ANALYSIS OF BROWNFIELD CLEANUP ALTERNATIVES – FORMER DICKSHIRE DISTRIBUTING PROPERTY
203-309 Chelsea Street, El Paso, Texas

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El Paso, Texas 79905

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Sign-off Sheet

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Abbreviations

ABCA	Analysis of Brownfield Cleanup Alternatives
ACM	asbestos-containing material
AHERA	Asbestos Hazards Emergency Response Act
aka	also known as
amsl	above mean sea level
ASTM	ASTM International
bgs	below ground surface
CFC	chlorofluorocarbons
COC	contaminant of concern
DMD	Downtown Management District (El Paso)
EIT	Engineer in Training
ESA	environmental site assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FY	fiscal year
GSI	GSI Environmental Inc.
LBP	lead-based paint
LPST	leaking petroleum storage tank
MCAR	MCAmericas Realty, Inc.
mg/cm^3	milligrams per cubic centimeter
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOAA	National Oceanic and Atmospheric Administration
OSHA	Occupational Safety and Health Administration
PAH	polynuclear (or polycyclic) aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PCL	Protective Concentration Level
PG	Professional Geologist
RBM	regulated building material
SAP	Sampling and Analysis Plan
SF	square foot or square feet
Stantec	Stantec Consulting Services Inc.

TAC	Texas Administrative Code
TAHPA	Texas Asbestos Health Protection Act
TCEQ	Texas Commission on Environmental Quality
TCLP	toxic characteristic leaching procedure
TDSHS	Texas Department of State Health Services
TELRR	Texas Environmental Lead Reduction Rules
TPH	Total Petroleum Hydrocarbons
TRPP	Texas Risk Reduction Program
TSSBC	Texas-specific soil background concentration
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	underground storage tank
VA	Veterans Administration
VCP	Voluntary Cleanup Program
VOC	volatile organic compound

1.0 INTRODUCTION AND BACKGROUND

This Analysis of Brownfield Cleanup Alternatives (ABCA) has been prepared by Stantec Consulting Services Inc. (Stantec) for the former Dickshire Distributing Property (the "Site" or "Property") located at 203-309 Chelsea Street within the San Juan Neighborhood of the City of El Paso (City). The ABCA was prepared in part to meet the requirements for submittal by MCAmericas Realty, Inc. (MCAR) of an application for a United States Environmental Protection Agency (USEPA) Brownfields Cleanup Grant as part of USEPA's Fiscal Year (FY) 2022 Brownfields Grant Competition. The Site is located in a mixed residential/commercial/industrial area in which initial development dates back to the early 1900s. The 203 Chelsea Street parcel has been used for the past 15 years by a bus company for storage, offices, and maintenance. The parcel was previously used (circa 1958-2004) as a beer distribution facility (Dickshire Distributing and Montana Beverage Company), which included vehicle washing, maintenance, and fueling areas. Prior to development of the six existing buildings during 1963-1976, the Site appears to have been occupied during 1941 through 1955 by 5 to 15 small structures – possibly residences. The Site is bordered to the south by several sets of active rail lines within a rail corridor that dates back to at least 1896. Several sets of rail spurs historically extended onto the south end of the Site. The Site is bordered to the east by Chelsea Street, and to the west by a concrete-lined drainage ditch followed by a 13-acre parcel that includes the headquarters for MCAR (the Cardwell Collaborative building), a Veterans Administration (VA) Wellness Center completed in 2020, and a 4-acre stormwater retention basin/green space (the "MCA District Park." The Site and buildings were vacant at the time of acquisition by MCAR on August 31, 2021.

The purpose of this ABCA is to outline environmental cleanup alternatives for the Site and to inform selection of an alternative that will best advance MCAR's goals for redevelopment of the Site for the planned initial development of a $38 million, 2-story 80,000 square foot (SF) medical services/academic research building. Seven alternatives are evaluated based on their anticipated: 1) effectiveness, 2) implementability, and 3) cost.

The Site encompasses two parcels totaling 5.72 acres acquired by MCAR in August 2021. Phase I and II environmental site assessments (ESAs) were completed for the Site by MCAR in 2021 prior to its acquisition. In addition, surveys for asbestos-containing materials (ACMs), lead-based paint (LBP), and other regulated building materials (RBMs) were completed by MCAR in September through November 2021. If USEPA Cleanup Funding is awarded, an updated ABCA will be prepared in accordance with USEPA requirements.

1.1 SITE LOCATION

The Site encompasses two parcels totaling 5.72 acres acquired by MCAR in August 2021. The main "south" parcel (203 Chelsea Street) occupies 5.61 acres and contains five main buildings with a combined area of ±76,267 SF and individual areas of 28,950, 20,220, 15,000, 8,437, and 3,660 SF. These structures are primarily 1-story office and warehouse buildings constructed of cement blocks between 1963 to 1976. The smaller "northeast" parcel (309 Chelsea Street) occupies an area of 0.11 acres and contains a 2-story building constructed in 1965 with a 2,881 SF former restaurant area on the 1st floor and four apartments totaling 2,257 SF on the 2nd floor.

The Site is located in a mixed residential/commercial/industrial area in which initial development dates back to the early 1900s. The Site is bordered to the south by several sets of active rail lines within a rail corridor that dates back to at least 1896. The Site is bordered to the east by Chelsea Street, and to the west by a concrete-lined drainage ditch (the "Coors Channel") followed by a 13-acre parcel that includes the headquarters for MCAR (the Cardwell Collaborative building), a VA Wellness Center completed in 2020, and the 4-acre MCA District Park. The general boundaries for the Site are shown on **Figure 1** and the detailed site layout on **Figure 2**.

