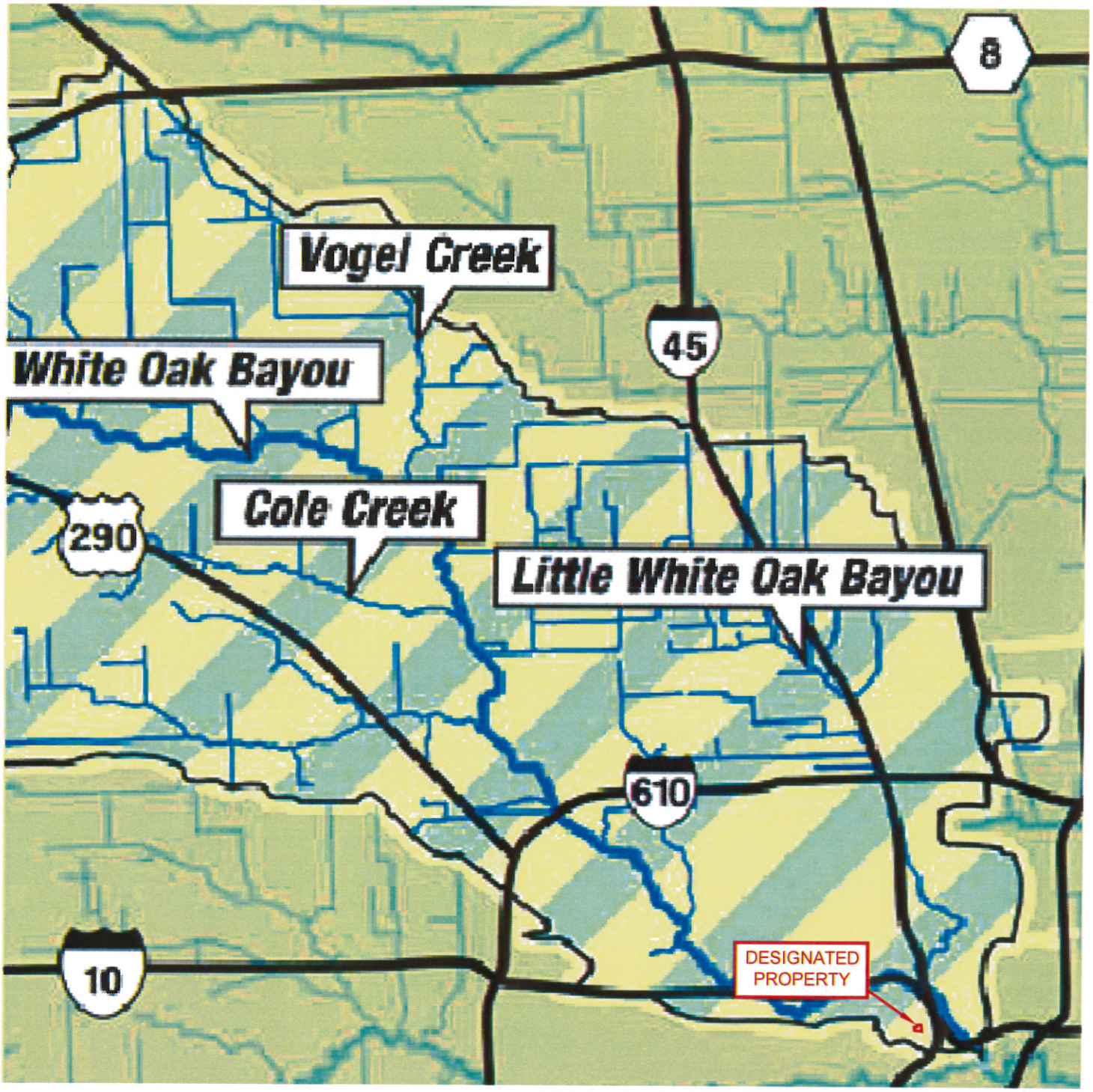
SITE LOCATION AND TOPOGRAPHIC MAP

FIGURE C.1

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\DOC.1.dwg sandersjc NO XREFS ATTACHED



WHITEOAK BAYOU WATERSHED

0 5000 10,000

APPROXIMATE SCALE: 1"=10,000'

SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON, TEXAS 77080
Texas Registered Engineering Firm F-005009
Texas Registered Geoscience Firm 50011

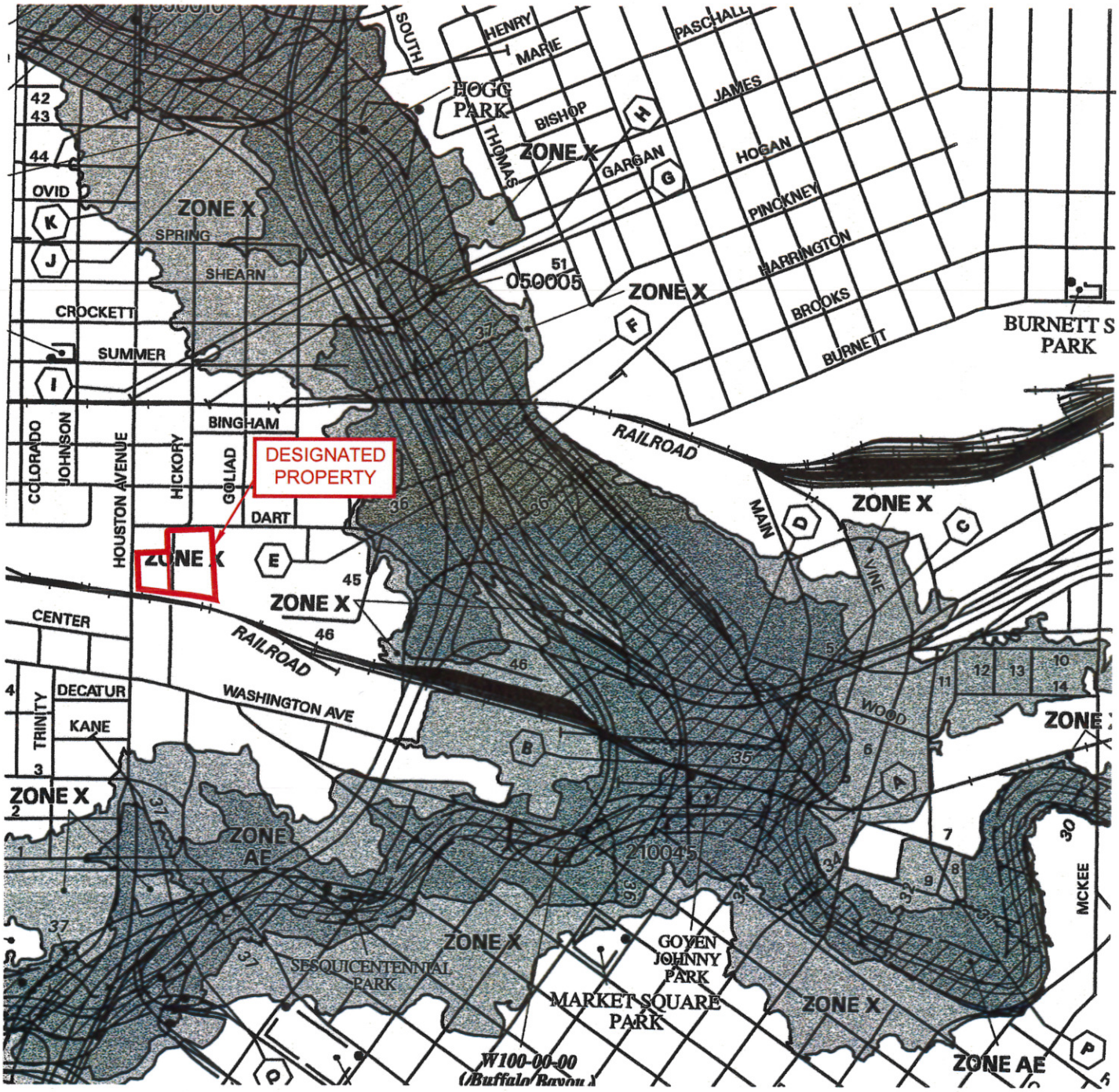
WATERSHED MAP

FIGURE C.2

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\DOC.2.dwg sandersjc NO XREFS ATTACHED



EXPLANATION:

Zone AE - Areas determined to be within the 1% annual chance floodplains for which Base Flood Elevations determined.

Zone X (unshaded) - Areas determined to be outside the 0.2% annual chance floodplains.

Zone X (shaded) - Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depth of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

FEDERAL EMERGENCY MANAGEMENT AGENCY
HARRIS COUNTY, TEXAS

MAP NO. 48201C0690L (06/18/2007)

0 500 1000

APPROXIMATE SCALE: 1"=1000'

SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON, TEXAS 77080

Texas Registered Engineering Firm F-005009
Texas Registered Geoscience Firm 50011

