SOIL AND GROUNDWATER
MANAGEMENT PLAN
AND RELATED SPECIAL BID GUIDELINES
AND SPECIFICATIONS

Special Specifications for the Procedures to Manage Impacted Soil, Groundwater, and Wastes during the Construction of IH30 from Sylvan Avenue in the west, eastward through the downtown interchanges, and then south on IH35E to Eighth Street

TxDOT Contract Number 57-048PF002
TxDOT Project ID: CSJ 1068-04-116
LCA Project No. 120204

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LCA Project No. 120204

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1.0 INTRODUCTION

Summary

LCA Environmental, Inc. (LCA) has been retained by the Texas Department of Transportation (TxDOT) to develop this Soil and Groundwater Management Plan and Related Special Bid Guidelines and Specifications (henceforth “SGMP”). The Horseshoe Project Site, or simply Project Site, is generally described as IH30 from Sylvan Avenue in the west, eastward through the downtown interchanges, and then south on IH35E to Eighth Street in Dallas, Texas.

This SGMP contains the Design Build Contractor (DBC) requirements for managing contaminated soil, groundwater, and waste generated during construction. Implementation and compliance with the SGMP is the sole responsibility of the DBC. All handling, management, and disposal of contaminated soil, groundwater, and waste by the DBC must be completed in accordance with requirements set forth in this document.

In Figure 1, SGMP Relative Environmental Risk Diagram, the relevant ROW corridor is overlaid on an aerial photograph. This SGMP identifies specific constituents/chemicals of concern (COCs) that may be encountered in one or more construction/excavation areas of the Project Site. The DBC is required to follow the special procedures, specifications and general guidelines described herein while working within the designated SGMP Zone, which is hereby defined as the entire Horseshoe Project Site. Figure 1 illustrates that the majority of the Horseshoe project corridor is associated with medium or high environmental risk due to long term, historic commercial/industrial activity in the area. Figure 2 (ten sheets) provides detailed perspective of separate areas that are collectively presented in Figure 1. Construction within the Trinity River floodway will encounter sediments that are potentially affected by metals and other contaminants. Therefore, any construction excavation or penetration of the existing ground surface should be considered as within the SGMP zone and subject to the provisions of this SGMP.

Figures 3 and 4 provide SGMP procedure flow charts to facilitate application of this document. Figure 3 generally describes soil and groundwater management applicable to most areas of the Project Site and addresses the presence of common organic contaminants such as petroleum fuel, oils, greases, and volatile organic compounds. Figure 4 addresses additional soil screening field procedures governing the special case within the boundaries of the Trinity River levees and floodway or adjacent to the historic RSR Corporation CERCLIS site boundaries (see Figures 1 and 2 to identify where Figure 4 procedures apply). Figures 3 and 4 do not describe this entire SGMP document and are not substitutes for thoroughly reading the entire SGMP document, with all appendices.
TxDOT will be identified as the generator of excavated material, with DBC serving as its waste management agent. A Third Party Authorization form will be signed by TxDOT to allow the DBC to sign waste related documents on TxDOT’s behalf. Groundwater may also be generated that could require temporary storage, then transport and disposal by DBC. TxDOT will likewise be identified as the generator of such liquid waste from the SGMP Zone. Should it become necessary to dispose of large quantities of liquids, then whenever possible, allowable, and cost effective, properly permitted water discharges to the City of Dallas Publicly Owned Treatment Works (POTW) is acceptable and preferred. DBC shall be responsible for obtaining any liquid discharge permits from the Dallas Water Utilities (DWU).

TxDOT reserves the right to monitor and direct (when necessary) all aspects of compliance with this SGMP and the special specification and provisions.

TxDOT does not and will not accept any responsibility or liability for environmental conditions created or exacerbated by the DBC in the performance and implementation of this SGMP. DBC’s construction activities governed by this SGMP shall take place only within the limits of the project ROW.

**SGMP Objectives**

The objectives of this SGMP include:

- Establish minimum qualifications for Environmental Specialist personnel responsible for the proper implementation of this SGMP.
- Provide procedures for field-screening soil and groundwater produced from Horseshoe Project construction excavations.
- Provide guidance for the proper disposal or discharge of groundwater produced from construction excavations.
- Provide guidance for reuse of affected soil, emphasizing affected soil reuse within the same or nearby excavations and minimizing off-site disposal.

**Regulatory Overview Regarding On-site Reuse of Affected Soil**

The Texas Commission on Environmental Quality (TCEQ) Texas Risk Reduction Program (TRRP) allows reuse of affected soils, a provision often informally called the “Utility Exclusion”. Texas Administrative Code (TAC) §350.36(a) under a section titled “Relocation of Soils Containing Chemicals of Concern for Reuse Purposes” states, “The excavation of soils containing COCs during construction activities (e.g., installation, repair, removal of telephone lines or other utilities, but not closures, remediations, or PST tank removal actions, for example) and the subsequent replacement of those soils into that same excavation shall not be considered to constitute relocation or reuse and shall not be subject to the provisions of this section.”
The DBC is advised that the TRRP rules reuse provision has a significant limitation that relates to the presence of non-aqueous phase liquids (NAPLS), or free phase fuel/chemicals. §350.36(a) further states “The person must treat excavated soils containing non-aqueous phase liquids to applicable levels prior to relocation or else manage the soils as wastes.”

The United States Environmental Protection Agency (EPA) issued an interpretation (Sylvia K. Lowerance, EPA Memorandum to David H. Green, Piper and Marbury, 1992) regarding the applicability of Resource Conservation and Recovery Act (RCRA) requirements to common excavation-type activities conducted on public roadways or other similar locations. EPA’s stated position is that soils from excavation or construction that are temporarily moved within an area of contamination and re-deposited into the same excavation area does not constitute treatment, storage or disposal of a hazardous waste under RCRA. Under those conditions, and subject to the absence of NAPLs, activities such as reuse of affected soils, as mentioned from time to time in this SGMP, are not subject to RCRA generator requirements and responsibilities.

**Soil Reuse Approach of this SGMP**

Soils excavated from anywhere within the Project Site that do not contain trash, garbage, or obvious field indicators of hazardous materials, can be reused as fill material within the limits of the overall Project Site. However, affected soils identified by the screening processes described in this SGMP can only be placed within 1,000 feet of the area of origin and within the project ROW as prescribed herein. Certain specified areas identified as Metals Screening Zones (MSZs) potentially contain soils with elevated metals concentrations. These soils may or may not present visual or other obvious indicators of contamination. This SGMP provides a special provision intended to reduce the possibility that metals-affected soils may be reused in areas not otherwise affected by metals, or that metals-affected soils might be transported for disposal without proper testing and profiling.

### 2.0 LIMITATIONS

In preparing this SGMP, LCA has relied on the information provided by TxDOT, TxDOT’s consultant HNTB, and TCEQ records obtained by GeoSearch, Inc. It is TxDOT/LCA’s assertion that data obtained are reflective of the general surface and subsurface conditions in respective portions of the Project Site. However, actual conditions at a specific location may vary from the subsurface conditions encountered during previous site investigations or file reviews as provided in this SGMP.

### 3.0 INFORMATION SOURCES

LCA used the following reports, files and drawings to develop this SGMP. For ease of use and review, this SGMP does not include detailed data, interpretations, construction plans, or other information not essential to understand and comply with the SGMP. The documents referenced below are all available upon request from the TxDOT Dallas District, should the DBC desire to directly review more specific information regarding potential contaminant conditions on the Horseshoe Project Site. The information incorporated into this SGMP includes at least the following:
• Phase I Environmental Site Assessment Project Pegasus, April 2003, LCA Environmental, Inc.
• Environmental Assessment, Dallas Horseshoe Project, Section 8.9 “Hazardous Materials”, February 2012, HNTB (provided as Appendix B to this SGMP; the entire Environmental Assessment is on file at TxDOT Dallas District).
• VCP #1873, SW Corner of Colorado and Jefferson Blvd. – Regulatory closure documents, TCEQ.
• VCP #1960, 405 South Industrial Blvd. APAR and regulatory closure documents, TCEQ.
• VCP #2118, 840 S. Lamar - Phase I ESA, agreement, application and monthly status reports, TCEQ.
• VCP #2131, 318 Cadiz St. - APAR and regulatory closure documents, TCEQ.
• VCP #2232, 712 Fort Worth Ave. – Regulatory closure documents, TCEQ.
• 35% draft plans, specifications and estimates (PS&E) for construction in the Project Site area and other relevant drawings, November 2011, TxDOT (available to the DBC in the Horseshoe general specifications).

Numerous items reflecting potential environmental concern are contained in the February 2012 HNTB Environmental Assessment, part of which is provided as Appendix B to this SGMP.

LCA considered data from the following public sources when identifying chemicals/constituents of concern (COCs) that may be encountered during construction:

VCP #1873, SW corner of Colorado and Jefferson Blvd: This facility has documented contamination of soils and groundwater by VOCs, SVOCs, TPH and metals. Current TCEQ files indicate response actions have been completed for this facility and it is acceptable for residential land use.

VCP #1960, 405 South Industrial Blvd: TCEQ files indicate residual contamination in site soils may be encountered in the form of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs) and metals (from historic use of levee fill materials on the north and south side of the property). Residual VOCs and SVOCs may be found in dissolved phase in the shallow groundwater in alluvial soils approximately 15 feet or deeper below ground surface (bgs).

VCP #2118, 840 S. Lamar - This facility has documented contamination of soils and groundwater by VOCs, TPH and metals. LCA reviewed available monthly status reports, VCP application and VCP agreement. No remediation or clean-up activities were documented in available files.

VCP #2131 – 318 Cadiz St: TCEQ files indicate residual contamination in shallow site soils may be encountered in the form of TPH, and metals (arsenic, lead, mercury and silver). Shallow (<20’ bgs) groundwater may contain detectable dissolved-phase concentrations of certain chlorinated compounds, as well as PAH.
Although regulatory closure has been recorded in the TCEQ Leaking Petroleum Storage Tank (LPST) program, some VOCs, TPH, oil & grease (O&G), and other fuel-related constituents may remain in the subsurface at the following properties: 1200 E. Jefferson Boulevard, 1802 Sylvan Avenue, 2020 North Beckley Avenue, 424 IH 35E, 405 S. Industrial Boulevard (VCP 1960), 620 Yorktown Street, 317 S. R.L. Thornton Freeway, 402 DFW Turnpike, 318 Cadiz Street (VCP 2131), 339 S. Industrial Boulevard, and 840 South Lamar Street.