1.2 PHYSICAL SETTING

The following summary of the physical setting is adapted from the Phase I ESA Report for the 203 Chelsea Street parcel (Wood, 2021a).

1.2.1 TOPOGRAPHY

Based on the El Paso 7.5-minute topographic map sheets (United States Geological Survey [USGS], 2012), the ground surface elevation on the Site is approximately 3,680 feet above mean sea level (amsl). The areas surrounding the Site have a gentle slope toward the south-southwest.

Based on observations by Wood personnel during the Phase I ESA site reconnaissance, it appeared that surface water from the Site would generally flow towards the south and west and eventually flow offsite into a lined stormwater channel (the Coors Channel) that adjoins the west side of the Site. Off-site surface water appears to flow onto the Site from the adjoining property to the north. These general observations were consistent with observations by Stantec during the Phase II ESA field investigation.

1.2.2 SOILS

According to the Phase I ESA report by Wood (2021a), based on the Soil Survey for El Paso County, Texas, the soils at the Site are classified as Bluepoint Association, rolling (BPC) and Made Land, Gila Soil (Mg). The western, central, and southern portions of the Site (about 66% of its land area) is on Made Land, Gila Soil material which consists of up to 63 inches of well drained fine sandy loam, gravelly sandy loam, and silty loam. Made Land, Gila Soil lies on the flood plain of the Rio Grande and consist of river deposits that have been flattened and re-worked to flatten terrain, straighten the river channel, and build levees in the area for development. The northwestern third of the Site consists of Bluepoint association soils. Bluepoint association consists of up to 60 inches of excessively drained fine sands and loamy fine sands. The Bluepoint series originates from outwash sediments located just above the flood plain of the Rio Grande.

Subsurface conditions at the Property, based on 19 soil borings that extended to depths of up to 15 feet below ground surface (bgs), were summarized by Stantec in the Phase II ESA report (Stantec, 2021a) as follows:

> *Soil encountered in the northern portion of the Property typically consisted of fill and silty sand to poorly graded sand from approximately 0 to 15 feet bgs. A medium to high plasticity clay was observed beneath the vehicle service building beginning at 3 feet bgs and extending to approximately 13.25 feet bgs in boring B09 (**Figure 2**). The southern half of the Property typically consisted of a sandy silt or poorly graded sand fill with asphalt, concrete, and/or ballast debris from 0 to 5 feet bgs. A high plasticity clay was encountered beginning at approximately 5 to 7 feet bgs and alternated with a poorly graded fine sand to 15 feet bgs. Very dark gray to black stained soils with hydrocarbon odors were observed in borings B10, B12, B14-B16, B18-B19 in the southern portion of the Property, primarily in the clay intervals. Groundwater was not encountered at the Property. Soil boring logs are presented in Appendix A.*
>
> *A hard interval of asphalt, concrete, and/or ballast was encountered from approximately 2 to 4 feet bgs in the southwestern portion of the Property near the former gas pumps and affected drilling at borings B10 through B12, and near the historical rail spur adjacent to borings B13 and B14. Boring B20 met refusal on hard concrete at 5 feet bgs and the probe was unable to penetrate further. Boring B01 located in the fill area in the northwestern corner of the Property was unable to be advanced with a hand auger due to soft, collapsing silts and hard concrete, metal, and wood debris.*

1.2.3 GROUNDWATER

According to the Phase I ESA report by Wood (2021a), based on published information, groundwater in the vicinity of the Site occurs in deposits of the Rio Grande Alluvial Aquifer. The Texas Water Development Board (TWDB) considers the Rio Grande Alluvial Aquifer part of the Hueco Bolson Aquifer. The Hueco Bolson consists of approximately 9,000 feet of clay, silt, sand, and gravel located east and west of the Franklin Mountains. About half the recharge to the Hueco Bolson is from the Rio Grande, and the remainder from infiltration through permeable mountain front alluvial deposits (Anaya, et al, 2016). According to gauging data collected by the Texas Water Development Board from wells in the area, depth to groundwater ranges from 20 to 100 feet below ground surface. Groundwater flows towards the Rio Grande located about 1.3 miles south of the Property.

However, based on a Phase I ESA report prepared by GSI Environmental Inc. (GSI) in 2018 for the neighboring Property at 500 Revere Street (GSI, 2018), the depth to groundwater in the site vicinity – as reported by the Texas Commission on Environmental Quality (TCEQ) – ranges from 100–1,200 feet bgs with potential perched water at 50–100 feet bgs. As such, no groundwater samples were proposed as part of the Phase II ESA by Stantec, and no groundwater was encountered in the 19 borings sampled to depths of 15 feet bgs as part of the Phase II ESA.

1.3 FORECASTED CLIMATE CONDITIONS

According to the National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information for Texas, the Texas Climate is characterized by hot summers and cold/mild winters. The primary source of moisture is from the Gulf of Mexico, which results in extreme weather events including, hurricanes, tornadoes, droughts, heat waves, cold waves, and intense precipitation. The NOAA summary report for the State of Texas is included in **Attachment A**.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) 4802140040B with an effective date of October 15, 1982, the Site is located within Zone C, which are areas of minimal flood hazard (no shading). The FEMA FIRM is included as **Attachment B**. However, the flood map is in the process of being updated, and a preliminary revised FIRM (Map Number 48141C0393F) dated July 8, 2020, has been published by FEMA. A copy of this map is included as **Attachment C**. As shown on the revised map, there are extensive proposed changes in the mapped flood risk areas at the Site and throughout the surrounding neighborhood. Extensive areas that were previously mapped as having minimal flood hazard are proposed to be mapped as Zone A – a high risk flood zone that has a one percent chance of flooding each year. These areas include the Coors Channel and the area directly bordering the western edge of the Site as well as a small area within the Site adjacent to Chelsea Street

Based on the nature of the Site and its proposed reuse (redevelopment), changing temperature, precipitation changes, changing ecological zone, and changing groundwater table are not likely to significantly affect the Site.