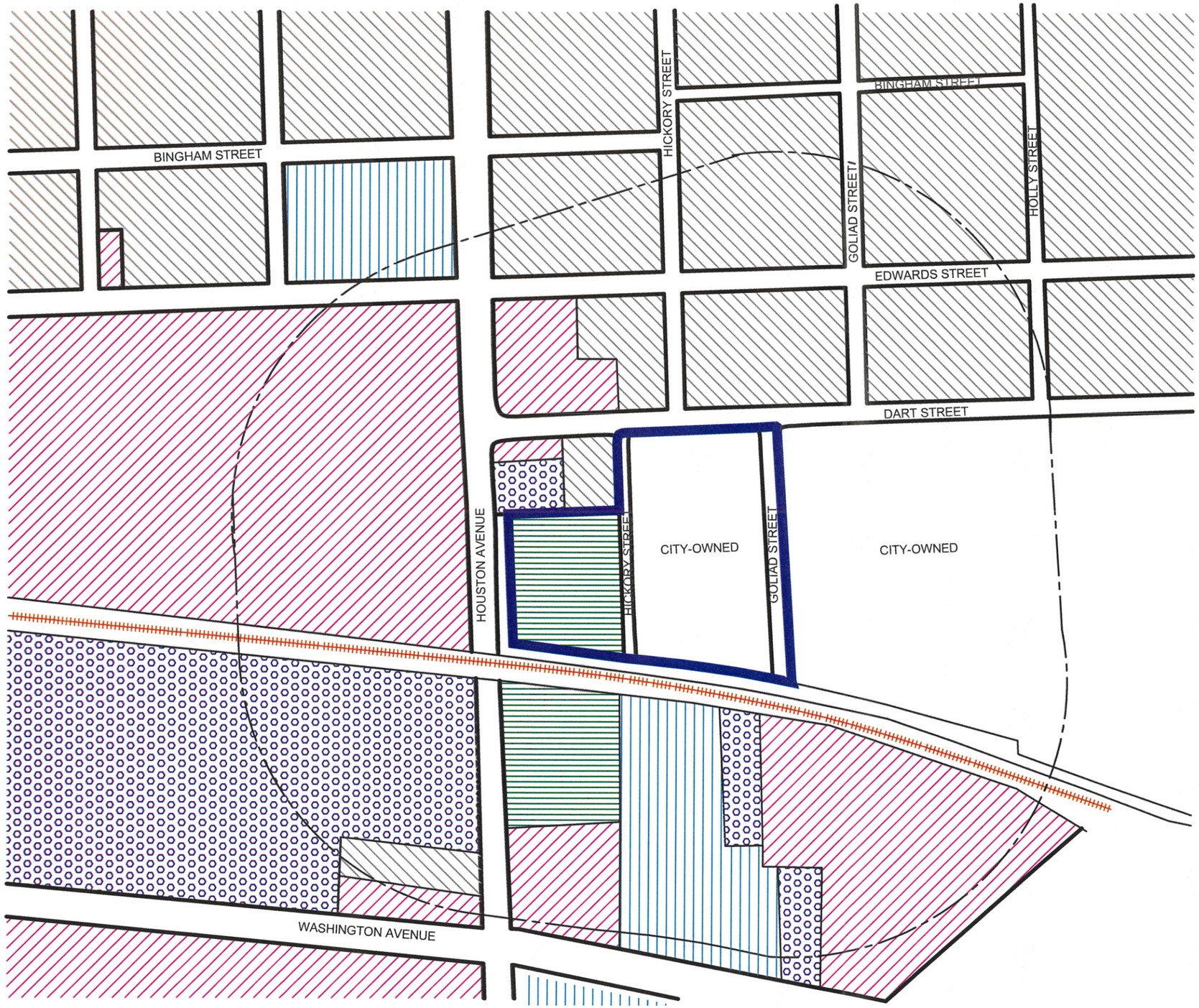
FLOODPLAIN MAP

FIGURE C.3

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\DOC.3.dwg sandersjc NO XREFS ATTACHED



LEGEND

- DESIGNATED PROPERTY BOUNDARY
- ROADS
- RAILROAD TRACKS
- 500' RADIUS

PARCEL LAND USE

- COMMERCIAL
- INDUSTRIAL
- RESIDENTIAL
- OTHER LAND USES (E.G. SCHOOLS, CHURCHES)
- VACANT

0 100 200

APPROXIMATE SCALE: 1"=200'

STATE OF TEXAS
PAUL MICHAEL SCHULTZ
69765
REGISTERED PROFESSIONAL ENGINEER

8/1/12

SKA CONSULTING, L.P.
10260 WESTHEIMER, SUITE 605
HOUSTON TEXAS 77042
Texas Registered Engineering Firm F-005009
Texas Registered Geoscience Firm 50011

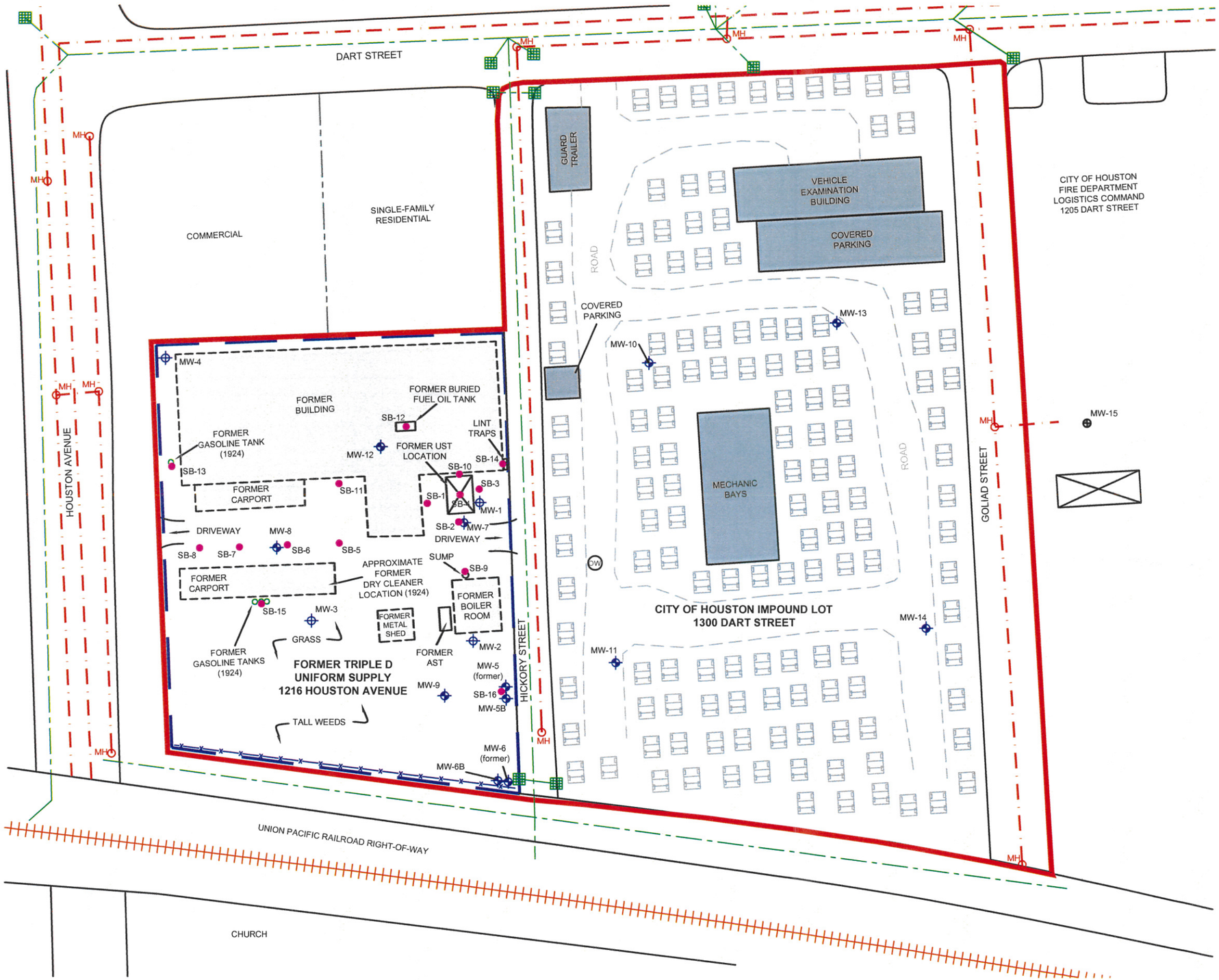
SURROUNDING LAND USE MAP

FIGURE C.4

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\MSD\DOC.4.dwg blissittehs NO XREFS ATTACHED



LEGEND

- DESIGNATED PROPERTY BOUNDARY
- VCP NO. 1967 PROPERTY BOUNDARY
- CHAIN-LINK FENCE
- RAILROAD TRACK
- MW-1 — FORMER TEMPORARY MONITORING WELL LOCATION
- MW-5 — PERMANENT MONITORING WELL LOCATION
- MW-15 — PERMANENT MONITORING WELL LOCATION (INSTALLED NOVEMBER 2011)
- SB-1 — SOIL BORING LOCATION
- BUILDING
- FORMER BUILDING
- ABANDONED CARS
- UST SYSTEM AND FORMER UST SYSTEM
- OW — FORMER OIL/WATER SEPARATOR
- SANITARY SEWER LINE
- MH — MANHOLE
- STORM SEWER LINE
- STORM WATER INLET

NOTE:
SANITARY SEWER AND STORM SEWER LINE LOCATIONS OBTAINED FROM CITY OF HOUSTON GEOGRAPHIC INFORMATION MANAGEMENT SYSTEM.

STATE OF TEXAS
PAUL MICHAEL SCHULTZ
68765
REGISTERED PROFESSIONAL ENGINEER
7/11/12

0 30 60 120
APPROXIMATE SCALE: 1"=60'

ska
SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON TEXAS 77080

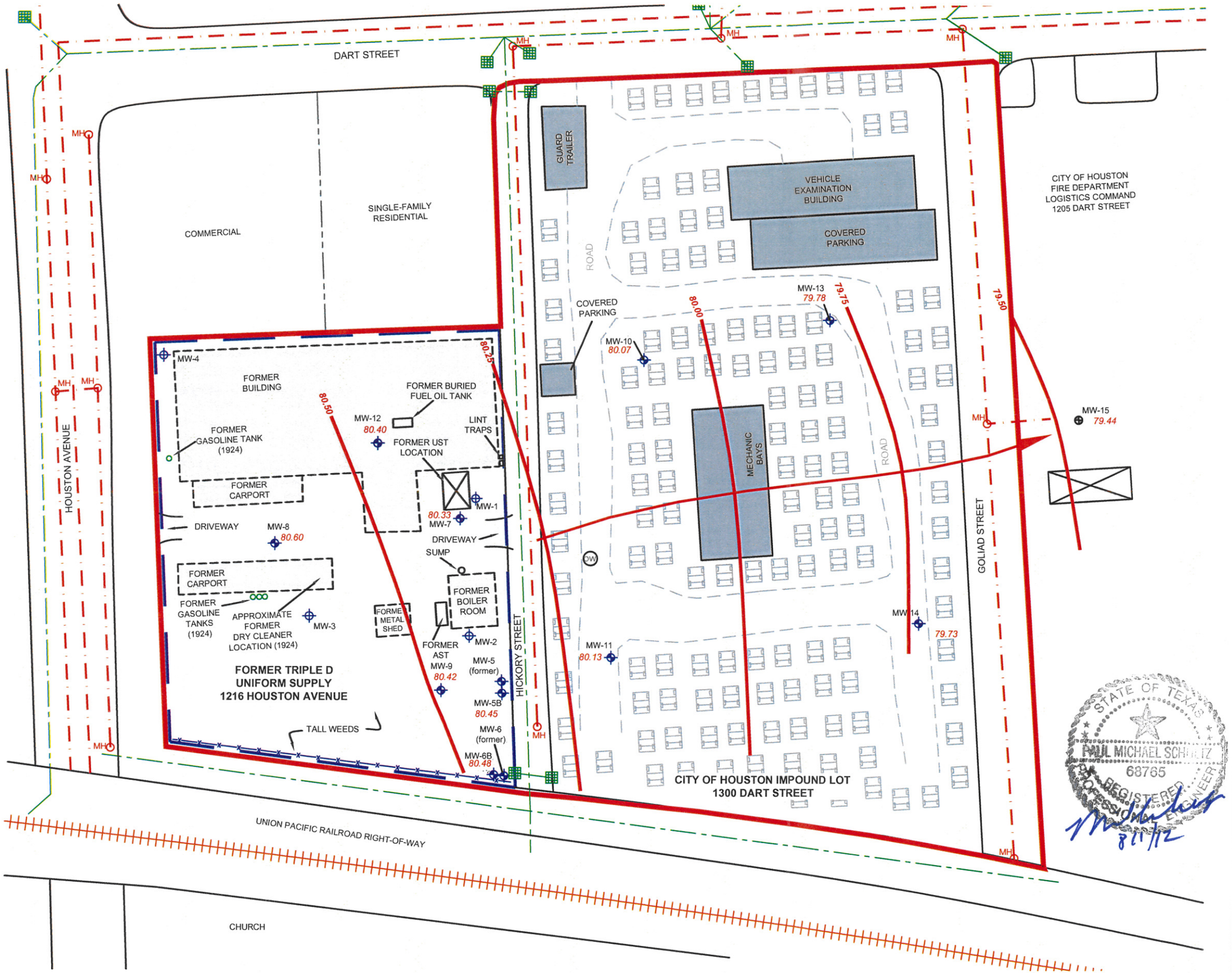
SOIL AND GROUNDWATER SAMPLING LOCATION MAP