VCP #2232, 712 Fort Worth Ave. – This facility has documented contamination of soils and groundwater by VOCs, chlorinated solvents and metals. Current TCEQ files indicate response actions have been completed for this facility and it is acceptable for residential land use.

This SGMP establishes the Trinity River Floodway as a metals-screening zone (MSZ) due to reported potential widespread impact from lead, nickel, manganese, zinc, chromium, arsenic, mercury, selenium and barium (see Appendix B, HNTB Environmental Assessment Section 8.9 Hazardous Materials for further information, refer to Table 8-21 Summary of Constituents of Concern). The RSR Corporation CERCLIS/NPL boundary north of I-30 along the westbound lanes, west of the Trinity Levees has also been established as a MSZ because of the potential for metals contamination. Additionally, metals contamination has been documented at 405 South Industrial Boulevard, 712 Fort Worth Avenue and 318 Cadiz Street, but these are considered isolated conditions and are not specifically identified as subject to special metal screening.

Other information that the DBC’s Environmental Specialist should take into consideration for planning implementation of this SGMP includes:

Releases of SVOCs and PCBs (from hydraulic oil and engine oil spills) have been documented at 1200 E. Jefferson Blvd. SVOCs have also been reported at 405 S. Industrial Boulevard, 318 Cadiz Street.

Chlorinated solvent contamination has been documented at 712 Fort Worth Drive and 405 S. Industrial Boulevard.

The pesticide Aldrin was detected at one boring location (AP-2) along the Trinity River Basin, northwest of IH-30 and Riverfront Boulevard.

Two acetylene spills were documented at 538 South Industrial Boulevard.
4.0 CHEMICALS/CONSTITUENTS OF CONCERN (COCs)

Based on currently available information about the Horseshoe Project Site (entire SGMP Zone) DBC should expect to encounter some or all of the following potential COCs in solid, liquid or vapor phase associated with shallow (<25’ bgs) subsurface soils and perched water tables. The more frequently encountered COCs, considered primary for the various media and high risk areas presented on Figure 1, are bolded in the table below.

<table>
<thead>
<tr>
<th>Chemicals/Constituents of Concern Within Entire Horseshoe Project Limits</th>
<th>Chemicals/Constituents of Concern Expected Within Metals Screening Zones</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volatile Organic Compounds (VOCs)</strong></td>
<td><strong>Lead</strong></td>
</tr>
<tr>
<td>Chlorinated Solvents</td>
<td>Arsenic</td>
</tr>
<tr>
<td><strong>Total Petroleum Hydrocarbons (TPH)</strong></td>
<td><strong>Mercury</strong></td>
</tr>
<tr>
<td>Semi-Volatile Organic Compounds (SVOC)</td>
<td>Chromium</td>
</tr>
<tr>
<td>Polycyclic Aromatic Hydrocarbons (PAH)</td>
<td>Nickel</td>
</tr>
<tr>
<td>Occasionally Lead (Pb) and Various Metals</td>
<td>Zinc</td>
</tr>
<tr>
<td></td>
<td>Selenium</td>
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<tr>
<td></td>
<td>Manganese</td>
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<tr>
<td></td>
<td>Barium</td>
</tr>
<tr>
<td></td>
<td>Cadmium</td>
</tr>
<tr>
<td></td>
<td>Antimony</td>
</tr>
<tr>
<td></td>
<td>Aldrin (single occurrence in Trinity floodway)</td>
</tr>
</tbody>
</table>

Bold: Most commonly occurring COCs

5.0 ENVIRONMENTAL SPECIALIST

DBC shall employ or otherwise engage the services of an Environmental Specialist to implement this SGMP. The Environmental Specialist is responsible for being knowledgeable of environmental conditions within the construction areas and for all reporting and documentation aspects of this SGMP. The Environmental Specialist is responsible for producing a final report that will be reviewed and must be accepted by TxDOT. The duties of the Environmental Specialist include but are not limited to:

- Characterize and pre-profile all excavation waste material if identified for immediate disposal after excavation.

- Ensure compliance with requirements of this SGMP and all applicable regulations and permits.

- Verify or conduct soil sampling, where necessary, to support pre-profile waste characterization or comply with landfill or TCEQ requirements during waste manifesting, transporting and disposal.
• Field-screen excavated soils and general debris, as described in section 5.0.

• Verify or conduct sampling and analysis of excavated soils.

• Monitor for hazardous and/or explosive conditions in trenches, pier drill holes, and other subsurface activities.

• Verify or conduct inspection and/or sampling of groundwater prior to discharge from an excavation.

• Oversee loading and prepare manifests and other documentation for wastes taken to a permitted landfill.

• Supervise trench dewatering activities, conveyance to containers or properly permitted POTW discharge location, discharge flow monitoring and/or manifesting for transport to disposal at a permitted facility

The minimum qualifications of the Environmental Specialist are as follows:

• Two years of verifiable experience in sampling and waste management of contaminated soil and groundwater.

• Two years verifiable experience in screening for metals in soil using an X-ray fluorescence (XRF) instrument or similar device.

• Successful completion of 40-hour Hazardous Waste Operation and Emergency Response (HAZWOPER) training and current annual refresher.

• Professional licensure or registration as one (1) or more of the following: Professional Engineer by the State of Texas, Registered Environmental Manager/Registered Environmental Professional by the National Registry of Environmental Professionals, Professional Geoscientist by the State of Texas, or a TCEQ-registered Corrective Action Project Manager.

Note: All qualifications of the Environmental Specialist must be submitted for consideration by TxDOT.

6.0 SOIL MANAGEMENT SPECIAL SPECIFICATIONS

SGMP figures are provided in Appendix A. Figure 1 presents the relative environmental risk diagram overlain on a 2010 aerial photograph. Figure 1 is provided for visual reference to help the DBC note the areas where procedures to address potential contaminated groundwater, soil or vapors may have greater applicability. Figure 2 (ten sheets) provides more detail of smaller areas of the Project Site. During work that disturbs soil, the Environmental Specialist shall be on-site or readily available to inspect environmental conditions and implement decisions in accordance with this SGMP during all subsurface penetration activities.
Figure 3 is a flow chart summarizing soil and groundwater management procedures to be implemented throughout the Project Site. Figure 4 presents a soil management flow chart to be implemented in a metals-screening zone (MSZ), in addition to Figure 3 requirements.

This SGMP requires field-screening and possible analytical evaluation of soils during penetrations and excavations. DBC shall keep reuse of affected excavated soil restricted to within 1,000 feet from the original excavation. Unless soil material is specifically shown to be free of the COCs mentioned in this SGMP, soil material that cannot be reused within 1,000 feet of its originating area must be disposed of properly and cannot be reused on another part of the construction project, except under conditions prescribed in this SGMP document and as determined by the Environmental Specialist.

Figure 4 is a flow chart summarizing soil management in specific areas identified on Figure 1 as metals-screening zones, MSZs. Figure 4 presents the procedure to screen for the presence of metals in the event excavated material cannot be reused within the same MSZ and within 1000 feet of the origin of the fill material. Metals screening and follow up laboratory analyses are prescribed for soils that must be transported out of the MSZs. To prevent comingling of metals-affected soils with unaffected soils in other parts of the Project Site, no unanalyzed soil shall be transported from the MSZs for reuse in other parts of the Project Site. Affected soil produced from a MSZ can be reused within that MSZ and within 1,000 feet of the origin or transported off-site for disposal.

**Field-screening for VOCs and Associated COCs (See Figure 3 Flow Chart)**

This SGMP does not prescribe all detailed means and methods of field-screening which could be available to the Environmental Specialist. As a general rule, screen at least one representative soil sample for approximately every 10 cubic yards of excavated soils, or 10 linear feet of trench. The soil screening activities and readings should be documented in the field as they are obtained.

The following general field procedures shall be followed for screening soil samples within the Project Area:

- Before screening each day, calibrate photo-ionization detector (PID) according to manufacturer specifications.
- Use disposable latex or nitrile gloves and immediately place the sample in an appropriate container (e.g., sealed ziplock bag).
- Measure the sample headspace with a PID after allowing the sample to sit for approximately 10 minutes and record results.
- Decontaminate any sampling tools after each use.

The following field procedures shall be performed at locations and frequency determined at the discretion of the Environmental Specialist. Relative risk areas identified on Figure 1 may be used to plan for personnel and field screening equipment. Environmental Specialist shall be prepared to perform field-screening in any areas where field personnel report odors or other conditions that suggest the presence of COCs.
To determine the potential presence of volatile COCs in excavated soil generated during the installation of piers, culverts, storm sewers, manholes, inlets, on-grade access roads or any other activities that require excavating the existing at-grade surface cover, an Environmental Specialist must field-screen soil as it is removed and initially stockpiled adjacent to the excavation areas. Field-screening will consist of utilizing a photo-ionization detector (PID) and/or a flame-ionization detector (FID) to identify the presence of volatile organic compounds (VOCs). When conditions dictate, as determined by the Environmental Specialist, it may also be necessary to use a properly calibrated combustible gas indicator capable of reporting percent lower explosive limit (% LEL). Field-screening and visual inspection shall be performed during every phase of soils excavation, storage and transport on-site, including loading onto dump trucks. The Environmental Specialist must also note visual and subjective indicators of contamination (e.g., staining and/or odors) while inspecting the excavation for water and other liquids.

Excavated soil material that the Environmental Specialist determines is not affected may be returned to the excavation, if desired, and as soon as practical. If excavated, affected soil is reused within 1,000 feet of its point of origin, DBC shall ensure that at least two (2) feet of imported clean fill is placed on top of the affected soil that has been reused as backfill. Imported fill may come from a commercial supplier or other convenient source so long as the source is not itself an environmentally impacted facility and the imported fill does not exhibit apparent indications of potential concern (e.g., odors, visible staining, etc.). Soil that is placed at the surface to cover deeper reused soils should satisfy the requirements for a clean, compacted low permeability cover (see section 8.0 of this SGMP for greater specificity).

Soils that will not or cannot be readily used as fill within 1,000 feet of the original excavation location as soon as practicable, and for which the PID, FID, or LEL readings exceed background levels, or for which visual indicators of impact are noted or analytical data confirm the presence of COCs above levels specified in this SGMP, should be segregated for timely disposal. Such soil may be loaded into lined containers or directly into lined dump trucks by DBC for transportation to a permitted landfill.