1.4 SITE HISTORY

The Site is located in a mixed residential/commercial/industrial area in which initial development dates back to the early 1900s. The 203 Chelsea Street parcel has been used for the past 15 years by a bus company for storage, offices, a passenger depot, and vehicle maintenance. The parcel was previously used (circa 1958-2004) as a beer distribution facility (Dickshire Distributing and Montana Beverage Company), which included vehicle washing, maintenance, and fueling areas. Prior to development of the six existing buildings during 1963-1976, the Site appears to have been occupied during 1941 through 1955 by 5 to 15 small structures – possibly residences. The Site is bordered to the south by several sets of active rail lines within a rail corridor that dates back to at least 1896. Several sets of rail spurs historically extended onto the south end of the Site. The Site and buildings were vacant at the time of acquisition by MCAR on August 31, 2021. The two parcels forming the Site were both purchased by MCAR from a private party on August 31, 2021. Ownership is fee simple and MCAR is the sole owner. The past owner (Milo TX1 LLC) filed as a limited liability company (LLC) in the State of Texas on 12/21/2006 – which is the same year they purchased the Property. The previous owners also owned the bus company (El Paso Los Angeles Limo; also known as [aka] Limousine Express; aka Los Limousines) that operated at the Property from 2006 through 2019. MCAR has no familial, contractual, corporate, financial, or other relationships/affiliations with Milo TX1 LLC or other prior owners, operators, or potentially responsible parties.

1.5 PREVIOUS ENVIRONMENTAL CLEANUP ACTIVITIES

A Phase I ESA for the 203 Chelsea Street parcel was completed by Wood Environment & Infrastructure Solutions, Inc. (Wood, 2021a) in accordance with ASTM E1527-13 on May 17, 2021, on behalf of MCAR. The Phase I ESA report included the following summary of records of past petroleum underground storage tanks (USTs) at the 203 Chelsea Street property, their reported removal, and TCEQ oversight on contamination documented at the time of removal of one or more USTs:

> *Dickshire Distributing located at 203 N. Chelsea Street (the Site). This facility is listed as an inactive UST facility. TCEQ Central Registry records indicate the Site had a 1,000-gallon and a 2,000-gallon UST for storing diesel fuel that were installed in 1966; and a 10,000-gallon UST for storing kerosene installed in 1980. A leak was reported in January 1996 while the USTs were being removed from the ground and assigned an LPST [Leaking Petroleum Storage Tank] number (112097). Online TCEQ records show that this facility received a final concurrence letter in 1997 stating that the vertical extent of contamination was defined, and the assessment results documented that groundwater was not affected. This LPST facility having been on the Site is considered a REC in connection to the facility. The readily available records did not include sufficient information to determine the environmental conditions of the soils surrounding the USTs. Even though the TCEQ's provided concurrence for closure of the LPST case, the remnant or residual impacts from the release may still exist on the Site.*

A Phase I ESA for the 309 Chelsea Street parcel was completed by Wood on May 18, 2021, on behalf of MCAR (Wood, 2021b). This report found no records of previous environmental assessment or cleanup activities having been completed at the 309 Chelsea Street parcel.

1.6 SITE ASSESSMENT FINDINGS

A Phase II ESA was completed by Stantec for the Site in 2021 (Stantec, 2021a), funded through a USEPA Brownfields Assessment Grant awarded to the El Paso Downtown Management District (DMD) in 2020. Up to three soil samples per boring were collected from 19 boring locations and analyzed for arsenic and lead, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), and/or total petroleum hydrocarbons (TPH). Groundwater was not sampled as it was not encountered at maximum depth explored (15 feet), and data from regional groundwater studies reviewed by Stantec for nearby remedial sites suggested that the depth to groundwater at the Site is >100 feet. The Phase II ESA was completed in accordance with a Sampling and Analysis Plan (SAP) prepared by Stantec, dated May 25, 2021 (Stantec, 2021b), and reviewed/approved by USEPA on May 26, 2021.

In addition to the Phase II ESA, funding from the USEPA Brownfields Assessment Grant awarded to DMD was also used to complete RBM surveys in the six primary buildings located on the two parcels. The surveys were completed during September and October 2021 by Encon International Inc. (under subcontract to Stantec) in accordance with a RBM SAP prepared by Stantec, dated September 9, 2021 (Stantec, 2021c), and reviewed/approved by USEPA.

Analytical results for the Phase II ESA soil samples are provided on **Table 1**. A description of applicable cleanup standards for the Property referenced in the summary below (referred to in Texas as "protective concentration levels" or PCLs) is presented in Section 2.2.1. Based on data collected during the Phase II ESA and RBM surveys, key environmental concerns at the Property include the following:

<u>Lead and Arsenic Impacts in Soil</u>: Lead is the primary contaminant that will dictate remedial actions for soil at the Property as a result of its widespread occurrence throughout the western and southern portions of the Property at concentrations exceeding the Texas-Specific Soil Background Concentration (TSSBC) of 15 milligrams per kilogram (mg/kg) and the Texas combined exposure route Protective Concentration Level ($^{Tot}Soil_{Comb}$ PCL) of 500 mg/kg. Lead concentrations exceeding 15 mg/kg were measured in 19 of the 46 site soil samples analyzed for lead (and at 12 of the 19 boring locations). Lead concentrations exceeding 500 mg/kg were measured in 5 of the 46 site soil samples analyzed for lead (and at 5 of the 19 boring locations). Maximum concentrations of 7,520, 9,620, and 1,510 mg/kg were measured respectively in borings B15, B16, and B20 near the center of the south end of Property. B15 is located at the center of a former railroad spur and B16 is located adjacent to a former vehicle wash building. Former on-site activities may have contributed to lead impacts at these locations, but in other areas, the lead appears to be associated with widespread historic fill materials of unknown origin used during the historic development of the Site.