FIGURE C.5

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\MSD\DOC.5.dwg sandersjc NO XREFS ATTACHED



LEGEND

- DESIGNATED PROPERTY BOUNDARY
- VCP NO. 1967 PROPERTY BOUNDARY
- CHAIN-LINK FENCE
- RAILROAD TRACK
- MW-1 — FORMER TEMPORARY MONITORING WELL LOCATION
- MW-5 — PERMANENT MONITORING WELL LOCATION
- MW-15 — PERMANENT MONITORING WELL LOCATION (INSTALLED NOVEMBER 2011)
- BUILDING
- FORMER BUILDING
- ABANDONED CARS
- UST SYSTEM AND FORMER UST SYSTEM
- OW — FORMER OIL/WATER SEPARATOR
- SANITARY SEWER LINE
- MH — MANHOLE
- STORM SEWER LINE
- STORM WATER INLET
- 78.25 — GROUNDWATER ELEVATION CONTOUR
- GROUNDWATER FLOW DIRECTION

NOTE:
SANITARY SEWER AND STORM SEWER LINE LOCATIONS OBTAINED FROM CITY OF HOUSTON GEOGRAPHIC INFORMATION MANAGEMENT SYSTEM.

0 30 60 120

APPROXIMATE SCALE: 1"=60'

STATE OF TEXAS
PAUL MICHAEL SCHULTZ
68765
REGISTERED PROFESSIONAL ENGINEER
8/11/12

SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON TEXAS 77080

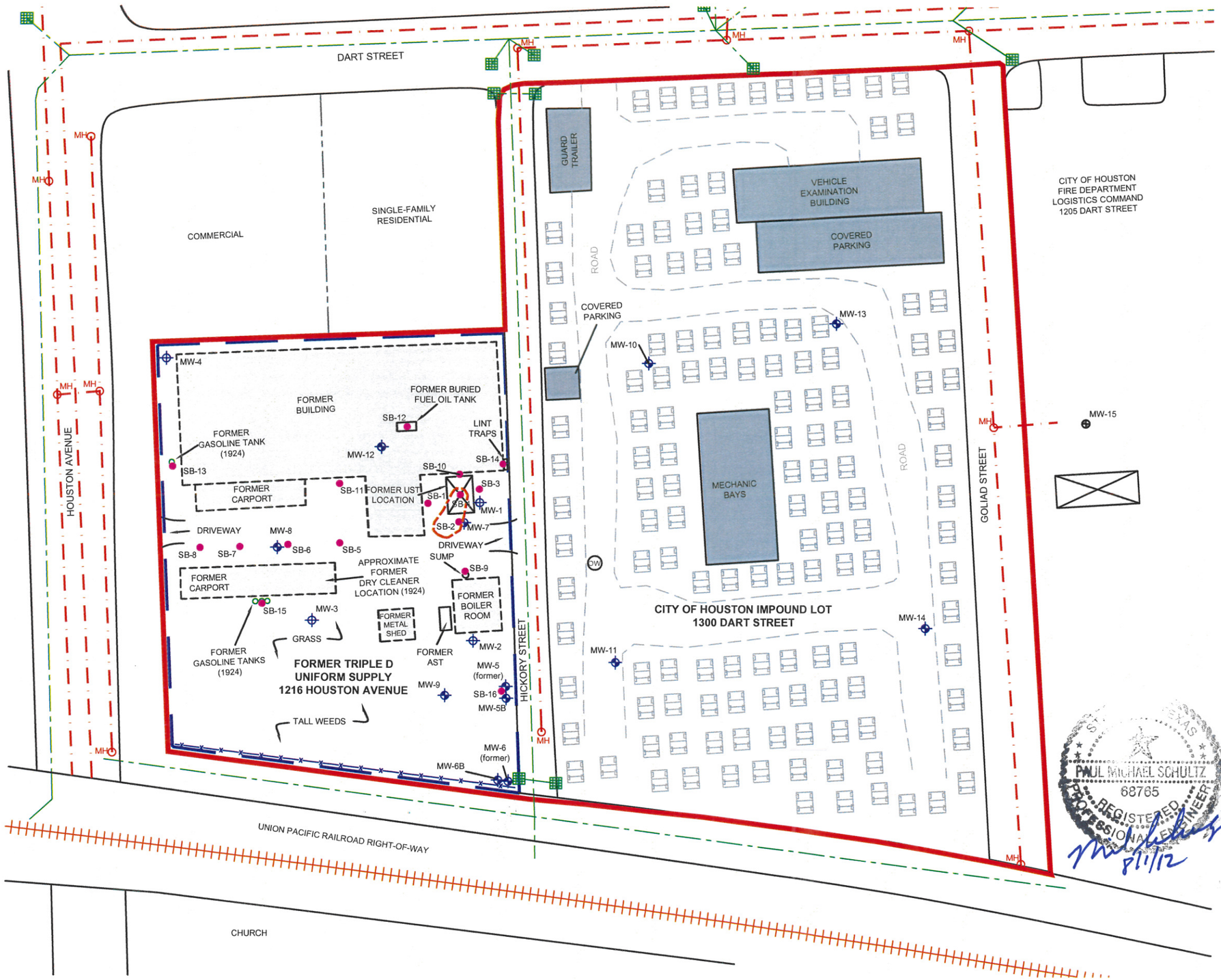
GROUNDWATER GRADIENT MAP
APRIL 17, 2012

FIGURE C.6

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\MSD\DOC.6.dwg sandersjc NO XREFS ATTACHED



LEGEND

- DESIGNATED PROPERTY BOUNDARY
- VCP NO. 1967 PROPERTY BOUNDARY
- CHAIN-LINK FENCE
- RAILROAD TRACK
- MW-1 — FORMER TEMPORARY MONITORING WELL LOCATION
- MW-5 — PERMANENT MONITORING WELL LOCATION
- MW-15 — PERMANENT MONITORING WELL LOCATION (INSTALLED NOVEMBER 2011)
- SB-1 — SOIL BORING LOCATION
- BUILDING
- FORMER BUILDING
- ABANDONED CARS
- UST SYSTEM AND FORMER UST SYSTEM
- OW — FORMER OIL/WATER SEPARATOR
- SANITARY SEWER LINE
- MH — MANHOLE
- STORM SEWER LINE
- STORM WATER INLET
- TOTAL PETROLEUM HYDROCARBONS (TPH) PCLE ZONE

NOTE:
SANITARY SEWER AND STORM SEWER LINE LOCATIONS OBTAINED FROM CITY OF HOUSTON GEOGRAPHIC INFORMATION MANAGEMENT SYSTEM.

0 30 60 120

APPROXIMATE SCALE: 1"=60'