For every 100 cubic yards of segregated soil that accumulates for disposal, the Environmental Specialist may, solely at his/her discretion, collect a composite sample and submit it to the contracted laboratory for analysis. Upon receipt of the analytical results, the Environmental Specialist will review the data and compare them to TRRP Tier 1 Residential Protective Concentration Levels (PCLs) for a 30-acre source area. Should the reported concentration of a COC equal or exceed its respective TRRP Tier 1 Residential PCL, the soil may either be simply transported for disposal, returned to the original excavation or placed in a permitted interim on-site storage location (within the SGMP Zone) and later returned to the original excavation (within 1000 feet of its origin). If laboratory testing of soils for both VOCs and heavy metals is conducted and the results indicate no COC concentrations exceeding Tier 1 PCLs, then such soil may be reused or relocated without restriction at the DBC’s discretion.
XRF Screening of soils in Trinity River Floodway and RSR Property Boundaries (see Figure 4 Flow Chart)

The following field-screening procedures apply for soils excavated within a MSZ that cannot be reused within the MSZ. The Environmental Specialist shall conduct metals screening during soil disturbance/penetration activities within the areas designated as MSZs on Figure 1, within the Trinity River Floodway and the RSR Property Boundary. Excavated soil from the MSZs shall be screened according to procedures described in the previous section and by use of an X-Ray fluorescence (XRF) analyzer programmed to detect the presence of arsenic, lead and mercury. The XRF provides concentration readings of the metals that can be compared to the respective TRRP Tier 1 PCLs. If XRF readings indicate concentrations above the $\text{TotSoil}_{\text{comb}}$ pathway for residential soils, samples of the soil shall be collected and analyzed for the entire suite of RCRA 8 metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver) by an off-site analytical laboratory.

The primary purpose of this special XRF screening method is to identify the presence of elevated metals concentrations and prevent reuse and mixing of affected soil with soil in other parts of the Horseshoe project that may not be affected with metals COCs. The prescribed screening and analyses will also support DBC’s waste profile for metals-affected soils designated for off-site disposal.

Surface Management of Affected Soils

Any excavated soils that are targeted for either disposal or reuse outside their areas of origin and determined to be impacted based on visual observations, odors, field-screening or other methods must be segregated and temporarily stockpiled for waste characterization purposes. All such temporarily stockpiled soils shall be assumed to be contaminated and shall be managed as such until demonstrated otherwise. In particular, all soils excavated from the Project Site that exceed field-screening background shall be assumed to be contaminated and shall be placed on plastic sheeting in the designated stockpile area. The stockpile shall be covered with plastic sheeting when not being actively worked. A non-hazardous waste sticker shall be placed in a visible location on the sheeting. The DBC shall take the necessary steps to secure the cover and direct stormwater run-off away from the stockpiles.

Decontamination Procedures for Excavation Equipment

Because of the potential presence of metal COCs in the MSZs depicted on Figure 1, DBC must decontaminate construction equipment that has been used in the MSZs before it is moved to another part of the construction project outside the MSZs. Additionally, the DBC shall not permit construction equipment that has come into contact with suspected contaminated soil to depart that particular area until proper decontamination procedures have been conducted. Vehicles utilized for transporting affected soil from the Project Site need not undergo decontamination procedures each time they enter and exit the affected area, as long as the cargo areas are lined (e.g., with 6 mil polyethylene sheeting) to prevent contact of the waste with truck surfaces. At the conclusion of transportation activities, or after each delivery to the permitted...
landfill if the liners become torn, the disposable liners should be removed and disposed along with the loaded soils. The Environmental Specialist is responsible for ensuring that proper equipment decontamination procedures are implemented to minimize spreading affected soil off-site or outside the areas of origin.

7.0 GROUNDWATER MANAGEMENT SPECIAL SPECIFICATIONS

In areas where the DBC needs to dewater trenches, excavations or pier shafts, groundwater that is confirmed to be affected by the Environmental Specialist must be conveyed into containers provided by DBC. Pumping affected groundwater directly onto the ground surface is prohibited. The DBC shall select a properly licensed transporter and disposal company to permanently remove the affected groundwater from the Project Site. The Environmental Specialist is responsible for profiling and manifesting the water before it is transported and disposed. It is possible that the removed groundwater can be disposed at local recycling facilities that also routinely accept hydrocarbon affected groundwater.

Alternatively, for conditions that may produce large quantities of affected groundwater, the DBC's Environmental Specialist may possibly obtain a permit through the Dallas Water Utility (DWU) to discharge water into the POTW system. If properly permitted and logistically feasible, disposal to the POTW is an acceptable and economical management strategy for affected groundwater.

**Water-Based Drilling Mud**

When drilling shafts for bridge support piers, the DBC may use a drilling mud (i.e., “slurry”) system in conjunction with the large diameter auger bit. Mud returns to the surface will typically go through a coarse filtration system or be directed to a settling tank to remove the suspended particles (cuttings) of soil, shale and rock. The recovered fluid can then be pumped back down hole to lubricate and cool the bit and carry more cuttings to the surface. This drilling mud fluid, or filtrate, must be contained and handled in the same manner as groundwater.

8.0 SPECIAL PROVISION FOR SURFACE COVER IN SGMP ZONE

All areas that are excavated and then filled with reused affected soils as identified by the Environmental Specialist, must first be covered with at least twenty-four inches (24") of clean, imported compacted soil that, in turn, is then covered with landscaped or vegetative final cover (excluding areas that are covered on the surface with paving or some other impervious surface).

9.0 WASTE STORAGE AREA

One or more Waste Storage Areas may be established for the interim storage of soil, water, and drilling mud. The Waste Storage Area shall be used for staging soil, water, and drilling mud prior to re-use or transport and offsite disposal. The DBC can locate the Waste Storage Area(s) within TxDOT’s ROW as appropriate to facilitate management of soil and water while avoiding low lying areas. Signs must be placed on the perimeter of the Waste Storage Area indicating “RESTRICTED ACCESS – AUTHORIZED PERSONNEL ONLY”. The signs must be visible on each side of the Waste Storage Area.
Soil, water, and drilling mud must be stored in a controlled manner that does not allow contamination to spread and does not allow storm water to contact the waste. Examples of appropriate storage for soil include sealed roll-off containers, stockpiles placed on and covered with minimum 6-mil plastic sheeting, drums, etc. Examples of appropriate storage for water include sealed holding tanks (e.g., frac tanks), drums, etc. Storage containers shall be in accordance with the following requirements.

Roll-off containers: Containers shall be constructed of steel and shall be in good condition and working order without damage that would allow contents to escape. Containers shall include a rust resistant coating in good condition. Roll-off containers that are deteriorating (e.g., cracked, rusted) or leaking must not be used. Waste stored in defective containers must be immediately transferred to containers in good condition. The roll-off containers must be sealed during periods when they are not being loaded or during precipitation events. Any roll-off container used to store hazardous waste shall comply with 40 CFR 264/265 Subpart I. Any roll-off containers used to transport hazardous materials or wastes shall comply with United States Department of Transportation (US DOT) regulations on packaging in 49 CFR parts 173, 178, and 179.

Drums: Drums shall be constructed of steel and shall be in good condition and working order without damage that would allow contents to escape. Each drum shall include a cover/top which will allow the drum to be closed and sealed at all times, except when materials are being added to or removed from the drum or during precipitation events. Any drum used to store hazardous waste shall comply with 40 CFR 264/265 Subpart I. Any drum used to transport hazardous materials or wastes shall comply with all US DOT regulations on packaging in 49 CFR parts 173, 178, and 179.

Holding tanks: Holding tanks (e.g., frac tanks) shall be in good condition and working order without damage that would allow contents to escape. Holding tanks shall include a rust resistant coating to prevent rust. All valves, outlets and openings shall be secured and in good working order. Any holding tank used to store hazardous waste shall comply with 40 CFR 264/265 Subpart I. Any holding tank used to transport hazardous materials or wastes shall comply with all US DOT regulations on packaging in 49 CFR parts 173, 178, and 179.

Plastic sheeting: All plastic sheeting used shall be new, composed of high density polyethylene, a minimum of 6-mil thickness, and shall be free of cuts or tears. Sheets shall be placed so as to prevent impacted soils from contacting the ground surface. Materials need to be segregated by potential disposition. Soil shall be segregated by categories of hazardous waste, Class 1 non-hazardous waste, Class 2 non-hazardous waste, and material that may be re-used without restriction. Water and drilling mud shall be segregated as hazardous waste, Class 1 nonhazardous waste, and Class 2 non-hazardous waste. All staging areas must be appropriately labeled.
The Waste Storage Areas must be in reasonable proximity to the construction area so the DBC can stage soil, water, and drilling mud. The Waste Storage Areas must also have access to public roadways so the waste transportation contractor can pick-up the soil, water, and drilling mud for transport and disposal. The Waste Storage Area must be kept free of uncontrolled contamination so that vehicles being used for transportation do not have to be decontaminated before departure from the Waste Storage Area. The DBC equipment entering the Waste Storage Area must also be free of exterior (e.g., tires, truck beds, etc.) contamination. The Waste Storage Area must be secured with temporary fencing and appropriate signs.

Personnel working in the Waste Storage Area must have appropriate training and PPE as defined by the DBC. All fences shall be composed of chain link and include gates with adequate access for entry/exit of containers and vehicles. Fencing shall be at least six feet in height and shall be free of breaks. Fence posts shall be placed at a maximum of every ten feet. A heavy duty keyed-lock must be used at all times to secure the Waste Storage Area.

<table>
<thead>
<tr>
<th>10.0  SPECIAL PROVISION FOR DBC HEALTH AND SAFETY GUIDELINES</th>
</tr>
</thead>
<tbody>
<tr>
<td>With respect to DBC’s workers (direct employees, sub-contractor personnel, and consultant personnel), DBC is solely responsible for complying with all applicable U.S. Department of Labor Occupational Safety &amp; Health Administration (OSHA) rules, regulations and guidelines. The following information is provided to assist the DBC in complying with OSHA regulations and safely planning construction with respect to special hazards that are not otherwise anticipated.</td>
</tr>
</tbody>
</table>

**Personal Protective Equipment**

Due to the potential presence of COCs in soil and groundwater, construction workers could potentially be exposed to COCs via dermal contact, ingestion, and/or inhalation exposure pathways. Proper use of PPE is required where there are exceedances of the applicable TRRP Tier 1 Residential PCLs.