Arsenic concentrations exceeding the TSSBC of 5.9 mg/kg were measured in 12 of the 45 samples analyzed. Arsenic concentrations exceeding the $^{Tot}Soil_{Comb}$ PCL of 24 mg/kg were measured in 2 of the 45 samples. The source(s) for the arsenic impacts is unknown. However, the occurrence and relative concentrations of arsenic appear to correlate strongly with lead impacts. In the six samples with the highest lead concentrations (9,620, 7,520, 1,510, 524, 508, and 332 mg/kg), the corresponding arsenic concentrations were 32.4, 44, 14, 16.8, 7.84, and 10.9 mg/kg (which were the six highest arsenic concentrations measured at the Site). Therefore, it is anticipated that remedial measures to address lead will also fully address areas of elevated arsenic concentrations.

The two areas of documented lead/arsenic impacts are: a) a 100 by 150-foot area in the northwest corner of the Property, with concentrations exceeding one or both TSSBCs at depths up to 7 feet bgs, and irregularly shaped approximately 180- by 240-foot area in the southwest corner of the Property with concentrations exceeding one or both TSSBCs at depths up to 12 feet bgs.

<u>Oil Range and Diesel Range Total Petroleum Hydrocarbons (TPH) Impacts in Soil</u>: Gasoline range organics (reported as C6-C12 range hydrocarbons) were <u>not detected</u> in the 42 site soil samples analyzed for C6-C12 hydrocarbons. Diesel range TPH (C12-C28 range hydrocarbons) and oil range TPH (C28-C35 range hydrocarbons) were detected 9 of the 42 samples analyzed. However, the concentrations in only five samples from three borings (B14, B16, and B19) exceeded the $^{GW}Soil_{Ing}$ PCL, and the concentrations in only one sample (B16, 3-4 ft) exceeded a calculated site specific PCL for total TPH (14,800 mg/kg measured versus 12,100 mg/kg PCL). This sample location had the highest measured lead concentration, and therefore TPH impacts at this location will be addressed as part of measures to address arsenic and lead. The occurrence of the highest diesel range and oil range TPH concentrations do not appear correlate with documented petroleum UST locations. Suspected or potential sources include the vehicle wash building, leakage from railcars using the former rail spur, and long-term leakage from trucks, buses and other vehicles using roadways or parking lots over the past 60-70 years.

<u>Tetrachloroethylene (PCE) in Soil</u>: PCE was the only VOC detected at concentrations that exceed Tier 1 PCLs in the 41 site soil samples analyzed for VOCs. The measured PCE concentration of 0.0888 mg/kg in one sample (B09, 1-2 ft) collected within the vehicle service building slightly exceeded the Tier 1 $^{GW}Soil_{Ing}$ PCL of 0.05 mg/kg. PCE was also detected in a sample collected from B06 at a concentration of 0.0475 mg/kg which was slightly below the PCL. The source for the PCE impacts is unknown but could be from undocumented past use of PCE within the vehicle service building for degreasing metal parts during vehicle maintenance activities.

Hazardous Building Materials: RBMs identified within each of the six major buildings at the Property are summarized below. The presence of ACMs, LBP, and RBMs is due to the age of the buildings which were constructed during 1963 through 1976.

Building (Parcel)	**ACM**	**Materials with confirmed LBP**	**Other Observed RBMs**
Vehicle Service Building (Bldg. #1 – 203 Chelsea St.)	None found.	Asphalt floor stripe, metal door casings, metal doors, metal columns, metal I-beams, walls, metal rails, metal restroom stalls	Fluorescent lighting tubes (140), assumed polychlorinated biphenyl (PCB)-containing lighting ballasts (59), air conditioning units w/ possible chloro-fluorocarbons (CFC) (2), lead-acid batteries (3)
Vehicle Wash Building (Bldg. #2 – 203 Chelsea St.)	None found.	Metal dock edging, concrete floor stripe, metal threshold, metal bollard, metal door casing	Pad mounted transformer (non-PCB), fluorescent lighting tubes (46), PCB containing lighting ballasts (23)
Cold Storage Building (Bldg. #3 – 203 Chelsea St.)	None found.	Concrete floor stripe, metal rails, metals poles, metal column, metal dock edge, metal door casing	Fluorescent lighting tubes (53), assumed PCB-containing lighting ballasts (1), roof-top HVAC units (2), lead-acid batteries (2)
Bus Depot Building (Bldg. #4 – 203 Chelsea St.)	Penetration sealant throughout roof	Concrete wall (1 location), drywall (1 location)	Fluorescent lighting tubes (148), assumed PCB-containing lighting ballasts (14), exit signs w/ possible radioactive material (6)
Office Building (Bldg. #5 – 203 Chelsea St.)	Vinyl floor tiles (~126 SF)	None found.	Fluorescent lighting tubes (468), assumed PCB-containing lighting ballasts (259), air conditioning unit w/ possible CFC (1)
Skid-Mounted Portable Building	None found.	None found.	None found.

Building (Parcel)	ACM	Materials with confirmed LBP	Other Observed RBMs
(Bldg. #6 – 203 Chelsea St.)			
Apartment Building (309 Chelsea St.)	Roof flashing sealant (~100 SF), texture on drywall (~14,520 SF)	Wood door (1 location) and wood door casing (1 location)	Mercury containing thermostat (1), refrigerators with potential ozone depleting chemicals (3), air conditioning unit w/ possible CFC (1)
Restaurant Building (309 Chelsea St.)	Plaster (~700 SF)	Wood siding (1 location), metal pole (1 location), concrete wall (2 locations)	None found.