PAUL MICHAEL SCHULTZ 68765 REGISTERED PROFESSIONAL ENGINEER TEXAS

8/1/12

SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON TEXAS 77080

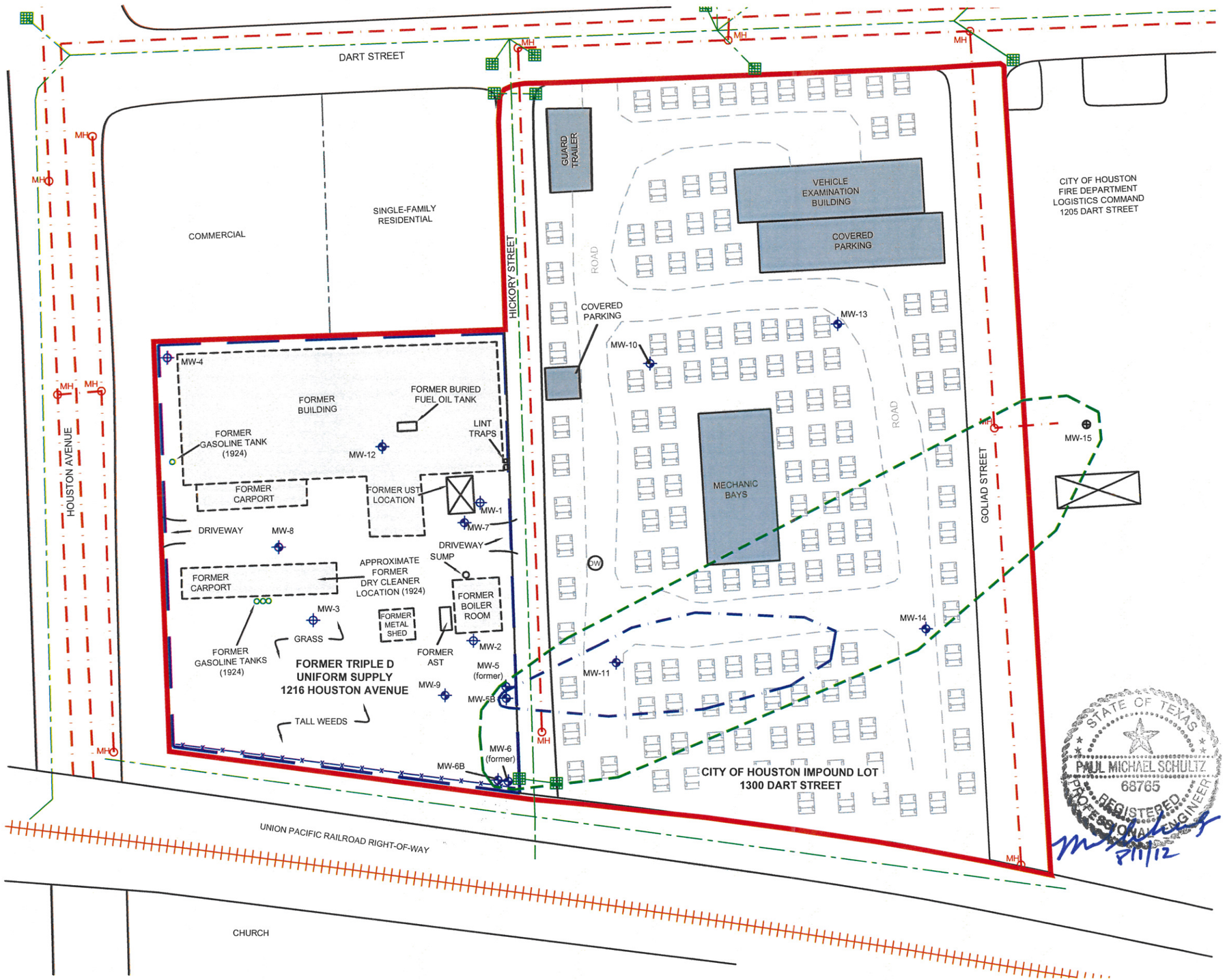
PROTECTIVE CONCENTRATION LEVEL EXCEEDANCE (PCLE) ZONE SOIL MAP

FIGURE C.7

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\MSD\DOC.7.dwg sandersjc NO XREFS ATTACHED



STATE OF TEXAS
PAUL MICHAEL SCHULTZ
68765
REGISTERED PROFESSIONAL ENGINEER
8/11/12

LEGEND

- DESIGNATED PROPERTY BOUNDARY
- VCP NO. 1967 PROPERTY BOUNDARY
- CHAIN-LINK FENCE
- RAILROAD TRACK
- MW-1 — FORMER TEMPORARY MONITORING WELL LOCATION
- MW-5 — PERMANENT MONITORING WELL LOCATION
- MW-15 — PERMANENT MONITORING WELL LOCATION (INSTALLED NOVEMBER 2011)
- BUILDING
- FORMER BUILDING
- ABANDONED CARS
- UST SYSTEM AND FORMER UST SYSTEM
- OW — FORMER OIL/WATER SEPARATOR
- SANITARY SEWER LINE
- MH — MANHOLE
- STORM SEWER LINE
- STORM WATER INLET
- PCE PCLE ZONE
- TCE PCLE ZONE

NOTE:
SANITARY SEWER AND STORM SEWER LINE LOCATIONS OBTAINED FROM CITY OF HOUSTON GEOGRAPHIC INFORMATION MANAGEMENT SYSTEM.

0 30 60 120
APPROXIMATE SCALE: 1"=60'

ska
SKA CONSULTING, L.P.
1515 WITTE ROAD, SUITE 150
HOUSTON TEXAS 77080

PROTECTIVE CONCENTRATION LEVEL EXCEEDANCE (PCLE) ZONE GROUNDWATER MAP

FIGURE C.8

CITY OF HOUSTON MUNICIPAL
SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND
CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

DATE: JULY 2012	JOB NO: 13001-0016	SCALE: AS SHOWN
1 FIRST REVISION -	DRAWN BY: JCS	
2 SECOND REVISION -	CHECKED BY: RCN	
3 THIRD REVISION -	APPROVED BY: JRM	

FILE INFO: G:\2001\13001-0016\Dwg\MSD\DOC.7.dwg sandersjc NO XREFS ATTACHED

Appendix D – PCLE Zone Discussion

This section includes a description of the ingestion protective concentration level exceedence zone (PCLE) and non-ingestion PCLE zone, the level of contamination, and the basic geochemical properties of each contaminant of concern on the designated property.

The following is a description of each contaminant of concern detected within the PCLE zone within the designated property. In accordance with TRRP, PCLs for COCs present in soil and/or groundwater have been developed for human ingestion and non-ingestion exposure pathways based on TRRP Tier 1 residential soil and groundwater PCLs. For purposes of this MSD application and in accordance with City of Houston, Texas Ordinance No. 2007-959 (pertaining to MSDs), the most restrictive of the current TRRP Tier 1 residential soil and groundwater ingestion and non-ingestion PCLs developed for the identified COCs have been compared to the soil and groundwater sampling and analysis results obtained for samples collected from the designated property to determine the current location and extent of TRRP soil and groundwater ingestion and non-ingestion PCL exceedence (PCLE) zones.

The TRRP PCLs utilized for determination of the designated property's soil and groundwater ingestion and non-ingestion PCLE zones are included in ***Tables D.1*** and ***D.2*** in ***Appendix D*** with summaries of all soil and groundwater sampling and analysis results. The locations of all soil and groundwater sampling points are shown on ***Figure C.5***, the groundwater gradient is shown on ***Figure C.6***, and the approximate locations of all TRRP soil and groundwater ingestion and non-ingestion PCLE zones are shown on ***Figures C.7*** and ***C.8***.

A discussion of the designated property's TRRP soil and groundwater ingestion and non-ingestion PCLE zones and a discussion of the geochemical properties of the COCs detected in the designated property's soil and groundwater is included below.

Soil PCLE Zone(s)

Soil sampling and analysis results obtained for soil samples collected from the 1216 Houston Avenue parcel initially indicate two soil ingestion PCLE zones, as one detection of methylene chloride and two detections of the lightest TPH fraction (C_6-C_{12}) are in excess of the applicable TRRP soil ingestion PCLs (TRRP Tier 1 residential $^{GW}Soil_{Ing}$ PCLs). However, the laboratory report which includes the methylene chloride exceedence contains other samples with documented methylene chloride laboratory contamination; indicating the methylene chloride exceedence should be attributed to laboratory contamination. Therefore, there is no methylene chloride PCLE zone in soil on the designated property.

The TPH C_6-C_{12} fraction exceedences appear to represent a soil ingestion PCLE zone, as the samples were collected from soil borings adjacent to a former UST tankhold south of the former building on the 1216 Houston Avenue parcel shown on ***Figure C.7***. The soil analytical data

and TRRP PCLs utilized for determination of the designated property's soil ingestion and non-ingestion PCLE zones are included in ***Table D.1***.

None of the VOCs detected in the soil at the designated property exceed their applicable TRRP non-ingestion soil PCLs (TRRP Tier 1 residential $^{Tot}Soil_{Comb}$ PCLs for surface soils or $^{Air}Soil_{Inh-V}$ PCLs for subsurface soils). As such, no TRRP non-ingestion soil PCLE zones exist at the designated property.

Groundwater PCLE Zones

The January 2012 and April 2012 groundwater sampling and analysis results indicate PCE and TCE are present in the designated property's shallow groundwater in excess of their applicable TRRP groundwater ingestion PCLs (TRRP Tier 1 residential $^{GW}GW_{Ing}$ PCLs). COCs previously above TRRP Tier 1 residential $^{GW}GW_{Ing}$ PCLs include benzene, cis-1,2-dichloroethene (cis-1,2-DCE), vinyl chloride (VC), and TPH; however, these COCs were not detected above TRRP Tier 1 residential $^{GW}GW_{Ing}$ PCLs since November 2008. Therefore, only two TRRP ingestion groundwater PCLE zones currently exist at the designated property. No COCs exceed the applicable TRRP Tier 1 residential non-ingestion groundwater PCLs, which correspond to the $^{Air}GW_{Inh-v}$ pathway.

Groundwater gauging data collected to date from monitoring wells installed in the designated property boundary indicates the flow of shallow groundwater is towards the east-northeast, from the 1216 Houston Avenue parcel (Former Triple D Uniform Supply) towards the 1300 Dart Street Parcel (City of Houston Impound Lot), as shown on ***Figure C.6***.

Further discussion regarding the designated property's current TRRP groundwater ingestion PCLE zones for PCE and TCE follows. The locations of each of the designated property's TRRP groundwater PCLE zones are shown on ***Figure C.8***. The groundwater analytical data and TRRP PCLs utilized for determination of the designated property's groundwater ingestion and non-ingestion PCLE zones are included in ***Table D.2***.

PCE PCLE Zone

The most recent groundwater monitoring data indicate a PCE groundwater ingestion PCLE zone from the southeastern portion of the 1216 Houston Avenue parcel to the eastern adjacent off-site property (1205 Dart Street, owned by the City of Houston). The highest concentrations of PCE were detected in monitoring wells MW-5B (eastern portion of 1216 Houston Avenue parcel) and MW-11 (western portion of 1300 Dart Street parcel). The current extent of the PCE groundwater ingestion PCLE zone is estimated to be approximately 33,100 square feet.

The current maximum PCE value of 0.200 mg/L was detected in the groundwater sample from monitoring well MW-5B, located on the 1216 Houston Avenue parcel, which is enrolled in the VCP (ID No. 1967). The concentration of PCE decreases in the downgradient direction as shown in PCE detections exhibited in monitoring wells MW-11 (0.150 mg/L) and MW-14 (0.035

mg/L) located on the 1300 Dart Street parcel and MW-15 (0.0085 mg/L), which exceeds PCE's applicable TRRP groundwater ingestion PCL (TRRP Tier 1 residential $^{GW}GW_{Ing}$ PCL) of 0.005 mg/L (see ***Figure C.8***).

The current PCE groundwater ingestion PCLE zone is delineated laterally to the north by monitoring wells MW-8 and MW-7 (1216 Houston Avenue parcel) and MW-10 and MW-13 (1300 Dart Street parcel) and to the west by monitoring well MW-9 (1216 Houston Avenue parcel). The southern extent of the PCE PCLE zone appears to be delineated by the stable PCE concentrations observed in groundwater samples collected from monitoring wells MW-5B and MW-6B (1216 Houston Avenue parcel). While the PCE PCLE zone is not fully delineated to the TRRP groundwater ingestion PCL to the east, the groundwater monitoring analytical results indicate decreasing concentrations from the 1216 Houston Avenue parcel and stable concentrations in the off-site monitoring well MW-15, located on the adjacently east property (1205 Dart Street).