The DBC shall ensure that all applicable worker health and safety and construction safety regulations, including 20 CFR 1910.120, are properly applied. All required medical monitoring, worker health and safety monitoring, and PPE shall be provided by the DBC. The DBC’s Environmental Specialist shall monitor site conditions to ensure that proper worker PPE is being used.

**Potentially Explosive Conditions Advisory**

No evidence of explosive conditions has ever been noted at this Project Site (Horseshoe ROW), based on file research information (see section 2.0). The Environmental Specialist may decide to have an explosivity detector instrument on site. Operated by a qualified Environmental Specialist, the explosivity detector used during subsurface work is a defense against explosion hazards. It is suggested that the DBC’S health and safety officer work closely with the designated Environmental Specialist to determine if special provisions to DBC’s regular health and safety plan are warranted to cover this special hazard. Common sense rules such as no
smoking or welding near open excavations where odors or field-screening indicators such as elevated PID readings of contamination have been detected (especially pier holes where the smaller space can concentrate gases) are advisable. This advisory is not exhaustive; the DBC is encouraged to formulate its safety procedures in the most thorough manner possible to avoid incidents related to explosive gases that may be encountered during construction.

**Hazardous Materials Advisory**

There is no basis to exclude the possible presence of small or even moderate quantities of acutely hazardous materials, including buried drums or other hazardous materials. There also is no current evidence to suggest the likely presence of acutely hazardous waste or materials that present an immediate danger to life and health, if uncovered. The continuous presence of the DBC’s well-trained and qualified Environmental Specialist during subsurface activities is a defense against the possibility that significant volumes of hazardous materials might be unexpectedly uncovered and then potentially mismanaged or handled in an unsafe manner. This advisory is not exhaustive; the DBC is encouraged to formulate its safety procedures in the most thorough manner possible to avoid incidents related to hazardous materials that may be encountered during construction.

**Site Security**

To protect the public from potential exposure to COCs and physical hazards, site security measures must be implemented. Temporary fencing must be installed around the perimeter of any Waste Storage Area. Temporary fencing must be installed around the perimeter of excavations where contamination is present. The temporary fencing must be secured at the completion of each day or when personnel are not onsite. Access to the secured areas will be controlled by the DBC.

**11.0 PLAN DOCUMENTATION AND OTHER REQUIREMENTS**

**Communication Plan**

The DBC will prepare a Communication Plan (CP) to outline notification procedures to ensure appropriate individuals are informed of SGMP activities and their respective roles. The overall goal of this CP is provide an effective communication process that ensures work is performed in a manner to protect the health and safety of site workers, the public, the environment and prevent construction delays due to environmental issues.

**Field Documentation**

To document field conditions, the on-site Environmental Specialist will maintain daily entries in a weather-resistant field notebook. The entries will record DBC activity and all observations relative to the proper implementation of the SGMP. All field instrument readings and sample collection data will be kept in the field notebook.
Revisions to the SGMP

Any necessary changes to the SGMP should be discussed with the TxDOT Engineer in Charge, or his/her designated representative, and fully documented as an Addendum to the SGMP with signatures of acknowledgement. Special circumstances may dictate temporary or permanent changes or exceptions to this plan.

Overall supervision of construction under the SGMP should be documented in a bound field notebook, which should be reviewed and executed by the Engineer in Charge. This notebook should be used to summarize and document overall compliance with the SGMP during specific continuous periods of time such as a single day, several continuous days, or up to a full week of project progress.

Final Report

A report summarizing observations and conclusions will be submitted by the DBC to TxDOT following completion of field activities. The final report shall contain, at a minimum:

- Daily field logs.
- All laboratory results with sample locations.
- All corrections and/or revisions to the SGMP.
- Waste Disposal manifests and tracking information.
- Personnel and companies responsible for managing the SGMP, including names and certifications.
- All other items related to the regulatory management of the contaminated media, per the SGMP.

Plan Certification

Persons critical to the proper implementation of this SGMP should become familiar with its requirements and file the appropriate certifying documents with the TxDOT Engineer in Charge.

12.0 PROJECT OVERSIGHT

TxDOT reserves the right to independently monitor, document and direct (when needed) all aspects of compliance with this SGMP and the special specification and provisions created to allow construction throughout the SGMP Zone.
DESIGN BUILD CONTRACTOR (DBC) CERTIFICATION

Project: Horseshoe
This certification is to be completed by the DBC involved in any on-site activities related to the construction.

Signed: ___________________________________________________________
Name: ____________________________________________________________
Title: ______________________________________________________________
Company: __________________________________________________________
Address: __________________________________________________________
Telephone: __________________________________________________________
Date: __________________________________________________________________

I certify that I understand the requirements of the Soil and Groundwater Management Plan (SGMP) construction site identified as part of this certification. Specifically, I understand that the construction crew under my control (including all sub-contractor crews) will follow the instructions of the on-site ENVIRONMENTAL SPECIALIST in the areas identified to potentially contain contaminated soil and groundwater that may require special handling and procedures as detailed in the SGMP.
Appendix A

Figure 1 - Horseshoe Project Relative Environmental Risk Diagram
Figure 2 - Relative Risk Diagram Detail (ten sheets)
Figure 3 - SGMP Flow Chart – General
Figure 4 - SGMP Flow Chart – Metals Screening Zones: Trinity River Floodway and RSR Property
FIGURE 3
Soil and Groundwater Management Plan

Commence construction/excavation/penetration.

Is construction/excavation/penetration occurring within the Metas Screening Zones (See Figures 1 and 2)?

No

Yes

PID readings above background levels or any field indicators of affected soils?

Also follow Figure 4 Flow Chart.

Groundwater in excavation with field indicators of contamination, sheen or colors?

No

Yes

Can be reused within 1,000 feet of origin?

Continue excavation without restrictions, protect from rainfall entry.

Sample for lab analysis for disposal or DWU specified analytes.

Use without restriction except as indicated by applicable Figure 4 Flow Chart procedures.

Temporarily stockpile on polylined ground surface or in lined roll-off container.

Reuse and cover to surface with 2 feet of clean compacted fill or impervious surface.

Collect approximately one soil sample every 20 cubic yards for lab analysis required for proper waste profile (e.g., TPH, VOCs and SVOCs).

Transport to permitted landfill as Texas Class 2 non-hazardous solid waste.¹

If required to accomplish construction, dewater excavation and temporarily containerize water for later disposal or immediately transport water to permitted recycling or disposal facility or obtain POTW discharge permit from DWU for large quantities.²

Note: ¹ Contingent on landfill profile and waste characterization procedures specified in this SGMP
² Contingent on approved DWU permit and water testing
FIGURE 4
Soil Management within the Trinity River Floodway and RSR Boundary (Metals Screening Zones)

Commence construction/excavation/penetration within the Metals Screening Zones.

Use XRF to screen soil for lead, arsenic and mercury.

Readings above Tier 1 PCLs?

No

Follow Figure 3 Flow Chart.

Yes

Can soils be reused within same Metals Screening Zone?

No

Temporarily stockpile on polylined ground surface or in lined roll-off container.

Collect approximately one sample every 20 cubic yards for lab analysis of RCRA 8 Metals and relevant Figure 3 Flow Chart specified analysis.

Transport to permitted landfill as Texas Class 2 non-hazardous solid waste.¹

Yes

Reuse in same Metals Screening Zones, within 1,000 feet of origin and cover to surface with 2 feet of clean compacted fill or impervious surface.

Note:¹ Contingent on landfill profile and waste characterization procedures specified in this SGMP.
Noise associated with the construction of the project is difficult to predict. Heavy machinery, the major source of noise in construction, is constantly moving in unpredictable patterns. Although construction normally occurs during daylight hours when occasional loud noises are more tolerable, nighttime construction would be substantial for the proposed project because it involves a major interchange and two major highways. Nighttime construction would be utilized in order to help minimize disturbance to vehicular traffic. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to minimize construction noise through abatement measures such as work-hour controls (i.e., reduced nighttime construction near residential areas) and proper maintenance of muffler systems.

A copy of this traffic noise analysis would be available to local officials. On the date of approval of this document (Date of Public Knowledge), FHWA and TxDOT are no longer responsible for providing noise abatement for new development adjacent to the project.

8.9 Hazardous Materials

The study area for hazardous materials encompasses the sites included in the environmental regulatory database report and other historical reports that could pose a risk to the construction of the proposed project.

No-Build Impact
Under the No-Build Alternative, no impacts to hazardous waste/substance are anticipated.

Build Impact

Visual Survey
A visual survey of the proposed project limits was conducted for evidence of hazardous substances and/or contamination on December 1 and 8, 2011. This survey included a visual observation of properties located along and immediately outside the proposed project limits to identify the release or threatened release of petroleum products or other hazardous substances.

Environmental Regulatory Records Review
A review of environmental regulatory databases was conducted for the proposed project limits to determine if any known sites producing, storing, and/or disposing of toxic or hazardous materials might affect the proposed project. These databases were obtained directly from government sources and are typically updated on a quarterly basis. This environmental regulatory records review assessment (radius report) was conducted in accordance with the American Society for Testing and Materials (ASTM) Practice E1527-05, with exceptions to accommodate the particular situations and needs of TxDOT roadway projects. The regulatory database lists reviewed are presented in Appendix E: Hazardous Materials Regulatory Database Summary.
The ASTM radius search of the proposed project limits was reviewed. The database search identified 388 sites and provided the locations of 386 sites. The sites identified from the federal databases consisted of:

- 2 Aerometric Information Retrieval System/Air Facility (AIRSAFS) sites;
- 1 EPA Docket Data (DOCKETS) site;
- 4 Emergency Response Notification (ERNSTX) sites;
- 20 Facility Registry System (FRSTX) sites;
- 1 Integrated Compliance Information System (ICIS) site;
- 2 Resource Conservation and Recovery Act-Generator Facilities (RCRAG06) site;
- 21 Brownfields Management System (BF) sites;
- 11 Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) sites;
- 8 No Further Remedial Action Planned (NFRAP) sites;
- 1 No Longer Regulated RCRA Non-Corrcats TSD Facilities (NLRRCRAT) site;
- 1 National Priority List (NPL) site; and
- 1 Record of Decision (ROD) site.