1.7 PROJECT GOALS, SITE REUSE PLAN, AND REDEVELOPMENT CONSIDERATIONS

Initial development plans are in place for the southern 4 acres of the Site, which will be developed with a $38 million two-story (80,000-SF) medical services/academic research building that will provide services ancillary to those being provided in the adjoining 33,500-SF VA Wellness Center and the 60,000-SF Cardwell Collaborative buildings. The project will include parking, landscaping, and other amenities. The project will include an extension of Dailey Avenue westward across the Site to connect with Euclid Street, as well as reconstruction of sidewalks bordering Chelsea Street, consistent with the 2018 plan, and the City's new SmartCode requirements.

It is anticipated that building will be located within the east center of the Property, and therefore outside of the primary documented areas having significant lead and arsenic impacts to soil. The building will not include a basement. In addition, there is no anticipated need to construct a stormwater pond on the Site. Both of these factors will enhance the ability to manage soil on-site, without having to export large volumes of potentially contaminated soil to meet grading requirements. Geotechnical studies have not yet been performed, and a potential significant factor relevant to soil management and remedial requirements is the apparent presence of fill materials throughout much of the southern and western portions of the Property – some of which is poorly consolidated. The relocation of Coors Channel – which currently borders the western edge of the Property will occur in conjunction with redevelopment of the Site and potentially affect the staging, timing, and detailed plans for remediation of soil along the western edge of the Property. Engineering for relocation of the Coors Channel has not yet been performed.

Eliminating the presence of a drainageway along the western edge of the Property will likely simplify remedial activities in this portion of the Property – by eliminating the complexities associated with excavation, compaction, and grading of soil immediately adjacent to a drainage channel. All existing buildings at the Property will be demolished and all existing pavement, building slabs, and foundations removed. This will provide ready access to impacted soil throughout the Property as well as enable site grading plans to be fully and efficiently integrated with remedial and site reuse plans. It is anticipated that the concrete within the building slabs and foundations will be crushed on-site and provide a significant quantity of geotechnical fill that will be available for use on-site where needed to replace materials removed due to their poor geotechnical qualities or contamination levels. Several of the buildings have high ceilings (in particular, the cold storage building in the southwest corner of the Site) and could be incorporated into remedial plans for a short term basis if there is a need/benefit to utilize secure indoor areas for treatment of soil and/or for storage of remedial equipment.

2.0 APPLICABLE REGULATIONS AND CLEANUP STANDARDS

2.1 CLEANUP OVERSIGHT RESPONSIBILITY

The current Site owner is responsible for any environmental cleanup, including that which is related to former operations at the Property. The Site owner may apply for entry into various State or federal programs, including the Texas Voluntary Cleanup Program (VCP), and may apply for municipal, state, local, commercial, or other funding assistance programs to aid in the cleanup process of the Site, some of which may modify the responsibility for cleanup. A Texas-licensed Engineering and/or Geoscience firm may be required during the progression of the Site to cleanup in accordance with Texas Administrative Code (TAC), Title 30, Chapter 350, of the Texas Risk Reduction Program (TRRP).

Prior to any demolition and/or renovation of buildings at the Site, the owner and/or contractor must notify the Texas Department of State Health Services of such activities even if asbestos is not present. Any asbestos related work including sampling or abatement must be conducted by a licensed contractor in the State of Texas. A certified USEPA Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector in accordance with the TAC Title 25, Part 1 Chapter 295, and Subchapter C must perform the inspection and the individual that performs the inspection must be licensed as an asbestos inspector to conduct asbestos surveys in public buildings.

Any lead-based paint (LBP) removal activities are covered by TAC Title 25, Part 1, Chapter 295, and Subchapter I which are governed for target housing (pre-1978 constructed housing) and child-occupied facilities (day cares, kindergartens, preschools).

2.2 CLEANUP STANDARDS FOR MAJOR CONTAMINANTS

2.2.1 CLEANUP STANDARDS FOR MAJOR CONTAMINANTS IN SOIL

2.2.1.1 GENERAL PROCEDURES FOR ESTABLISHING SOIL AND GROUNDWATER CLEANUP STANDARDS FOR SITES IN TEXAS

Procedures for establishing soil and groundwater standards (referred to as protective concentration levels or PCLs) for sites in Texas are detailed in TRRP Guidance 22 (TRRP-22), Tiered Development of Human Health PCLs. These protect human health and take into account site conditions (i.e., groundwater classification) and land use. The PCLs are separated into three tiers and evaluated against various exposure pathways at each tier.

In addition to the three tiers of PCLs, the TCEQ has established background metals concentrations for select metals. These concentrations are referred to as the Texas-Specific Soil Background Concentrations (TSSBC). Each Tier of PCL and TSSBC is discussed further below.

Tier 1 PCLs

In Tier 1, the Site owner or operator compares sample analytical results to already established "generic" TCEQ PCLs, contained in "look-up" tables. The Tier 1 PCL tables are provided on the TCEQ's website (https://www.tceq.texas.gov/remediation/trrp/trrppcls.html). For the purposes of this investigation, the PCL tables published in January 2021 were utilized. Residential and commercial/industrial PCLs are provided in the tables. For most constituents, the remediation objectives for industrial/commercial land use are significantly higher (i.e., less restrictive) than those applicable to residential land use. However, if PCLs are based on commercial/industrial, an institutional control prohibiting the Property from residential use would be required.

The Tier 1 look-up table for PCLs that was used for this investigation is summarized below:

Table #	Description
1	Tier 1 PCLs for soil and subsurface soil for residential land use, for 0.5- and 30-acre source areas. Under a residential land use scenario, surface soil is defined as 0-15 feet.