No concentrations of PCE have been detected in the groundwater in excess of PCE's applicable TRRP non-ingestion groundwater PCL (the TRRP Tier 1 residential $^{Air}GW_{Inh-V}$ PCL for a 0.5-Acre Source Area) of 500 mg/L. As such, no PCE non-ingestion PCLE zones occur in groundwater at the designated property. In addition, no concentrations of PCE have been detected off-site in excess of the TRRP non-ingestion groundwater PCL.

TCE PCLE Zone

The most recent groundwater monitoring data indicates TCE above the groundwater ingestion PCL was detected in groundwater samples collected from monitoring wells MW-5B (1216 Houston Avenue parcel) and MW-11 (1300 Dart Street parcel). The current maximum concentration of TCE was 0.023 mg/L, detected in monitoring well MW-5B (eastern portion of 1216 Houston Avenue parcel). The current extent of the TCE groundwater ingestion PCLE zone is estimated to be approximately 7,650 square feet.

The TCE groundwater ingestion PCLE zone is fully delineated on the designated property to the north by monitoring wells MW-7 (1216 Houston Avenue parcel) and MW-10 and MW-13 (1300 Dart Street parcel), to the west by monitoring well MW-9 (1216 Houston Avenue parcel), to the east by monitoring well MW-14 (1300 Dart Street parcel), and to the south by monitoring well MW-6B (1216 Houston Avenue parcel).

No concentrations of TCE have been detected in groundwater in excess of TCE's applicable TRRP non-ingestion groundwater PCL (the TRRP Tier 1 residential $^{Air}GW_{Inh-V}$ PCL for a 0.5-Acre Source Area) of 120 mg/L. As such, no TCE non-ingestion PCLE zones occur in groundwater at the designated property. In addition, no concentrations of TCE have been detected off-site in excess of the TRRP ingestion or non-ingestion groundwater PCLs.

Geochemical Properties of COCs in Designated Soil and Groundwater

The groundwater COCs (PCE and TCE) are chlorinated ethenes which occur in the dissolved-phase and no direct evidence of non-aqueous phase liquids (NAPLs) has been observed or detected. In addition, the dissolved phase concentrations do not indicate the presence of NAPL. Due to their high densities (greater than water), NAPLs comprised of chlorinated ethenes are generally referred to as dense NAPLs or DNAPLs. DNAPL-phase COCs have a tendency to migrate vertically and "sink" in GWBUs. Typically, dissolved-phase chlorinated ethenes preferentially migrate with groundwater flow. However, DNAPLs, when present, can migrate along the dip of geologic contacts counter to groundwater flow. No DNAPL-phase COCs have been observed at the monitoring wells installed at the designated property.

Generally, chlorinated ethenes such as those detected in the groundwater at the designated property are colorless liquids at room temperature. In addition, they are relatively volatile, have higher densities than water, relatively low viscosities, relatively low solubilities, and relatively low explosive limits.

TABLE D.1
CITY OF HOUSTON MUNICIPAL SETTING DESIGNATION APPLICATION
SOIL DATA SUMMARY
FORMER TRIPLE D UNIFORM SUPPLY AND CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

			VOC's									RCRA Metals				Total Petroleum Hydrocarbons			
Sample Name	Sample Depth (Ft-Bgs)	Sample Date	Acetone	n-Propylbenzene	Isopropylbenzene	Naphthalene	n-Butylbenzene	sec-Butylbenzene	1,2,4-Trimethylbenzene	4-Isopropyltoluene	Methylene Chloride	Arsenic	Barium	Chromium	Lead	C6-C12	C12-C-28	C28-C35	C6-C35
			Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 6010	Method 6010	Method 6010	Method 6010	Method 1005	Method 1005	Method 1005	Method 1005
			mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
SOIL BORINGS																			
SB1 / MW1	0-2	8/18/2003	<0.0036	0.045	0.019	0.009	0.0063	0.0011	0.15	<0.0005	<0.00052	-	-	-	-	<16.8	<10.0	<10.0	-
SB2 / MW2	0-2	8/18/2003	<0.0036	<0.0005	<0.0005	0.00046	<0.0005	<0.0005	0.0005	<0.0005	<0.00052	-	-	-	-	<16.8	<10.0	<10.0	-
SB-2	20-22	10/26/2006	**0.0174**	**0.00922**	**0.00321 J**	<0.00124	**0.00192 J**	**0.00150 J**	<0.00124	<0.00124	<0.00534	-	-	-	-	<6.67	<14.0	<14.0	<14.0
	22-24	10/26/2006	<0.0105	**0.420**	**0.119**	**0.0421**	**0.236**	**0.109**	<0.00300	<0.00300	<0.00129	-	-	-	-	**77.7**	<13.6	<13.6	**77.7**
SB3 / MW3	0-2	8/18/2003	<0.0036	0.00039	<0.0005	0.00038	<0.0005	<0.0005	0.0012	<0.0005	<0.00052	-	-	-	-	<16.8	<10.0	<10.0	-
SB4 / MW4	0-2	8/18/2003	<0.0036	**0.34**	**0.13**	**0.085**	**0.089**	**0.0098**	**0.9**	0.028	<0.00052	-	-	-	-	<16.8	<10.0	<10.0	-
SB-4	18-20	10/26/2006	<0.00973	<0.00278	<0.00278	<0.00278	<0.00278	<0.00311	<0.00278	<0.00278	<0.0120	-	-	-	-	<6.01	<12.6	<12.6	<12.6
	22-24	10/26/2006	**0.0271**	**0.00598**	<0.00298	**0.0285**	**0.0146**	<0.00334	**0.0254**	<0.00298	<0.0128	-	-	-	-	**88.7**	<13.6	<13.6	**88.7**
SB-5	8-10	10/26/2006	**0.0267**	<0.00120	<0.00120	<0.00120	<0.00120	<0.00135	<0.00120	<0.00120	<0.00517	-	-	-	-	<6.48	<13.6	<13.6	<13.6
	22-24	10/26/2006	<0.00418	<0.00119	<0.00119	<0.00119	<0.00119	<0.00134	<0.00119	<0.00119	<0.00513	-	-	-	-	<6.44	<13.6	<13.6	<13.6
SB-7	16-18	10/26/2006	<0.00418	<0.00120	<0.00120	<0.00120	<0.00120	<0.00135	<0.00119	<0.00119	<0.00513	-	-	-	-	<6.42	<13.5	<13.5	<13.5
	18-20	10/26/2006	<0.00399	<0.00114	<0.00114	<0.00114	<0.00114	<0.00128	<0.00114	<0.00114	**0.00881 (b)**	-	-	-	-	<6.16	<13.0	<13.0	<13.0
SB-9	8-10	10/26/2006	<0.00594	<0.00582	<0.00590	<0.00395	<0.00441	<0.00135	<0.00507	<0.00574	**0.00785**	**0.669**	**56.8**	**3.35**	**5.84**	<6.41	<13.5	<13.5	<13.5
	22-24	10/26/2006	**0.00597**	<0.00118	<0.00118	<0.00118	<0.00118	<0.00132	<0.00118	<0.00118	<0.00507	-	-	-	-	<6.37	<13.4	<13.4	<13.4
SB-10	14-16	10/26/2006	**0.0295**	**0.0170**	**0.00535**	<0.00284	**0.00285 J**	**0.00606**	<0.00284	<0.00284	<0.0122	-	-	-	-	<6.13	<12.9	<12.9	<12.9
	22-24	10/26/2006	<0.0207	**0.373**	**0.0959**	**0.0814**	**0.305**	**0.114**	<0.00592	**0.0107**	**0.0323**	-	-	-	-	<6.40	<13.5	<13.5	<13.5
SB-11	18-20	10/26/2006	<0.0105	<0.00299	<0.00299	**0.00329 J**	<0.00299	<0.00335	<0.00299	<0.00299	<0.0129	-	-	-	-	<6.45	<13.6	<13.6	<13.6
	22-24	10/26/2006	**0.0133**	<0.00121	<0.00121	<0.00121	<0.00121	<0.00135	<0.00121	<0.00121	**0.00798 (b)**	-	-	-	-	<6.52	<13.7	<13.7	<13.7
SB-12	0-3	7/17/2008	**0.032 J**	<0.00072	<0.00072	<0.00072	<0.00072	<0.00087	<0.00072	<0.00087	<0.0020	-	-	-	-	<23	**43.0 J**	<23	**43.0 J**
SB-13	0-3	7/18/2008	<0.0057	<0.00057	<0.00057	<0.00057	<0.00057	<0.00069	<0.00057	<0.00069	<0.0016	-	-	-	-	<18	<18	<18	<18
SB-14	0-3	7/18/2008	<0.0059	**0.0061**	**0.0027 J**	<0.00059	<0.00059	**0.00088 J**	**0.034**	**0.00072 J**	<0.0016	-	-	-	-	<19	**48.0 J**	**68.0**	**116**
SB-15	0-3	7/17/2008	<0.0055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00066	<0.00055	<0.00066	<0.0015	-	-	-	-	<17	<17	<17	<17
SB-16	0-3	7/18/2008	**0.0067 J**	<0.00056	<0.00056	<0.00056	<0.00056	<0.00067	<0.00056	<0.00067	<0.0016	-	-	-	-	<18	<18	<18	<18
MONITORING WELLS																			
MW-5	18-20	8/17/2006	<0.0024	<0.00097	<0.00073	<0.00073	<0.00097	<0.00085	<0.00085	<0.00097	**0.0048 (J)**	-	-	-	-	NA	NA	NA	NA
MW-6	18-20	8/17/2006	<0.0023	<0.00094	<0.00070	<0.00070	<0.00094	<0.00082	<0.00082	<0.00094	**0.0042 (J)**	-	-	-	-	NA	NA	NA	NA
MW-7	54-55	11/16/2006	<0.00415	<0.00119	<0.00119	<0.00119	<0.00119	<0.00133	<0.00119	<0.00119	**0.0118**	-	-	-	-	<6.41	<13.5	<13.5	<13.5
MW-8	56.5-59	11/16/2006	<0.00430	<0.00123	<0.00123	<0.00123	<0.00123	<0.00138	<0.00123	<0.00123	**0.00711**	-	-	-	-	<6.64	<14.0	<14.0	<14.0
MW-12	22.5-25	8/21/2007	<0.00305	<0.00162	<0.000510	<0.00187	<0.00148	<0.00127	<0.00161	<0.000590	**0.00642**	-	-	-	-	<3.78	<10.7	<10.7	<10.7
	59-60	8/21/2007	<0.00321	<0.00171	<0.00053	<0.00197	<0.00156	<0.00134	<0.00170	<0.000620	**0.00647**	-	-	-	-	<3.99	<11.3	<11.3	<11.3
MW-15	67.5-70	11/17/2011	-	-	-	-	-	-	-		<0.0032	-	-	-	-	-	-	-	-
REGULATORY STANDARDS																			
TCEQ TRRP Tier 1 Residential $^{GW}Soil_{Ing}$ PCLs (0.5-acre source area)			**43**	**45**	**350**	**31**	**150**	**85**	**49**	**230**	**0.013**	**5.0**	**440**	**2,400**	**3.0**	**65**	**200**	**200**	**--**
TCEQ TRRP Tier 1 Residential $^{Tot}Soil_{Comb}$ PCLs (0.5-acre source area)			**66,000**	**2,200**	**4,300**	**220**	**3,300**	**3,300**	**150**	**8,200**	**390**	**24**	**8,100**	**33,000**	**500**	**1,600**	**2,300**	**2,300**	**--**
TCEQ TRRP Tier 1 Residential $^{Air}Soil_{Inh-V}$ PCLs (0.5-acre source area)			**600,000**	**6,300**	**9,200**	**270**	**--**	**--**	**160**	**--**	**760**	**--**	**--**	**--**	**--**	**3,100**	**15,000**	**15,000**	**--**
Texas-Specific Soil Background Concentrations			**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**5.9**	**440**	**30**	**15**	**--**	**--**	**--**	**--**