The sites identified from the state databases consisted of:

- 2 Groundwater Contamination Cases (GWCC) sites;
- 1 Notice of Violations (NOV) site;
- 2 SPILLS Listing (SPILLS) sites;
- 45 Industrial Hazardous Waste (IHW) sites;
- 69 Petroleum Storage Tanks (TXPST) sites;
- 12 Affected Property Assessment Reports (APAR) sites;
- 2 Brownfields Site Assessments (BSA) sites;
- 1 Closed and Abandoned Landfill Inventory (CALF) site;
- 6 Innocent Owner/Operator Database (IOP) sites;
- 79 Leaking Petroleum Storage Tanks (TXLPST) sites;
- 3 Municipal Solid Waste Landfill (MSWLF) sites;
- 71 Tier II Chemical Reporting (TIER II) sites; and
- 22 Texas Voluntary Cleanup Program (TXVCP) sites (two of which were unlocatable);

Based on distance, topographic gradient, historical information, database information, and property impacts the seven sites listed in Table 8-19 are categorized as high risk. Sites considered likely to be contaminated and within the proposed ROW are categorized as "high risk". Examples of high risk sites include landfills and LPST sites. Sites are categorized as "low risk" if available information indicates that some potential for contamination exists, but the site is not likely to pose a contamination problem during construction. The 12 sites characterized as low risk are listed in Table 8-20. The locations of the high and low risk sites are shown on Appendix D: Constraints Maps.
# Table 8-19: High Risk Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Name/ Site Information</th>
<th>Database Listing</th>
<th>Regulatory Status</th>
<th>Gradient and Anticipated Property Impact</th>
<th>Constraints Maps Sheet No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Southwest Industrial Gases, Inc. 538 South Industrial Blvd. Dallas, TX 75207</td>
<td>SPILLS, TIER II, FRSTX, ICIS, IHW</td>
<td>SPILLS (ID# 94947) – Unknown amount of acetylene spilled on 7/25/07 that entered a stormwater drainage to the Trinity River. Incident closed. SPILLS (ID# 95138) – Unknown amount of acetylene spilled on 7/30/07 and did not enter a water body. Incident open. TIER II (ID# 4VVPOX002SAN) – Storage of acetone and acetylene gas at the site. FRSTX (ID# 110005162402) – SIC codes 5199, 9999, 2759, 1541, 4911, and 2813. ICIS (ID# 2022044197) – Cited for violating CWA 301 NPDES for discharge without a permit. IHW (ID# 35732) – Not a hazardous waste generator. Registration was inactivated because no activity was reported in 1994, 1995, and 1996.</td>
<td>The site is at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired.</td>
<td>3 and 9</td>
</tr>
<tr>
<td>3</td>
<td>Oak Cliff Bus Facility 1200 E Jefferson Blvd. Dallas, TX 75203</td>
<td>LPST, PST, TIER II, ERNSTX, FRSTX, IHW</td>
<td>LPST (ID# 108257) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed. PST (ID# 0031304) – Twelve tanks removed from ground in May 2000 and two tanks temporarily out of use, empty, since September 2006. Tier II (ID# 2WF2KX008CG2) – Site contains multiple locations with above ground tanks containing gasoline, diesel, and oil. It passed all validation checks. ERNS (ID# 2144339360 and 333721933) – A 75.8 gallon hydraulic oil spill occurred in 1996 that was contained, but it did reach water. A 300 gallon engine oil spill occurred in 2000 that was contained and did not reach water. FRSTX (ID# 110000901784) – SIC codes 4226 and 4111 and NAICS codes 485113 and 485999. IHW (EPA ID# TXD981902752) – Conditionally exempt small quantity generator for multiple wastes.</td>
<td>The site is above-grade and adjacent to the existing ROW. No additional ROW required at this site.</td>
<td>7</td>
</tr>
<tr>
<td>11</td>
<td>Dairy Mart 3 1802 Sylvan Ave Dallas, TX 75208</td>
<td>PST, FRSTX, LPST</td>
<td>PST (ID# 0069156) – Two 12,000 gallon gasoline tanks removed from ground on 12/23/10. FRSTX (ID#11003442278) – No data provided. LPST (ID#118314) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (3) Monitoring.</td>
<td>The site is at-grade. A portion of the property along the south boundary of the parcel has been acquired.</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Burden Brothers 2020 N Beckley Ave Dallas, TX 75208</td>
<td>PST, LPST</td>
<td>PST (ID# 0034648) – Three tanks (5,000 and 2,000 gallon gasoline and 1,000 gallon used oil) were removed from the ground on 6/11/99. LPST (ID# 116536) – (4.0) Assessment incomplete, no apparent receptors impacted. (6P) Final concurrence pending documentation of well plugging.</td>
<td>The site is at-grade and adjacent to the existing ROW. No additional ROW needed at this location.</td>
<td>2</td>
</tr>
</tbody>
</table>
Site 1 (Southwest Industrial Gases, Inc.) is located within the proposed ROW and Site 15 (NTTA Maintenance Facility) is located within the existing ROW. Both sites are at-grade with the proposed project. It is anticipated that the entire parcel of Site 1 would be acquired. Both sites would be physically impacted by the proposed construction activities of the proposed project. The proposed construction activities at these sites would consist of grading, excavation, and drilling of piers for bridge supports. Sites 1 and Site 15 are considered to pose a high risk to the construction of the proposed project due to the construction activities to occur at the site and the recorded incidences of contaminant releases and storage of chemical materials on the sites.
Site 3 (Oak Cliff Bus Facility) is located above-grade and adjacent to the existing ROW. The site would not be physically impacted by the proposed construction activities of the proposed project. No construction activities would occur along the southbound frontage road adjacent to the site. Construction activities would occur along the mainlanes and would consist of grading and minimal excavation. Site 3 is considered to pose a high risk to the construction of the proposed project due to its location above grade of the proposed project and the possibility that contamination may have extended into the proposed construction area.

Site 11 (Dairy Mart 3) is located at-grade and a portion of the property along the south boundary of the parcel has been acquired. The structure and the underground storage tanks at the site have been removed. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. Site 11 is considered high risk as it is currently in the monitoring stage for the LPST and the southern limit of the parcel would be physically impacted by the proposed construction activities.

Site 12 (Burden Brothers) is located at-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project. Five bridge bents are located immediately north of the site and bridge piers for the bents would be drilled and constructed at these locations. There is a slight slope from IH 30 to drainage sumps to the east and south of the site. Site 3 was determined to pose a high risk to the construction of the proposed project due to the close proximity of the drilling of the bridge piers and the possibility that contamination may have extended into the proposed construction area.

Site 13 (Texaco/Gateway 25/Star Enterprises) is located above-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project. A proposed exit ramp would be constructed along the mainlanes adjacent to Site 13. The site is located approximately 10 ft higher than the mainlanes where construction activities would occur. Construction activities would consist of grading and minimal excavation. Site 13 is considered to pose a high risk due to its elevation above the mainlanes and the possibility that contamination may have extended into the proposed construction area.

Site 62 is located at-grade and a portion of the property along the south boundary of the parcel has been acquired. The site has been cleared of most of the structures. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. Site 62 is considered high risk as the APAR status is still in the investigation stage and the southern limit of the parcel would be physically impacted by the proposed construction activities.
### Table 8-20: Low Risk Sites

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Name/ Site Information</th>
<th>Database Listing</th>
<th>Regulatory Status</th>
<th>Gradient and Anticipated Property Impact</th>
<th>Constraints Maps Sheet No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Hardfacing Specialty Co. 430 S. Industrial Blvd. Dallas, TX 75207</td>
<td>FRSTX, IHW</td>
<td>FRSTX (ID# 110005052824) – No data provided. IHW (TEQ ID# 021146) – Registration inactivated because facility was registered prior to 1994 and no waste reported in 1994, 1995, and 1996. In RCRAINFO program. Inactive generator.</td>
<td>The site is at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired.</td>
<td>3 and 9</td>
</tr>
<tr>
<td>4</td>
<td>National Linen Service/ Angelica Textile 620 Yorktown St. Dallas, TX 75208</td>
<td>LPST, PST, TIER II, AIRSAFS, FRSTX</td>
<td>PST (ID# 0041439) – Three tanks (10,000 and 4,000 gallon gasoline and one 4,000 gallon diesel) removed from ground on 6/1/1992. Tier II (ID# 48N2MJ002FO, 5KDBW0024RS, and 7QOS6W002V42) – Chemicals stored at site includes sulfuric acid, hydrogen dioxide, sodium hydroxide, and poly(oxy-1,2-ethanediyl,alphs-(nonylphenyl)-omega-hydroxy). AIRSAFS (ID# 481136E173) – Classification is potential uncontrolled emissions and pollutant is tetrachlorethylene (perchloroethylene). FRSTX (ID# 110001876863) – SIC code is 7216, drycleaning plants, except rug cleaning. LPST (ID# 104591) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed.</td>
<td>The site is at-grade. It is anticipated that a portion of the property along the south boundary of the parcel would be acquired.</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Morrison Automotive 317 S RL Thornton Fwy. Dallas, TX 75203</td>
<td>PST, LPST</td>
<td>PST (ID# 0071394) – Five tanks removed from ground on 12/20/1998. Three gasoline (two 1,000 gallon and one 4,000 gallon) tanks, one 1,000 gallon kerosene tank, and one 4,000 gallon tank storing unknown substance, LPST (ID# 1114458) – (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed.</td>
<td>The site is at-grade and adjacent to the existing ROW. No additional ROW required at this site.</td>
<td>7</td>
</tr>
<tr>
<td>6</td>
<td>Millet the Printer 1000 S. Ervay Street Dallas, TX 75201</td>
<td>RCRAG06 and IHW</td>
<td>RCRAG06 (ID# TXD988003968) – Small quantity generator that contains ignitable waste, corrosive waste, silver, 1,4-dichlorobenzene, and various non-halogenated solvents. IHW (ID# 80661) – Small quantity generator that contains waste solvent, contaminated rags, waste ink, spent solvents, spent fixer, plant trash, empty metal drums, scrap metal, scrap film, and waste oil.</td>
<td>The site is above-grade and adjacent to the existing ROW. No additional ROW would be required at this site.</td>
<td>6</td>
</tr>
<tr>
<td>8</td>
<td>RSR Corporation Westmorland Rd. and Singleton Rd. Dallas, TX 75115</td>
<td>NPL, RODS, CERCLIS</td>
<td>NPL (EPA ID#: TXD079348397) - The site encompasses a 13.8 square mile area. It was a lead smelter plant. Soils and groundwater contaminated with lead, antimony, cadmium, and arsenic at the site and within the area. RODS (ID# TXD079348397) – ROD date was 5/9/95 and status is on Final NPL. CERCLIS (ID# TXD079348397) – Currently on Final NPL.</td>
<td>The southern limits of the RSR Corporation affected area extends into the proposed project limits on IH 30 west of the Trinity River.</td>
<td>1 and 2</td>
</tr>
</tbody>
</table>
## Site Information and Regulatory Status