The measured concentrations for a constituent must be less than the corresponding PCL value in order to have met the Tier 1 PCL threshold. Concentrations that are equal to or exceed the PCL are considered to not meet the corresponding Tier 1 PCL.

Tier 2

A Tier 2 evaluation is not required for those constituents that meet the Tier 1 PCLs. Tier 2 is considered to be a site-specific calculated PCL based on a number of factors, including occupational inhalation exposures, nuisance aesthetic considerations, theoretical soil saturation limit concentrations, and on-site soil conditions (pH, soil type, soil organic carbon content, etc.). The additional Tier 2 information can allow for calculation of less stringent but equivalently protective remediation objectives. Tier 2 PCLs are calculated based on standard models and equations developed by the TCEQ.

Tier 3

Tier 3 PCLs are also calculated using site-specific data and more sophisticated models that are not set forth in TCEQ rules or standards, as a Tier 2 PCL would be. A Tier 3 PCL can only be used as a remedial objective and must be approved by the TCEQ. These cannot be used for screening purposes and as such, Tier 3 PCLs have not been developed for this investigation.

TSSBC

For select metals, the TCEQ has established background concentrations. These background concentrations can be used in place of the Tier 1 $^{GW}Soil_{Ing}$ PCL (defined below) if the TSSBC is a concentration higher than the Tier 1 $^{GW}Soil_{Ing}$ PCL. The TSSBCs are promulgated in 30 TAC §350.51(m).

2.2.1.2 INITIAL EVALUATION OF PCLS APPLICABLE TO THE PROPERTY

Based on the discussion above, the Tier 1 PCLs and TSSBCs have been selected for the purposes of this ABCA and identifying areas of soil that may or will require some type of cleanup action(s). The exposure pathway of each PCL was evaluated for the Site by Stantec as part of the Phase II ESA (Stantec, 2021a), and are summarized below.

Table 1 on the TCEQ PCL webpage[1] presents the Tier 1 PCLs for soil on residential properties, and is divided into two general sections with separate sets of PCLs listed for 0.5-acre versus 30-acre "source areas." Based on the lack of well-defined sources for a majority of contaminants detected in soil at the Property, the 0.5-acre PCLs were used by Stantec for evaluating measured contaminant concentrations in the Phase II ESA report (Stantec, 2021a) as well as in this ABCA. PCLs are provided on the TCEQ "look up" tables for five different exposure pathways. Each of these pathways are evaluated below:

- $^{GW}Soil_{Ing}$: This PCL provides the limit for constituents of concern (COCs) in soil to be protective of leaching to a Class 1 or Class 2 aquifer at levels that could pose a risk to human health if groundwater was ingested. This PCL is considered applicable to the Property and the corresponding values for contaminants detected at the Site are included on **Table 1** in this ABCA.

- $^{GW}Soil_{Class3}$: This PCL provides the limit for COCs in soil to be protective of leaching to a Class 3 aquifer at levels that could pose a risk to human health if groundwater was ingested. This PCL is not considered applicable to the Property at this time as there is no evidence the Property is located over a Class 3 aquifer.

- $^{Tot}Soil_{Comb}$: This PCL provides the limit for COCs in surface soil to be protective of human health through the combined inhalation; ingestion; dermal; vegetable consumption pathways. In a residential setting, surface soil is defined as 0 to 15 feet bgs. This PCL is considered applicable to the Property and the corresponding values for contaminants detected at the Site are included on **Table 1** in this ABCA.

[1] https://www.tceq.texas.gov/assets/public/remediation/trrp/2021PCL%20Tables.pdf

- $^{Air}Soil_{Inh-V}$: This PCL provides the limit for COCs in subsurface soil to be protective of human health through the inhalation pathway. Subsurface soil was not sampled during this investigation; therefore, this PCL is not considered applicable to the Property at this time.

- $^{Air}GW\text{-}Soil_{Inh-V}$: This PCL provides the limit for COCs in subsurface soil to be protective of leaching to groundwater at levels that could pose a risk to human health for inhalation of groundwater. Subsurface soil was not sampled during this investigation; therefore, this PCL is not considered applicable to the Property at this time.

TSSBC

The TSSBC, which has been developed for select metals, takes the place of the Tier 1 $^{GW}Soil_{Ing}$ PCL if the concentration is higher than the $^{GW}Soil_{Ing}$ PCL. As the TSSBC for lead is 15 mg/kg, and the Tier 1 $^{GW}Soil_{Ing}$ is 3 mg/kg, the TSSBC is considered applicable for lead at the Property. As the TSSBC for arsenic is 5.9 mg/kg, and the Tier 1 $^{GW}Soil_{Ing}$ is 5 mg/kg, the TSSBC is considered applicable for arsenic at the Property. Both of these TSSBC values are included on **Table 1** in this ABCA.

TPH PCL

As part of the Phase II ESA (Stantec, 2021a), a second laboratory method (TCEQ Method 1006) was performed on the soil sample with the highest TPH concentration detected in the initial analysis, boring B16 from 3 to 4 feet bgs. These additional data were input into the TCEQ TRRP Tier 1 PCL calculator (Texas Commission on Environmental Quality [TCEQ], 2020) to determine a TPH PCL specific to the TPH compounds present in soil at the Property. The resulting site-specific Tier 1 TPH PCL of 12,100 mg/kg was then compared to the total TPH concentrations from the initial analytical data and one exceedance was identified at boring B16 from 3 to 4 feet bgs. The deeper sample collected from boring B16 from 5 to 6 feet bgs did not exceed the site-specific TPH PCL; therefore, the vertical extent of TPH in soil can be delineated to 5 feet bgs in boring B16. Additional samples are required to determine the horizontal extent of TPH.