Notes:
"-" indicates not analyzed.
"--" indicates not applicable.
"<" indicates the analyte was not detected by the laboratory at or above the specified reporting limit.
"J" indicates analyte detected below quantitation limit.
"b" indicates target analyte was found in the method blank.

Concentrations in bold exhibit a concentration in excess of the laboratory reporting limit.
Concentrations in bold and highlighted in yellow exhibit a concentration in excess of the TRRP Tier 1 Residential Groundwater PCLs (May 24, 2011) or Texas-Specific Soil Background Concentrations.

TABLE D.2
CITY OF HOUSTON MUNICIPAL SETTING DESIGNATION APPLICATION
GROUNDWATER DATA SUMMARY
FORMER TRIPLE D UNIFORM SUPPLY AND CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

Sample Name	Sample Date	VOCs																				Total Petroleum Hydrocarbon				Total Disolved Solids
		1,2,4-Trimethylbenzene	1,2-Dichloroethane	1,3,5-Trimethylbenzene	Benzene	Chloroform	cis-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene	Methyl tert-butyl ether	Napthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Toluene	Tetrachloroethene	Trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride	Total Xylenes	C6 - C12	C12 - C28	C28 - C35	C6 - C35	
		Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 1005	Method 1005	Method 1005	Method 1005	Method 2540C
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
TCEQ TRRP Tier I Residential $^{GW}GW_{ing}$ PCLs		1.2	0.005	1.2	0.005	0.24	0.070	0.70	2.4	0.24	0.49	1.2	0.98	2.4	0.98	1.0	0.005	0.10	0.005	0.002	10.0	0.98	0.98	0.98	--	--
TCEQ TRRP Tier I Residential $^{Air}GW_{inh-V}$ PCLs		190	33	130	180	20	1,200	30,000	4,400	4,000	320	-	6,000		-	64,000	500	770	120	3.8	10,000	1,800	7,500	7,500	--	--
TEMPORARY MONITORING WELLS																										
SB1 / MW1	8/18/2003	0.150	0.00069 (J)	0.034	0.015	<0.0005	<0.0005	0.120	0.019	<0.0005	0.009	0.0063	0.045	<0.0005	0.0011	0.00027	<0.0005	<0.00052	<0.0005	<0.0005	0.180	18	42	<3.5	-	-
SB2 / MW2	8/18/2003	0.0005 (J)	<0.00068	<0.0005	<0.0005	<0.0005	0.0016	0.00018 (J)	<0.0005	0.00059 (J)	0.00046 (J)	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.100	<0.00052	0.0029	<0.0005	0.00043 (J)	<2.6	<3.5	<3.5	-	-
SB3 / MW3	8/18/2003	0.0012	<0.00068	0.00030 (J)	<0.0005	<0.0005	<0.00053	0.00054 (J)	<0.0005	<0.0005	0.00038 (J)	<0.0005	0.00039 (J)	<0.0005	<0.0005	<0.0005	<0.0005	<0.00052	<0.0005	<0.0005	0.0011	<2.6	<3.5	<3.5	-	-
SB4 / MW4	8/18/2003	0.900	0.00085 (J)	0.530	0.015	<0.0005	<0.00053	0.390	0.130	<0.0005	0.085	0.089	0.340	0.028	0.0098	0.0058	0.00092 (J)	<0.00052	<0.0005	<0.0005	0.520	36	<3.5	<3.5	-	-
PERMANENT MONITORING WELLS																										
MW-5	8/17/2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5B	8/21/2006	<0.00060	<0.00050	<0.00070	<0.00060	0.0047 (J)	<0.00050	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	-	<0.00070	<0.00050	0.050	<0.00060	0.00093 (J)	<0.00060	0.050	-	-	-	-	-
	9/28/2007	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	0.0028 (J)	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	-	<0.00070	<0.00050	0.19	<0.00060	0.0029 (J)	<0.00060	<0.0010	-	-	-	-	-
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	0.0012 (J)	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.00070	<0.00050	0.11	<0.00060	0.0014 (J)	<0.00060	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/26/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0012 (J)	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	0.00060 (J)	<0.00050	<0.00050	<0.00050	0.11	<0.00050	0.0018 (J)	<0.00050	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/17/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00071 (J)	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	0.071	<0.00050	0.00098 (J)	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/12/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	0.0049 J)	<0.0010	<0.0011	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
	4/12/2012	<0.00080	-	<0.00090	<0.0010	<0.0010	0.034	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	-	<0.0016	<0.0010	0.200	<0.0010	0.023	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
MW-6	8/17/2006	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6B	8/21/2006	<0.00060	<0.00050	<0.00070	<0.00060	0.00079 (J)	<0.00050	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	-	<0.00070	<0.00050	0.035	<0.00060	0.0018 (J)	<0.00060	<0.0010	-	-	-	-	-
	9/28/2007	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	0.020	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	-	<0.0070	<0.00050	0.059	0.025	0.0055	<0.00060	<0.0010	-	-	-	-	-
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	0.0076	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.0070	<0.00050	0.068	0.0098	0.011	<0.00060	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/26/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0051	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	0.00055 (J)	<0.00050	<0.00050	<0.00050	0.071	0.0050 (J)	0.010	<0.00050	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/17/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0040 (J)	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	0.064	0.0054	0.010	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/12/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	0.011	<0.0010	0.0018 (J)	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
	4/12/2012	<0.00080	-	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	-	<0.0016	<0.0010	0.032	0.0017 (J)	0.0044 (J)	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	
MW-7	12/8/2006	0.270	<0.000470	0.0117	0.0280	<0.000280	<0.000380	0.168	0.0651	<0.000250	0.0816	0.0258	0.159	0.00511	0.0135	<0.000400	<0.000420	<0.000310	0.000930 (J)	<0.000340	0.0965	<0.480	<0.840	<0.840	<0.840	-
	8/28/2007	0.121	<0.000200	0.0104	0.0620	<0.000260	<0.000150	0.0373	0.0729	<0.000430	0.0529	<0.000140	0.176	0.00452	0.0130	0.00141	0.00142	<0.000120	0.00115	<0.000140	0.00370	<0.449	<0.903	<0.903	<0.903	-
	2/26/2008	0.0014 (J)	<0.00050	<0.00070	0.036	<0.00050	<0.00050	0.028	0.046	<0.00050	0.010	<0.00080	0.12	<0.00070	0.0089	0.00060 (J)	<0.00050	<0.00060	<0.00070	<0.00060	<0.0015	1.4	<0.18	<0.18	1.40	-
	6/26/2008	<0.00050	<0.00050	<0.00050	0.066	<0.00050	<0.00050	0.065	0.075	0.0010 J	0.023	<0.00060	0.16	0.00096 (J)	0.011	0.00078 (J)	<0.00060	<0.00050	<0.00050	<0.00050	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/17/2008	0.0073	<0.00050	0.0041 (J)	0.013	<0.00050	<0.00050	0.0017 J	0.032	<0.00050	0.00094 (J)	0.0028 (J)	0.072	<0.00050	0.0063	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/12/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	0.024	<0.0012	0.0036 (J)	0.0044 (J)	0.058	<0.0013	0.0050 (J)	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	0.51	<0.19	<0.19	0.51	-
	4/12/2012	0.00081 (J)	-	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	0.0091	<0.0012	<0.0010	<0.0020	0.011	-	0.0030 (J)	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	0.23 (J)	<0.19	<0.19	0.23 (J)	-
MW-8	12/7/2006	<0.000350	<0.000470	<0.000330	<0.000380	<0.000280	<0.000380	<0.000370	<0.000350	<0.000250	<0.00101	<0.000380	<0.000310	<0.000370	<0.000390	<0.000400	<0.000420	<0.000310	<0.000380	<0.000340	<0.000950	<0.480	<0.830	<0.830	<0.830	-
	8/28/2007	<0.000100	<0.000200	<0.000140	<0.000180	<0.000260	<0.000150	<0.000140	<0.0000800	<0.000430	<0.000410	<0.000140	<0.000170	<0.000900	<0.000120	<0.000120	<0.000180	<0.000120	<0.000140	<0.000170	<0.000260	<0.446	<0.897	<0.897	<0.897	526
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	<0.00050	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.00070	<0.00050	<0.00050	<0.00060	<0.00070	<0.00060	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/26/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0049 J	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/12/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/11/2012	<0.00080	<0.0010	<0.00090	<0.0010	0.0022 J	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	
MW-9	12/8/2006	<0.000350	<0.000470	<0.000330	<0.000380	<0.000280	<0.000380	<0.000370	<0.000350	<0.000250	<0.00101	<0.000380	<0.000310	<0.000370	<0.000390	<0.000400	0.000930 (J)	<0.000310	0.000880 (J)	<0.000340	<0.000950	<0.480	<0.840	<0.840	<0.840	-
	8/28/2007	0.000610 (J)	<0.000200	<0.000140	<0.000180	<0.000260	<0.000150	<0.000140	<0.0000800	<0.000430	0.00236	<0.000140	0.00850 (J)	<0.0000900	<0.000120	<0.000120	0.00349	<0.000120	<0.000140	<0.000140	<0.000260	<0.446	<0.897	<0.897	<0.897	-
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	<0.00050	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.00070	<0.00050	0.0028 (J)	<0.00060	<0.00070	<0.00060	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/26/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	0.0029 (J)	<0.00050	0.00051 (J)	<0.00050	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/12/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	0.0016 (J)	<0.00050	0.00053 (J)	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/11/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	