<table>
<thead>
<tr>
<th>Site</th>
<th>Site Name/ Site Information</th>
<th>Database Listing</th>
<th>Regulatory Status</th>
<th>Gradient and Anticipated Property Impact</th>
<th>Constraints Maps Sheet No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>United States Postal Service 402 DFW Turnpike Dallas, TX 75260</td>
<td>LPST, PST, AIRSAFS, ERNSTX, FRSTX, IHW</td>
<td>LPST (ID# 103928) - (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed. PST (ID# 0043460) – Four diesel tanks, one gasoline tank, three used oil tanks, and one tank of unknown substance removed from ground on 7/21/94. AIRSAFS (ID# 481136E367) – Classification is potential uncontrolled emissions less than 100 tons per year. ERNS (ID# 3078623857) – A 30 gallon oil/fuel spill that did not reach water. FRSTX (ID# 110037847783 and 110005025999) – SIC code is 4311 which includes all U.S. Postal Service establishments. IHW (ID# TX9180000300) – Conditionally exempt small quantity generator for non-industrial and/or municipal waste.</td>
<td>The site is at-grade and adjacent to existing ROW. No additional ROW required at this site.</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>In &amp; Out Store/ Buy Low Discount 1005 S. Industrial Blvd. Dallas, TX 75207</td>
<td>PST, FRSTX, NOV</td>
<td>PST (ID# 0076098) - Two 15,000 gallon gasoline tanks are in use. FRSTX (ID# 11003400763) – No data reported. NOV (ID# RN103993085) - Minor waste violation issued for failure to maintain records in 2006.</td>
<td>The site is at-grade and adjacent to the existing ROW. No additional ROW needed at this location.</td>
<td>4 and 9</td>
</tr>
<tr>
<td>16</td>
<td>Alford Refrigerated Warehouses 318 Cadiz St Dallas, TX 75207</td>
<td>PST, VCP, BF, CERCLIS, DOCKET S, ERNSTX, FRSTX, LPST</td>
<td>Five USTs (gasoline, new oil, used oil) removed 1991. New oil UST leak reported 1991; case closed. Site currently active in VCP (investigation phase) due to soil/groundwater contamination with VOCs, SVOCs, metals, solvents, and TPH.</td>
<td>The site is at-grade and approximately 500 ft from the existing ROW. No additional ROW required at this site.</td>
<td>4 and 5</td>
</tr>
<tr>
<td>17</td>
<td>Fuel City II 801 S. Industrial Blvd. Dallas, TX 75207</td>
<td>FRSTX and PST</td>
<td>FRSTX (ID# 110033969212) – No date reported. PST (ID# 0074362) – One 20,000 gallon diesel tank, one 20,000 gallon gasoline tank, and one 12,000 gallon gasoline tank in use.</td>
<td>The site is at-grade and additional ROW would occur at the north east corner of the property.</td>
<td>4 and 9</td>
</tr>
<tr>
<td>32</td>
<td>Kwik Stop 339 S. Industrial Blvd. Dallas, TX 75207</td>
<td>LPST, PST, and IOP</td>
<td>LPST (ID# 113865) - (4.1) Groundwater impacted, no apparent threats or impacts to receptors. (6A) Final concurrence issued, case closed. PST (ID# 0024714) – Three 10,000 gallon gasoline tanks are in use. IOP (ID# 706) – Groundwater affected by VOCs. Certificate issued 2/19/08.</td>
<td>The site is at-grade and adjacent to the existing ROW. No additional ROW required at this site.</td>
<td>3 and 10</td>
</tr>
<tr>
<td>35</td>
<td>Burnett Field SW Corner of Colorado Blvd. and Jefferson Blvd. Dallas, TX</td>
<td>VCP and APAR</td>
<td>VCP (ID# 1873) – Soils and groundwater affected by VOCs, SVOCs, metals, and TPH. APAR (ID# 1873) – Status is active and the APAR was received on 10/16/07.</td>
<td>The site is above-grade and adjacent to the proposed improvements. No additional ROW required at this site.</td>
<td>7</td>
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<tr>
<td>Site</td>
<td>Site Name/ Site Information</td>
<td>Database Listing</td>
<td>Regulatory Status</td>
<td>Gradient and Anticipated Property Impact</td>
<td>Constraints Maps Sheet No.</td>
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</tr>
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<td>52</td>
<td>Former Texas Delivery Service 840 S. Lamar Dallas, TX 75202</td>
<td>LPST, PST, and VCP</td>
<td>LPST (ID# 112803) – (4.2) No groundwater impact, no apparent threats or impacts to receptors, (6A) Final concurrence issued, case closed. LPST (ID# 097002) (4A) Soil contamination only, requires full site assessment and remedial action plan (RAP), (6A) Final concurrence issued, case closed. PST (ID# 0057966) – Eleven tanks storing unknown substance were removed from the ground in July and August of 1990. VCP (ID# 2118) – Soils and groundwater affected by VOCs, metals, and TPH.</td>
<td>Site is located above-grade and approximately 150 ft from the existing ROW.</td>
<td>5</td>
</tr>
</tbody>
</table>

1 Site corresponds to Map ID # listed in the database reports (October 12, 2011 and February 15, 2012).

Site 2 (Hardfacing Specialty Company) is located at-grade and within the proposed ROW. It is anticipated that the entire parcel would be acquired. The site would be physically impacted by the construction activities of the proposed project. The proposed construction activities at this site would consist of grading, excavation, and drilling of piers for bridge supports. Site 2 is considered to pose a low risk to the construction of the proposed project from available database information; however, there is a possibility that contamination is present at the site and could be encountered during construction.

Site 4 (National Linen Service/Angelica Textile) is located at-grade and adjacent to the proposed project. The building on the site is located approximately 600 ft north of the proposed ROW. From the building to approximately 350 ft from the proposed ROW is a paved area for employee parking and truck parking. From the paved area at the site south to the proposed project is a vegetated area containing trees and herbaceous vegetation. No signs of stress to the vegetation resulting from potential contamination were observed. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. The proposed edge of pavement would be located approximately eight ft closer to the site. Site 4 is considered to pose a low risk to the construction of the proposed project due to the construction activities at this location and the distance the proposed project is from the facilities at this site.

Site 5 (Morrison Automotive) is located at-grade and adjacent to the existing ROW on the west side of IH 35E. No additional ROW would be required at this site. The topography in the area gently slopes to the north and east, toward IH 35E. No construction activities are proposed immediately adjacent to the site. Proposed construction activities would occur along Fleming Place on the east side of IH 35E, approximately 350 ft from the site, and along the northbound frontage road. Site 5 is considered to pose a low risk to the construction of the proposed project due to its proximity to the proposed construction areas; however, there is a possibility that contamination is present at the site and could be encountered during construction.

Site 6 (Millet the Printer) is located above-grade and adjacent to the existing ROW on the north side of IH 30 at Saint Paul Street. No additional ROW would be required at this site.
The site is located approximately 75 ft north of proposed improvements to IH 30. No signs of stress to the vegetation resulting from potential contamination were observed between the site and the existing roadway. Minimal excavation would near the site for the improvements to IH 30. The existing pavement would be removed, the area graded, and repaved. Site 6 is considered to pose a low risk to the construction of the proposed project due to the chemical materials at this location and the distance the proposed construction is from this site.

Site 8 (RSR Corporation) is located at Westmoreland Road and Singleton Boulevard and encompasses a 13.6 square mile area. The south limit of the site extends into the proposed project limits on IH 30 west of the Trinity River. Remediation activities have already occurred to assess and clean up a portion of the contaminated Murmur Corporation Site 3/RSR Corporation superfund site. One form of transport for the contamination from this site was through the air. The prevailing south and southwest winds would carry contaminants from the smelting plant. The proposed project is located along the southern boundary of the site. This site is not located within, or immediately adjacent to, the proposed project; however, the boundary of the affected area does extend into the proposed project limits. Site 8 is considered low risk due to its location in relation to the proposed project and the possibility that contamination has extended into the proposed project limits.

Site 10 (Dallas United States Postal Service) is located adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Loading docks and parking for semi-trailers are located immediately adjacent to the existing ROW. On the north side of the building there is a service area and parking for fleet vehicles. Minimal excavation would occur adjacent to the site to improve the frontage road. The existing pavement would be removed, the area graded, and repaved. Site 10 would not be physically impacted by the proposed construction activities; however, a possibility exists that contamination could have extended into the proposed construction area.

Site 14 (In & Out Store/ Buy Low Discount) is located at-grade and adjacent to the existing ROW. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Adjacent to this site, the proposed project would improve the exit ramp as it intersects with Riverfront Boulevard. The proposed improvements would follow the same general alignment as the existing roadway. Minimal grading/excavation would be needed at this location. The PSTs at this site are located near the southeast corner of the parcel, approximately 150 to 200 ft away from the proposed edge of pavement. The topography in this area gently slopes away from the proposed project limits toward the east. Site 14 is considered to pose a low risk to the construction of the proposed project due to the proposed construction activities adjacent to the site, the location of the PSTs, and the topography of the area.

Site 16 (Alford Refrigerated Warehouses) are located approximately 350 to 500 ft from the existing ROW on the east side of Cadiz Street. The site would not be physically impacted by the construction activities of the proposed project and no additional ROW would be required at this site. Currently, the site has been cleared of all structures. All proposed
construction activities would occur within the existing TxDOT ROW. The topography in the
area gently slopes to the west and south to the Historic Trinity River Channel, away from
the proposed construction activities. Site 16 is considered to pose a low risk to the
construction of the proposed project due to its location in relation to the proposed
improvements; however, there is a possibility that contamination could have extended into
the proposed construction area.