2.2.2 CLEANUP STANDARDS FOR REGULATED BUILDING MATERIALS

Prior to any demolition or remodeling activities, sampling and any necessary abatement must be conducted to remove all ACM that may be identified, which contain greater than 1% asbestos, and be abated/removed and disposed of in accordance with applicable local, state, and federal regulations. Any planned demolition activities should also remove all known LBP which are defined by regulatory standards to contain greater than 1.0 milligrams per square centimeter (mg/cm^2) of lead. Any concentrations of lead identified prior to or during demolition must be disclosed to the disposal facility for proper characterization and disposal.

2.3 LAWS AND REGULATIONS APPLICABLE TO THE CLEANUP

Laws and regulations applicable to soil cleanup at the Site include the TAC Title 30, Chapter 350, the TRRP. This chapter sets forth the cleanup standards applicable to the Site. For the purpose of evaluating cleanup alternatives in this ABCA, it is assumed that the goals for redevelopment will include cleanup to residential standards and obtaining a "Remedy Standard A" closure. It is recognized that these goals may be revised as site redevelopment plans are refined, and as additional remedial investigation is completed to further delineate the horizontal and vertical extent of soil impacts. According to exposure pathways and cleanup standards which are assumed by default under these regulations, the most stringent cleanup standards fall under the soil-to-groundwater ingestion ($^{GW}Soil_{ing}$) PCLs for soil.

Laws and regulations that are applicable to any potential asbestos cleanup include TAC Title 25, Part 1 Chapter 295, and Subchapter C, the Texas Department of State Health Services (TDSHS), Occupational Safety and Health Administration (OSHA), National Emission Standards for Hazardous Air Pollutants (NESHAP), Texas Asbestos Health Protection Act (TAHPA), USEPA, AHERA, and City of El Paso by-laws. Any other federal, state, and local laws regarding procurement of contractors to conduct the abatement should be followed.

Laws and regulations that are applicable to LBP cleanup include the TDSHS, USEPA, Occupational Safety and Health Administration (OSHA), Texas Environmental Lead Reduction Rules (TELRR), and City of El Paso by-laws. Any other federal, state, and local laws regarding procurement of contractors to conduct the abatement should be followed.

In addition, all appropriate permits/notifications should be obtained prior to work start-up.

3.0 EVALUATION OF CLEANUP ALTERNATIVES

3.1 GENERAL CLEANUP CONSIDERATIONS

Following is a discussion of some key redevelopment, site attributes, and other considerations relevant to selection and evaluation of cleanup alternatives for the Site.

1. The baseline "no action alternative" is required to be considered as one of the alternatives.

2. The redevelopment plans are certain in that they will require demolition of all existing buildings, parking lots, and other structures, and as a consequence, soil throughout the Site will be accessible for excavation, and subject to some level of grading.

3. It is anticipated that the concrete within the building slabs and foundations will be crushed on-site and provide a significant quantity of geotechnical fill that will be available for use on-site where needed to replace materials removed due to their poor geotechnical qualities or contamination levels.

4. Redevelopment plans for the building do not include construction of a basement, and overall redevelopment plans for the Site as a whole reportedly will not require construction of a stormwater management pond. As a result, there is lower potential for export of soil to be necessary to accommodate a large basement or stormwater pond. However, subsurface excavation will still be required for construction of building foundations, elevator shafts, and installation of new utility lines.

5. It is anticipated that building will be located within the east center of the Property, and therefore outside of the primary documented areas of significant lead and arsenic impacts to soil.

6. The relocation of Coors Channel – which currently borders the western edge of the Property will occur in conjunction with redevelopment of the Site and potentially affect the staging, timing, and detailed plans for remediation of soil along the western edge of the Property. Engineering for relocation of the Coors Channel has not yet been performed. Eliminating the presence of a drainageway along the western edge of the Property will likely simplify remedial activities in this portion of the Property – by eliminating the complexities associated with excavation, compaction, and grading of soil immediately adjacent to a drainage channel.

7. Fill materials are present throughout extensive areas of the Property, and in particular, in areas where contaminated soil is present. The source and timing for placement of the fill materials is unknown. The distribution of contaminants within the fill materials is likely to be variable and extremely difficult to impossible to precisely delineate. Therefore, remedial alternatives that rely on precise advance delineation of contaminated soil and full removal of this material have a high likelihood of failure.

8. Some of the fill materials appeared to be weakly consolidated, and there is a likelihood that some will need to be removed, replaced, or recompacted to meet geotechnical requirements for construction of the building, roads, or parking lots. Geotechnical testing has not yet been performed, but geotechnical requirements will need to be integrated with soil management plans to address contaminated soil.

9. Lead impacted soil at the Site has not yet been analyzed for toxicity characteristic leaching procedure (TCLP) lead. As a rule of thumb, soil having total lead concentrations that are more than 100 mg/kg is considered to have some potential to exceed the characteristic hazardous waste threshold value of 5.0 milligrams per liter (mg/L) if subjected to TCLP lead analysis. From a practical standpoint, samples with total lead concentrations less than 1,500 to 2,000 mg/kg are unlikely to be characteristically hazardous. On the other hand, soil with total lead concentrations greater than 5,000 mg/kg has a significant probability of having a TCLP lead concentration greater than 5 mg/L and therefore being a D008 hazardous waste if excavated. Therefore, it is reasonable to assume that some of the soil at the Site with the highest lead concentrations will need to be handled as a D008 hazardous waste if excavated.

10. It is anticipated that demolition of one or more of the storage buildings could be temporarily delayed if having access to a building would facilitate remedial activities, including potential treatment of contaminated soil in a secure indoor environment.