TABLE D.2
CITY OF HOUSTON MUNICIPAL SETTING DESIGNATION APPLICATION
GROUNDWATER DATA SUMMARY
FORMER TRIPLE D UNIFORM SUPPLY AND CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

Sample Name	Sample Date	VOCs																				Total Petroleum Hydrocarbon				Total Disolved Solids
		1,2,4-Trimethylbenzene	1,2-Dichloroethane	1,3,5-Trimethylbenzene	Benzene	Chloroform	cis-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene	Methyl tert-butyl ether	Napthalene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Toluene	Tetrachloroethene	Trans-1,2-Dichloroethene	Trichloroethene	Vinyl chloride	Total Xylenes	C6 - C12	C12 - C28	C28 - C35	C6 - C35	
		Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 8260	Method 1005	Method 1005	Method 1005	Method 1005	Method 2540C
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
TCEQ TRRP Tier I Residential $^{GW}GW_{Ing}$ PCLs		1.2	0.005	1.2	0.005	0.24	0.070	0.70	2.4	0.24	0.49	1.2	0.98	2.4	0.98	1.0	0.005	0.10	0.005	0.002	10.0	0.98	0.98	0.98	--	--
TCEQ TRRP Tier I Residential $^{Air}GW_{Inh-V}$ PCLs		190	33	130	180	20	1,200	30,000	4,400	4,000	320	-	6,000		-	64,000	500	770	120	3.8	10,000	1,800	7,500	7,500	--	--
MW-10	8/28/2007	**0.00202**	<0.000200	<0.000140	<0.000180	<0.000260	**0.299**	<0.000140	<0.0000800	<0.000430	**0.00363**	<0.000140	<0.000170	<0.0000900	<0.000120	<0.000120	<0.000180	<0.000120	**0.00102**	<0.000140	<0.000260	<0.449	<0.903	<0.903	<0.903	-
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	**0.025**	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.00070	<0.00050	<0.00050	<0.00060	**0.00094 (J)**	**0.011**	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/26/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	**0.016**	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	**0.0047**	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/13/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	**0.029**	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	**0.0098**	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/10/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	**0.0072**	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	<0.0017	<0.0010	**0.0013 (J)**	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
	4/12/2012	<0.00080	-	<0.00090	<0.0010	<0.0010	**0.0063**	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	-	<0.0016	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
MW-11	8/28/2007	<0.000490	<0.000200	<0.000140	<0.000180	<0.000260	**0.00337**	<0.000140	<0.0000800	<0.000430	<0.000410	<0.000140	<0.000170	<0.0000900	<0.000120	<0.000120	**0.0503**	<0.000120	**0.00174**	<0.000140	<0.000260	<0.445	<0.895	<0.895	<0.895	-
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	**0.0091**	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.00070	<0.00050	**0.13**	<0.00060	**0.0035 (J)**	<0.00060	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/27/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	**0.010**	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	**0.14**	<0.00050	**0.0048 (J)**	<0.00050	<0.0015	<0.18	**7.9**	**14**	**21.9**	-
	11/14/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	**0.0043 (J)**	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	**0.069**	<0.00050	**0.0023 (J)**	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/11/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	**0.013**	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	**0.210**	<0.0010	**0.0046 (J)**	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
	4/11/2012	<0.00080	-	<0.00090	<0.0010	<0.0010	**0.024**	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	-	<0.0016	<0.0010	**0.150**	<0.0010	**0.0091**	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
MW-12	8/28/2007	<0.000100	<0.000200	<0.000140	<0.000180	<0.000260	<0.000150	<0.000150	<0.0000800	<0.000430	<0.000410	<0.000140	<0.000170	<0.0000900	<0.000120	<0.000120	<0.000180	<0.000120	<0.000140	<0.000140	<0.000260	<0.445	<0.896	<0.896	<0.896	-
	2/26/2008	<0.00060	<0.00050	<0.00070	<0.00060	<0.00050	<0.00050	<0.00050	<0.00070	<0.00050	<0.0011	<0.00080	<0.00070	<0.00070	<0.0070	<0.00050	<0.00050	<0.00060	<0.00070	<0.00060	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	6/26/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	**0.00066 (J)**	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.0015	<0.18	<0.18	<0.18	<0.18	-
	11/10/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.0006	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/12/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
MW-13	7/18/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	**0.00090 (J)**	<0.00050	<0.00050	**0.00540**	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.00050	< 0.00060	< 0.00050	**0.00067 (J)**	**0.00051 (J)**	<0.0010	<0.19	<0.19	<0.19	<0.19	-
	11/13/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.00050	< 0.00060	< 0.00050	**0.00085 (J)**	< 0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/10/2012	<0.00080	<0.0010	<0.00090	<0.00090	<0.0015	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	<0.0017	<0.0010	<0.0011	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
MW-14	7/18/2008	<0.00050	**0.00060 (J)**	<0.00050	<0.00050	**0.0027 (J)**	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.00050	**0.029**	< 0.00050	**0.0021 (J)**	<0.00050	<0.0010	<0.18	<0.18	<0.18	<0.18	-
	11/13/2008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00060	<0.00050	<0.00050	<0.00050	<0.00050	**0.030**	< 0.00050	**0.0017 (J)**	<0.00050	<0.0015	<0.19	<0.19	<0.19	<0.19	-
	1/10/2012	<0.00080	<0.0010	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0013	<0.0016	<0.0010	**0.120**	<0.0010	**0.0066**	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
	4/11/2012	<0.00080	-	<0.00090	<0.0010	<0.0010	<0.0025	<0.0011	<0.0012	<0.0012	<0.0010	<0.0020	<0.00080	<0.0010	<0.0016	<0.0010	**0.035**	<0.0010	**0.0020 (J)**	<0.0010	<0.0021	<0.19	<0.19	<0.19	<0.19	-
MW-15	11/21/2011	-	<0.0011	-	-	<0.0010	<0.0025	-	-	-	-	-	-	-	-	-	<0.0017	<0.0010	<0.0011	<0.0010	-	-	-	-	-	-
	1/10/2012	--	<0.0010	-	-	<0.0010	<0.0025	-	-	-	-	-	-	-	-	-	**0.0063**	<0.0010	**0.0019(J)**	<0.0010	-	-	-	-	-	-
	4/17/2012	-	<0.0010	-	-	<0.0010	<0.0025	-	-	-	-	-	-	-	-	-	**0.0085**	<0.0010	**0.0017 J**	<0.0010	-	-	-	-	-	-

Notes:
"-" indicates not analyzed.
"--" indicates not applicable.
"NA" indicates not applicable.
"<" indicates the analyte was not detected by the laboratory at or above the laboratory sample detection limit.
"J" indicates analyte detected below sample quantitation limit.
Concentration- in bold exhibit a concentration in excess of the laboratory reporting limit.
Concentration- in bold and highlighted in yellow exhibit a concentration in excess of the TRRP Tier 1 Residential Groundwater Protective Concentration Levels (PCLs).
TRRP values from Table 3, Tier 1 Groundwater PCLs, May 24, 2011.

Appendix E – COCs in Designated Groundwater

As previously discussed and documented in ***Appendix D***, groundwater sampling and analysis activities performed to date on the designated property indicate the groundwater currently contains concentrations of two COCs that exceed the TRRP ingestion PCLs: PCE and TCE. A brief summary discussion regarding the COCs present in the groundwater of the designated property follows. A more detailed discussion of the COCs and their associated groundwater PCLE zones is provided in ***Appendix D***. Maps showing the current locations and concentrations of COCs in the designated property's groundwater are provided in ***Appendix C*** and summary tables of all groundwater sampling and analysis results obtained for the designated property are provided in ***Appendix D*** as ***Tables D.1*** and ***D.2***.

Ingestion PCLE Zone in Designated Groundwater

Groundwater sampling and analysis activities performed to date indicate the groundwater of the designated property currently contains detectable concentrations of nine VOC COCs. The COCs occur in the dissolved-phase and no direct or indirect evidence of NAPLs has been observed or detected. Of the nine VOC COCs detected on the designated property, two (PCE and TCE) are currently present in excess of the COCs' applicable TRRP groundwater ingestion PCLs (TRRP Tier 1 residential $^{GW}GW_{Ing}$ PCLs). As of April 2012, the maximum concentration for PCE was detected in monitoring well MW-5B, located in the eastern portion of the 1216 Houston Avenue parcel; however, high PCE concentrations were observed from monitoring well MW-11 (1300 Dart Street parcel) in 2008. As discussed in ***Appendix D***, the PCE groundwater ingestion PCLE zone extends off-site to the adjacently east property (1205 Dart Street), owned by the City of Houston; however, the concentrations of PCE generally decrease in the downgradient direction. As of April 2012, the maximum concentration for TCE was detected in monitoring well MW-5B, located in the eastern portion of the 1216 Houston Avenue parcel. As discussed in ***Appendix D***, the TCE groundwater ingestion PCLE zone is fully delineated within the designated property.

Non-Ingestion PCLE Zone in Designated Groundwater

No concentrations of any COCs have been detected in the groundwater of the designated property in excess of applicable TRRP non-ingestion PCLs. As such, no TRRP non-ingestion groundwater PCLE zones exist in connection with the designated property.

Geochemical Properties of COCs in Designated Groundwater

The groundwater COCs (PCE and TCE) are chlorinated ethenes which occur in the dissolved-phase and no direct evidence of NAPLs has been observed or detected. Due to their high densities (greater than water), NAPLs comprised of chlorinated ethenes are generally referred to as dense NAPLs or DNAPLs. DNAPL-phase COCs have a tendency to migrate vertically and "sink" in GWBUs. Typically, dissolved-phase chlorinated ethenes preferentially migrate with groundwater flow. However, DNAPLs, when present, can migrate along the dip of geologic

contacts counter to groundwater flow. No DNAPL-phase COCs have been observed at the monitoring wells installed at the designated property.