Site 17 (Fuel City II) is located adjacent to the existing ROW. A small amount of ROW
would be acquired from the southeast corner of the parcel. The site would not be physically
impacted by the construction activities of the proposed project. Bridge piers would be
drilled and constructed immediately adjacent to the site. There are no recorded incidences
of contamination releases for this site. Site 17 is considered to pose a low risk to the
construction of the proposed project due to the available database information; however,
there is a possibility that unknown contamination could be present at this site.

Site 32 (Kwik Stop) is located adjacent to the existing ROW. The site would not be
physically impacted by the construction activities of the proposed project and no additional
ROW would be required at this site. Minimal excavation would occur adjacent to the site to
improve the arterial road. The existing pavement would be removed, the area graded, and
repaved. Site 32 is considered to pose a low risk to the construction of the proposed
project due to the minimal excavation required at this location; however, there is a
possibility that contamination could be encountered during the proposed construction
activities.

Site 35 (Burnett Field) is located slightly above-grade and adjacent to the proposed project.
The site would not be physically impacted by the construction activities of the proposed
project and no additional ROW would be required at this site. The topography gently slopes
to the north and east toward the proposed construction area. Minimal excavation would
occur adjacent to the site to improve the arterial road. The existing pavement would be
removed, the area graded, and repaved. Site 35 is considered to pose a low risk to the
construction of the proposed project due to the minimal excavation required at this location;
however, a slight possibility exists that contamination could be encountered during the
proposed construction activities.

Site 52 (Former Texas Delivery Service) is located near the existing ROW. The site would
not be physically impacted by the construction activities of the proposed project and no
additional ROW would be required at this site. Site 52 is considered to pose a low risk to the
construction of the proposed project due to its location in relation to the proposed
construction activities; however, there is a possibility that contamination could have
extended into proposed construction area.

In addition to the sites listed in the environmental database report, previous environmental
reports for projects within the Dallas Floodway were reviewed to compile information
regarding soil analytical data within approximately 200 ft of the proposed ROW at IH 30 and
IH 35E. Because soil borings were performed throughout the Dallas Floodway and not just
within the proposed project limits, the 200 ft distance was selected to provide a better
characterization of the locations of contaminated soils within and adjacent to the proposed project. The dates of the reports ranged from 1984 to 2012. The reports reviewed are described below and the soil boring sites are depicted on the Constraints Maps in Appendix D.

HNTB, Hazardous, Toxic and Radioactive Waste (HTRW) Work Plan for Proposed Levee Modifications, prepared for City of Dallas, January 9, 2012:
The report summarized readily available soil analytical data from six historical environmental reports within the Dallas Floodway and portions of the Dallas Floodway Extension. The historical environmental reports were reviewed to compile information regarding soil analytical data over the Dallas Floodway and portions of the Dallas Floodway Extension. The soil analytical data was tabulated and compared to TCEQ's standards which were revised in 2010, and compared to the locations of planned Section 408 modifications and utility modifications, to evaluate the potential for encountering impacted soil during the planned modifications construction activities.

Terra-Mar, Inc., Geotechnical/Environmental Investigation, Trinity River Implementation Plan, Dallas, Texas, prepared for Halff Associates, Inc. Dallas, Texas, October 12, 1999:
A total of 13 soil boring tests were performed. The soil borings were located within the Trinity River Floodplain, between Corinth Street and IH 30. Selected soil samples were collected from the soil borings and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), the eight Resource Conservation and Recovery Act (RCRA) metals, and herbicides and pesticides. Two samples were also analyzed for the toxicity characteristic leaching procedure (TCLP) for chromium, lead and mercury. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Five of the soil borings are located along the proposed project limits. SB-12 and SB-13 are located along IH 30 and SB-7, SB-8, and SB-9 are located along IH 35E. The results of four previous studies were used in preparation of the Terra-Mar report. These additional studies include:

- Alan Plummer and Associates, Inc., Sampling and Testing of Existing Soils and Sediment in the Trinity River Flood Plain and Channel, prepared for the City of Dallas, January 18, 1984. A total of six borings were performed in the vicinity of the Commerce Street, IH 30 and Corinth Street bridges. Selected soil samples were analyzed for metals and pesticides. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Three soil borings (AP-2, AP-3, and AP-5) are located north of IH 30.

- Carter & Burgess, Chain of Lakes Park – an Alternative to Town Lake, prepared for Mr. Trammel Crow, December 3, 1984. A total of 20 soil boring tests were performed in the floodplain, between Corinth Street and IH 30. Selected soil samples were analyzed for total metals, total pesticides, Extraction Procedure Toxicity (EP Tox) metals and EP Tox pesticides. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. None of these soil borings are located within or adjacent to the proposed project limits.
Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment

Maxim Engineers, Upper Trinity River Channel Sampling and Analysis for Dallas Floodway Channel Modifications, prepared for the City of Dallas, November 19, 1990. A total of 18 environmental soil boring tests were performed in the floodplain between Corinth Street and the Mockingbird Lane bridge. The purpose for this study was to evaluate the suitability of the soils within the river channel to construct levees. Six composite soil samples were analyzed for priority pollutant metals (total and leachate), pesticides and total PCBs. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Soil borings M1-13 and M1-15 are located between the eastbound and westbound lanes of IH 35E in the Dallas Floodway.

Maxim Technologies, Trinity River Sediment Sampling and Geotechnical Investigation, Trinity River Floodplain Modification, prepared for the City of Dallas, September 1, 1995. A total of 10 soil boring tests were performed in the floodplain, east of Corinth Street. This report supplemented Maxim’s report dated November 19, 1990. Additional work was performed to investigate the presence of priority pollutant metals and to investigate locations for borrow materials for a dredge spoils cap. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. None of these soil borings are located within or adjacent to the proposed project limits.

CH2M Hill, Phase II Environmental Site Assessment, Dallas Floodway, Upper Trinity River, Dallas, Texas, prepared for USACE, Fort Worth District, February 2008: The CH2M Hill report presents the results of environmental analysis conducted within the Trinity River Floodplain. A total of 96 soil probes were performed for this study. The soil borings were located within the Trinity River Floodplain, between Corinth Street and the John Carpenter Freeway/SH 183 bridge for the East Levee and the Loop 12 bridge for the West Levee. Selected soil samples were collected from the soil probes and analyzed for VOCs, SVOCs, the eight RCRA metals, herbicides, pesticides and PCBs. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. A total of twelve soil borings from this study are located within the area assessed. Three soil borings (SB016, SB023, and SB035) are located along IH 30. Nine soil borings (SB006, SB008, SB009, SB039, SB041, SB090, SB092, SB093, and SB094) are located along IH 35E.

Xenco Laboratories, Soil Analytical Laboratory Data, October 27, 2008 (text of report not available; however, the laboratory report was provided to HVJ Associates): A total of 29 soil boring tests were performed for the study. The soil borings were located within the floodplain, between Corinth Street and west of the Westmoreland Road/Mockingbird Lane bridge. Soil samples were collected from the soil borings and analyzed for VOCs, polynuclear aromatic hydrocarbons (PAHs) and the eight RCRA metals. Selected soil samples were analyzed for pesticides. Installation of groundwater monitoring wells and groundwater sampling were not performed for this study. Two soil borings are located near the proposed project limits. EB-20 is north of the proposed ROW at IH 30 and EB-23 is north of the proposed ROW at IH 35E.

2009-2010 Floodway Soil Boring Results: Dallas Floodway and Dallas Floodway Extension
Approximately 525 hollow stem auger soil borings were advanced in mid-2009 to mid-2010 as part of the geotechnical engineering study for the Dallas Floodway and Dallas Floodway Extension project (HNTB, 2009). Potential contamination in these soil borings was not confirmed analytically, as the samples were not sent to a laboratory for formal environmental analysis of Constituents of Concern (COCs). Two soil borings (FWR-02-22-CB and FWR-02-23-CB) from this report are located just north of the proposed ROW at IH 30 (Appendix D: Constraints Maps Sheet 2). Both of these geotechnical samples had contamination noted at the geotechnical laboratory. However, during the geotechnical exploration phase there were no petroleum hydrocarbon odors were noted.

The Soil COCs for the proposed construction activities are considered heavy metals. These are primarily arsenic, chromium, lead, manganese, mercury; nickel, selenium, and zinc; and, in one case, barium. Twenty-four of the 26 soil borings located within or adjacent to the proposed project limits are included in Table 8-21. Potential contamination in two soil borings (FWR-02-23-CB and FWR-02-23-CB) was not confirmed analytically and is not included in the table. The table also includes the COCs for each of the soil borings. The table contains the detected concentration levels of each of the COCs relevant to the current TCEQ Tier 1 Protective Concentration Levels (PCLs), the Texas-Specific Soil Background Concentrations (TSSBC), and the potential exposure scenario of the Texas Risk Reduction Program (TRRP) Tier 1 PCLs of the total soil combined (\(\text{TotSoilComb}\)) pathway. It is to be noted, that for this assessment, the relevant pathway for comparison purposes is the \(\text{TotSoilComb}\) pathway for a 30 acre source area. The \(\text{TotSoilComb}\) is the PCL for human health exposures to surface soils through the combined ingestion of soil and vegetables, inhalation of volatiles and particulates, and dermal contact pathways. The table includes several soil analytical results that have a “J” flag, indicating that the reported result is an estimated value.
### Table 8-21: Summary of Constituents of Concern

<table>
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<tr>
<th>Soil Boring ID</th>
<th>COCs</th>
<th>Depth (ft bgs)</th>
<th>Concentration Levels (mg/Kg)</th>
<th>TSSBC (mg/Kg)</th>
<th>Total Soil Comb (mg/Kg)</th>
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<td>Zinc</td>
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<td>29 and 64</td>
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<td>22 and 22</td>
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<td>16.2 and 55.2</td>
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<td>6.86J, 9.49J, and 5.95J</td>
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In addition to assessing the metals in the soil borings, data from some of the studies included analysis of volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), pesticides, herbicides, and polychlorinated biphenyl (PCBs) and whether any concentrations exceeded the TRRP Critical PCLs. Soil boring AP-2 exceeded the TRRP Critical PCL (GWSoilIng) for aldrin, a pesticide in a sample collected at 4 to 6 ft below ground surface (bgs.). Soil boring SB016 exceeded the TRRP Critical PCL (TotSoilComb) for benzo(a)pyrene a SVOC in a sample collected from 0 to 2 ft below ground surface (bgs). The detected concentrations of each of the COCs are below the relevant potential exposure scenario of the TRRP Tier 1 PCLs of the total soil combined pathway with the exceptions of aldrin and benzo(a)pyrene. Soil boring AP-2 had a sample above the TRRP Critical PCL. Soil boring SB016 had one sample collected 0 to 2 ft bgs exceed the TRRP Critical PCL for benzo(a)pyrene. If these areas are disturbed during construction they would have to be addressed within the plans and specifications.

The main exposure pathway for the reported heavy metals, aldrin, and benzo(a)pyrene detected throughout the Dallas Floodway is by inhalation of fugitive dust generated during construction activities; however, keeping the materials damp would help reduce exposure. Added worker safety protection during construction activities such as wearing a protective dust mask is a feasible method for reducing potential exposure risk to a COC along with keeping the construction area damp. The plans and specifications for the proposed project would include a notice to contractors informing them of the heavy metals, aldrin, and benzo(a)pyrene known at this time.

Additional assessment would be on-going for the facilities that pose an environmental concern to the proposed project in order to provide a better determination of the impact(s) that these past operations may have on the proposed project. As more detailed project

<table>
<thead>
<tr>
<th>Soil Boring ID</th>
<th>COCs</th>
<th>Depth (ft bgs)</th>
<th>Concentration Levels (mg/Kg)</th>
<th>TSSBC (mg/Kg)</th>
<th>TotSoilComb (mg/Kg)</th>
<th>Corridor Map Sheet No.</th>
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<tbody>
<tr>
<td>SB041</td>
<td>Mercury</td>
<td>0-2 and 4-6</td>
<td>0.0565J and 0.0606J</td>
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<td>SB090</td>
<td>Lead</td>
<td>0-2 and 13-15</td>
<td>32.5 and 19.4</td>
<td>15</td>
<td>500</td>
<td>8</td>
</tr>
<tr>
<td>SB092</td>
<td>Arsenic</td>
<td>13-15</td>
<td>6.05J</td>
<td>5.9</td>
<td>24</td>
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</tr>
<tr>
<td></td>
<td>Lead</td>
<td>32</td>
<td>32</td>
<td>15</td>
<td>500</td>
<td>8</td>
</tr>
<tr>
<td>SB093</td>
<td>Arsenic</td>
<td>0-2 and 13-15</td>
<td>6.57J and 7.78J</td>
<td>5.9</td>
<td>24</td>
<td>8</td>
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<tr>
<td></td>
<td>Lead</td>
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<td>47.4</td>
<td>15</td>
<td>500</td>
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<td></td>
<td>Mercury</td>
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<td>0.0837</td>
<td>0.04</td>
<td>2.1</td>
<td></td>
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<tr>
<td>SB094</td>
<td>Arsenic</td>
<td>0-2 and 13-15</td>
<td>6.41J and 6.04J</td>
<td>5.9</td>
<td>24</td>
<td>8</td>
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<tr>
<td></td>
<td>Chromium</td>
<td>13-15</td>
<td>30.4</td>
<td>30</td>
<td>27,000</td>
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<tr>
<td></td>
<td>Mercury</td>
<td>0-2 and 0-2</td>
<td>0.0478J and 0.0868J</td>
<td>0.04</td>
<td>2.1</td>
<td></td>
</tr>
</tbody>
</table>

Notes:
J - Reported result is an estimate
ft bgs - feet below the ground surface
NA - Not Available
(1) – Protection to groundwater standard (GWSoilIng)
TotSoilComb – May 2011 Tables for a 30 acre source area (Table 1)
design is developed, the potential for these hazardous materials sites to affect the proposed construction would be evaluated. A Soil and Groundwater Management Plan is being developed and more information will be included in a future version of this document. It is recommended that Phase II Environmental Site Assessments be performed at the high risk sites prior to the development of the plans and specifications.

At this time, utility adjustment requirements are anticipated, but specifics have not yet been determined. There is a potential for contamination to be encountered during utility adjustments. Coordination with utility companies concerning this contamination would be addressed during the ROW stage of project development. It is anticipated that all utility adjustments or relocations would be completed prior to construction.

The proposed project includes the demolition and removal of bridge and building structures. Asbestos containing materials (ACM) and lead based paint (LBP) testing would be performed on the existing bridge structures. It is recommended that ACM and LBP testing be performed on the building structures to be removed dependent upon the age of the individual structure. TxDOT would notify the Department of State Health and Human Services (DSHS) of the bridge demolition 15-working days prior to the scheduled demolition.

Any unanticipated hazardous materials encountered during construction would be handled according to applicable federal, state, and local regulations per TxDOT Standard Specifications. The contractor would take appropriate measures to prevent, minimize, and control the spill of hazardous materials in the construction staging area. All construction materials used for this project would be removed as soon as the work schedules permit.

Should hazardous materials/substances be encountered, the TxDOT Dallas District Hazardous Materials Section would be notified and steps would be taken to protect personnel and the environment. If necessary, the plans, specifications, and estimates (PS&E) would include provisions for the appropriate soil and/or groundwater management plans for activities within these areas. The management plans would be initiated in accordance with all applicable federal, state and local regulations.

8.10 Construction Impacts

No-Build Impact
Under the No-Build Alternative for Dallas Horseshoe Project, construction activities would not occur. Consequently, there would be no construction related impacts.

Build Impact
Temporary impacts associated with construction activities would occur. Due to operations normally associated with road construction, there is a possibility that noise levels would be above normal in the areas adjacent to the ROW. In general, construction is normally limited to daylight hours when occasional loud noises are more tolerable. However, substantial nighttime construction at the Mixmaster and other areas of heavy traffic is anticipated in order to minimize construction impacts to road users. Provisions would be included in the plans and specifications that require the contractor to make every reasonable effort to
Note: See Sheet 10 of 10 for locations of all existing heliports adjacent to proposed project.

LEGEND
- Existing Right-of-Way
- Proposed Right-of-Way
- Air Receiver Cross Section
- High Risk Hazardous Material Site
- Park
- Potential Displacement
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
- Water Feature
- Wetland Feature
- Large Tree
- Woodland Area

CORRIDOR MAPS
SHEET 5 OF 10

Dallas Horseshoe Project
IH 30 and IH 35E

Environmental Assessment
Dallas County, Texas
Dallas Horseshoe Project
IH 30 and IH 35E
Environmental Assessment
Dallas County, Texas

LEGEND
- Existing Right-of-Way
- Proposed Right-of-Way
- Air Receiver Cross Section
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- Park
- Potential Displacement
- Non-Impacted Noise Receiver
- Impacted Noise Receiver
- Water Feature
- Wetland Feature
- Large Tree
- Woodland Area
Appendix C

SGMP Definitions and Acronyms
SGMP Definitions

**Affected soil** – soils contaminated with constituents/chemicals of concern above TIER 1 PCLs

**Affected groundwater** – groundwater contaminated with constituents/chemicals of concern above TIER 1 PCLs

**Metals Screening Zone** – Area of construction activity within the Trinity River Floodway or RSR CERCLIS boundary that requires specific metals screening procedures (outlined in Figure 3 Flowchart) in addition to standard waste screening procedures outlined in the SGMP (See Figure 2 Flowchart)

**SGMP Zone** – Areas of special construction activity requirements within the entire Horseshoe Project

**Excavation of origin** – Excavated area within 1,000 feet of original contamination source area

**Chemicals/Constituents of Concern (COC)** – Contaminants potentially occurring within SGMP Zone
SGMP Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>APAR</td>
<td>Affected Property Assessment Report</td>
</tr>
<tr>
<td>BGS</td>
<td>Below Ground Surface</td>
</tr>
<tr>
<td>CERCLIS</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Information System</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>COC</td>
<td>Chemicals/Constituents of Concern</td>
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<tr>
<td>DBC</td>
<td>Design Build Contractor</td>
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<tr>
<td>DFW</td>
<td>Dallas/Fort Worth</td>
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<tr>
<td>DWU</td>
<td>Dallas Water Utilities</td>
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<tr>
<td>EPA</td>
<td>Environmental Protection Agency</td>
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<tr>
<td>ESA</td>
<td>Environmental Site Assessment</td>
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<tr>
<td>FID</td>
<td>Flame-ionization Detector</td>
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<tr>
<td>HAZWOPER</td>
<td>Hazardous Waste Operations and Emergency Response Standard</td>
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<tr>
<td>HNTB</td>
<td>HNTB Corporation</td>
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<tr>
<td>LCA</td>
<td>LCA Environmental, Inc.</td>
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<td>LEL</td>
<td>Lower Explosive Limit</td>
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<td>LPST</td>
<td>Leaking Petroleum Storage Tank</td>
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<td>MSZ</td>
<td>Metal Screening Zone</td>
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<tr>
<td>NPL</td>
<td>National Priorities List</td>
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<tr>
<td>O&amp;G</td>
<td>Oil and Grease</td>
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<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration</td>
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<tr>
<td>PAH</td>
<td>Polycyclic Aromatic Hydrocarbons</td>
</tr>
<tr>
<td>PCB</td>
<td>Polychlorinated Biphenols</td>
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<td>PCL</td>
<td>Protective Concentration Level</td>
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<td>PID</td>
<td>Photo-ionization Detector</td>
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<td>POTW</td>
<td>Publicly Owned Treatment Works</td>
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<tr>
<td>PPE</td>
<td>Personal Protective Equipment</td>
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<tr>
<td>PS&amp;E</td>
<td>Plans Specifications and Estimates</td>
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<tr>
<td>PST</td>
<td>Petroleum Storage Tank</td>
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<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
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<td>ROW</td>
<td>Right of Way</td>
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<tr>
<td>RSR</td>
<td>RSR Corporation</td>
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<td>SGMP</td>
<td>Soil Groundwater Management Plan</td>
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<td>SVOC</td>
<td>Semi-Volatile Organic Compound</td>
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<td>TAC</td>
<td>Texas Administrative Code</td>
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<td>TCEQ</td>
<td>Texas Commission on Environmental Quality</td>
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<td>TPH</td>
<td>Total Petroleum Hydrocarbons</td>
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<td>TRRP</td>
<td>Texas Risk Reduction Program</td>
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<td>TxDOT</td>
<td>Texas Department of Transportation</td>
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<td>US DOT</td>
<td>United States Department of Transportation</td>
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<tr>
<td>VCP</td>
<td>Voluntary Cleanup Program</td>
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<tr>
<td>VOC</td>
<td>Volatile Organic Compound</td>
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<tr>
<td>XRF</td>
<td>X-Ray Fluorescence</td>
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