Generally, chlorinated ethenes such as those detected in the groundwater at the designated property are colorless liquids at room temperature. In addition, they are relatively volatile, have higher densities than water, relatively low viscosities, relatively low solubilities, and relatively low explosive limits.

Appendix F – Summary of Soil and Groundwater Data

As previously discussed and detailed in ***Appendix D*** and ***Appendix E***, soil sampling and analysis activities performed to date have revealed methylene chloride and the C6-C12 fraction of TPH to be present in excess of the TRRP soil ingestion PCLs; however, the methylene chloride detection appears to be due to laboratory contamination. Groundwater sampling and analysis activities performed to date have revealed historic detectable concentrations of PCE, TCE, cis-1,2-DCE, VC, benzene, and TPH present in excess of the TRRP groundwater ingestion PCLs of the designated property. Summary tables showing the maximum concentrations of COCs detected in soil and groundwater in the vicinity of the designated property since assessment activities began in 2003 are provided in ***Tables F.1*** and ***F.2***. Included with the maximum COC concentrations in ***Tables F.1*** and ***F.2*** are the COC's applicable TRRP PCLs for both ingestion and non-ingestion exposure pathways.

Only two COCs (PCE and TCE) in groundwater at the designated property currently exceed their respective TRRP groundwater ingestion PCLs (the critical TRRP PCLs without an MSD). However, no COCs in soil or groundwater currently exceed their respective TRRP non-ingestion PCLs (critical TRRP PCLs with an MSD).

The locations of all soil and groundwater sampling points are presented on ***Figure C.7***.

TABLE F.1
SUMMARY OF MAXIMUM SOIL CONCENTRATIONS
MUNICIPAL SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

CHEMICAL OF CONCERN	MAXIMUM SOIL CONCENTRATION				CRITICAL TRRP TIER 1 RESIDENTIALSOIL PROTECTIVE CONCENTRATION LEVEL		
	Sample ID	Sample Depth	Sample Date	Detected Concentration (mg/Kg)	Ingestion PCL (Without MSD)	Non-Ingestion PCL (With MSD)	
					${}^{GW}Soil_{Ing}$ (mg/Kg)	${}^{Tot}Soil_{Comb}$ (mg/Kg)	${}^{Air}Soil_{Inh-V}$ (mg/Kg)
TPH (C6-C12)	SB-4	22-24	10/26/06	**88.7**	**65**	1,600	3,100
TPH (C12-C28)	SB-12	0-3	7/17/08	**43 J**	**200**	2,300	15,000
TPH (C28-C35)	SB-14	0-3	7/18/08	**68.0**	**200**	2,300	15,000

NOTE:
1. COCs highlighted in yellow exceed the critical TRRP Tier 1 Residential Soil PCL (applicable TRRP Tier 1 Residential Soil Ingestion PCL) without an MSD; but do not exceed the critical TRRP Tier 1 Residential Soil PCL (applicable TRRP Tier 1 Residential Soil Non-Ingestion PCL) with an MSD.
2. Ingestion PCLs are highlighted in yellow and non-ingestion PCLs are highlighted in green.

TABLE F.2
SUMMARY OF MAXIMUM GROUNDWATER CONCENTRATIONS
MUNICIPAL SETTING DESIGNATION APPLICATION
FORMER TRIPLE D UNIFORM SUPPLY AND CITY OF HOUSTON IMPOUND LOT
1216 HOUSTON AVENUE AND 1300 DART STREET
HOUSTON, HARRIS COUNTY, TEXAS

CHEMICAL OF CONCERN	GROUNDWATER-BEARING UNIT	CURRENT MAXIMUM GROUNDWATER CONCENTRATION			CRITICAL TRRP TIER 1 RESIDENTIALGROUNDWATER PROTECTIVE CONCENTRATION LEVEL	
		Sample ID	Sample Date	Detected Concentration (mg/kg)	Ingestion PCL (Without MSD)	Non-Ingestion PCL (With MSD)
					${}^{GW}GW_{Ing}$ (mg/L)	${}^{Air}GW_{Inh-V}$ (mg/L)
Benzene	First	MW-7	6/26/08	**0.066**	**0.005**	**180**
Tetrachloroethene	First	MW-5B	4/12/12	**0.200**	**0.005**	**500**
Trichloroethene	First	MW-5B	4/12/12	**0.023**	**0.005**	**120**
cis-1,2-Dichloroethene	First	MW-10	8/28/07	**0.299**	**0.070**	**1,200**
trans-1,2-Dichloroethene	First	MW-6B	9/28/07	**0.025**	**0.100**	**770**
Vinyl Chloride	First	MW-10	2/26/08	**0.011**	**0.002**	**3.8**
TPH (C6-C12)	First	SB-4/MW-4	8/18/03	**36**	**0.98**	**1,800**
TPH (C12-C28)	First	SB-1/MW-1	8/18/03	**42**	**0.98**	**7,500**
TPH (C28-C35)	First	MW-11	6/27/08	**14**	**0.98**	**7,500**

NOTE:
1. COCs highlighted in yellow exceed the critical TRRP Tier 1 Residential Groundwater PCL (applicable TRRP Tier 1 Residential Groundwater Ingestion PCL) without an MSD; but do not exceed the critical TRRP Tier 1 Residential Groundwater PCL (applicable TRRP Tier 1 Residential Groundwater Non-Ingestion PCL) with an MSD.
2. Ingestion PCLs are highlighted in yellow and non-ingestion PCLs are highlighted in green.

Appendix G – Plume Stability

Soil and groundwater assessments and monitoring activities performed to date on the designated property have identified three contaminant plumes (TPH in soil and PCE and TCE in groundwater) at the designated property. The soil contaminant plume (TPH) is located in the northeastern portion of the 1216 Houston Avenue parcel, in the vicinity of the former UST tankhold. Permanent monitoring well MW-7 and temporary monitoring well MW-1, both installed in the vicinity of the former UST tankhold and within the soil contaminant plume, exhibited historic detections of benzene and the lightest TPH fraction (C_6-C_{12}) in excess of the applicable TRRP groundwater ingestion PCLs. None of the groundwater samples collected on the 1216 Houston Avenue parcel since June 2008 have exhibited detections of benzene or TPH in excess of the applicable TRRP groundwater ingestion PCLs. The groundwater contaminant plumes (PCE and TCE) extend from the southeastern portion of the 1216 Houston Avenue parcel across the 1300 Dart Street parcel; the PCE groundwater plume extends off-site to the adjacently east property (1205 Dart Street). The following sections provide discussions regarding the stability of each of the designated property's contaminant plumes.

Soil Plume

Assessment activities performed to date initially indicate one detection of methylene chloride and two detections of the lightest TPH fraction (C6-C12) in excess of the applicable TRRP soil-to-groundwater ingestion PCLs (TRRP Tier 1 residential $^{GW}Soil_{Ing}$ PCLs) on the 1216 Houston Avenue parcel. However, as discussed in ***Appendix D***, the laboratory report which contains the methylene chloride exceedence contains other samples with documented methylene chloride laboratory contamination; indicating that the methylene chloride exceedence should be attributed to laboratory contamination.

Based on the results of the soil sampling in October 2006, the TPH soil-to-groundwater ingestion PCLE zone is located in a relatively small area in close proximity to the former UST tankhold, located in the northeast portion of the 1216 Houston Avenue parcel (shown on ***Figure C.7***), at a depth of 22-24 feet below ground surface (ft-bgs). Therefore, the TPH detections are likely due to the former UST tankhold. TPH was not detected from additional soil sampling in the vicinity of the former UST tankhold also completed in October 2006. While there is no documentation indicating the USTs were permanently removed from the ground, a geophysical survey completed by Environmental Geophysics Associates in 2006 indicated that no USTs were present above 4 ft-bgs in the vicinity of the former UST tankhold.

Former Benzene and TPH Groundwater Plume

Groundwater sampling and analysis results obtained from temporary monitoring well MW-1 and permanent monitoring well MW-7 installed in the immediate vicinity of the former UST tankhold indicate that groundwater was historically impacted by benzene and TPH, common petroleum hydrocarbon COCs, above their respective TRRP groundwater ingestion PCLs. However,

groundwater analytical results since June 2008 for monitoring well MW-7 have not exhibited detections of benzene or TPH above the applicable TRRP groundwater ingestion PCLs.

The benzene and TPH groundwater plume identified in the immediate vicinity of the former UST tankhold in the northeast portion of the 1216 Houston Avenue parcel is decreasing and not likely to increase in either magnitude or lateral or vertical extent in the future based on the following:

- No new sources of petroleum hydrocarbon COCs exist on the designated property (a geophysical survey indicated no USTs were present in the vicinity in 2006);
- The results of assessment activities to date indicate the magnitude and extent of the petroleum hydrocarbon COCs was decreasing and delineated (only in monitoring well MW-7); and
- No impacts to shallow groundwater have been observed in recent groundwater sampling activities.

Chlorinated Ethene Groundwater Plume

Assessment activities have revealed a chlorinated ethene plume that has adversely impacted groundwater on the designated property. The groundwater sampling results obtained from monitoring wells installed on the designated property historically indicate concentrations of PCE, TCE, cis-1,2-DCE, and VC in excess of the COCs' respective TRRP groundwater ingestion PCLs (TRRP Tier 1 Residential $^{GW}GW_{Ing}$ PCLs). Recent groundwater sampling results indicate that only PCE and TCE currently exceed their respective TRRP groundwater ingestion PCLs. These COCs in groundwater result from historic operations conducted on the designated property.

The source area of the groundwater chlorinated ethene plume appears to be in the southeastern portion of the 1216 Houston Avenue parcel, in the vicinity of monitoring well MW-5B. Monitoring well MW-6B, located cross-gradient (south) of monitoring well MW-5B exhibits detections of PCE that are approximately one-tenth those detected in monitoring well MW-5B. Similarly, PCE and TCE concentrations decrease in the downgradient direction (east, northeast), as the plume extends from the monitoring well MW-5B area (1216 Houston Avenue parcel), across the 1300 Dart Street parcel, to the off-site monitoring well MW-15, located at 1205 Dart Street (also owned by the City of Houston). The TCE PCLE zone is fully delineated within the designated property, as discussed in ***Appendix E***. Analytical results indicate that the chlorinated ethene plume is stable.

In summary, based on the groundwater sampling results from August 2006 to April 2012, the chlorinated ethene plume on the designated property is stable and decreasing in concentration in a downgradient direction.