11. It is assumed that soil from the Site, if landfilled, will be taken to the Camino Real Landfill located at 1000 Camino Real Boulevard in Sunland Park, New Mexico, which is located approximately 15 miles west and a 20 minute drive (one-way) from the Site. This is the facility that was used by MCAR for disposal of approximately 3,200 tons of contaminated soil that was excavated and removed in 2019-20 as part of the VA Mental Wellness Clinic and MCA District Park projects on the neighboring parcel to the west. For cost estimation purposes, it is assumed that soil management unit costs will be similar to those incurred on these previous projects, and average approximately $22.50 per ton for disposal, $8.50 per ton (or $170 per 20-ton load) for hauling of soil to the landfill, and $3,600 per day for loading of soil (with approximately 1,000-1,100 tons of soil loaded per day).

3.2 CLEANUP ALTERNATIVES CONSIDERED

Based on the general cleanup considerations presented in Section 3.1, the following seven remedial alternatives were considered.

- Alternative 1: No action
- Alternative 2: Abatement of RBMs Only
- Alternative 3: Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only
- Alternative 4: Treatment, Excavation, Removal and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only
- Alternative 5: Capping of Contaminated Soil Only
- Alternative 6: Use of Soil Vapor Mitigation Systems Only
- Alternative 7: Abatement of RBMs and Use of a Combination of Remedial Methods to Address Soil (Excavation and Landfilling, Excavation and On-Site Consolidation, Treatment of Soil in Select Areas, and Use of Engineered Barriers and Institutional Controls)

Each of these seven alternatives is described in further detail below.

3.2.1 ALTERNATIVE 1 – NO ACTION

No action (e.g., not remediating contaminated soil or abating RBMs at the Site) is the baseline against which all other alternatives will be measured.

3.2.2 ALTERNATIVE 2 – ABATEMENT OF RBMS ONLY

This alternative would consist of abatement of RBMs within the buildings, combined with no action to address soil impacts.

3.2.3 ALTERNATIVE 3 – EXCAVATION, REMOVAL, AND OFF-SITE DISPOSAL OF CONTAMINATED SOIL FROM HOTSPOT AREAS ONLY

This alternative would consist of excavation, removal, and off-site disposal of contaminated soil from "hotspot" areas. Considerations in implementing this alternative will include:

- How "hotspot" areas are defined. The definition of hotspot areas can vary from site to site, and depend on many factors, including the type of closure sought, whether Tier 2 or 3 PCLs are developed and approved which reduce the areas in which Tier 1 PCLs are exceeded, and the types of risks posed by the soil. In the absence of capping or other remedies as part of Alternative 3, "hotspot" areas could potentially be considered all locations and depths within which the TSSBC of 5.9 mg/kg is exceeded for arsenic, and/or the TSSBC of 15 mg/kg is exceeded for lead, and/or the $^{GW}Soil_{ing}$ PCL of 0.05 mg/kg is exceeded for PCE and/or the site-specific TPH PCL of 12,100 mg/kg is exceeded for total TPH.

- The location, extent, and depth of the "hotspot" excavation areas.

- The final grading plans for the Site, and whether any or all of the excavated areas would need to be backfilled with clean imported fill materials.

- Whether soil from the hotspot areas, following excavation, would need to be managed as a characteristically hazardous waste.

- The feasibility and potential benefits from fully removing contaminated soil from individual hotspot areas.

- Plans for future construction, in particular, the planned 80,000-SF building, where special measures may be required in backfilling of excavation, to minimize settlement and potential geotechnical issues.

- The locations for underground utility lines that would limit use of this alternative in some areas.

A key consideration in use of this alternative is the overall grading plans for the Site (which have not yet been developed), as well as the exact location for the building, and future roads, parking lots, and landscape areas. A second key consideration is the geotechnical characteristics of the extensive fill materials, and whether these will result in the need to excavate and replace or recompact soil/fill in some areas. Another key issue at the Site is the presence of areas where TCLP lead concentrations in soil will likely exceed the 5 mg/L hazardous waste threshold value.

The Site is ideal in many respects for use of this alternative in that it is a large site within which all existing buildings will be removed, and which could thereby accommodate large staging and temporary stockpile areas, without the need for sheet piling or other costly measures to prevent excavations from undermining neighboring the structures. Another favorable factor is that the Site is very close to an entrance ramp for I-10 and is within a relatively short distance (approximately a 20-minute drive) from a landfill that can receive the soil.

3.2.4 ALTERNATIVE 4 – TREATMENT, EXCAVATION, REMOVAL AND OFF-SITE DISPOSAL OF CONTAMINATED SOIL FROM HOTSPOT AREAS ONLY

Alternative 4 is similar to Alternative 3, with the exception that soil from select hotspot areas would be subject to some form or treatment either before or after excavation, but prior to transporting off-site for disposal. Treatment of soil prior to off-site disposal is primarily of use in situations where the soil, if untreated, will require disposal as a characteristic hazardous waste. Treatment through various methods can result in the soil no longer being characteristically hazardous, and acceptable for disposal as a non-hazardous solid waste.

It is anticipated that this alternative is potentially most applicable to areas of the Site that contain soil with the highest lead concentrations and within which some of the soil is likely to be characteristically hazardous for lead.

Specific rules apply to on-site treatment of soil that is characteristically hazardous, with options typically consisting of treatment in-situ (through injection of additives or below-grade mixing of additives), treatment in containers, or treatment on specially constructed treatment cells. A potential concern would be the potential for fugitive dust emissions, but this could potentially be addressed by delaying demolition of one of the buildings (in particular, the former cold storage building in the southwest corner of the Property) and using it as an indoor staging area for treatment of soil in a secure enclosed area not exposed to rain or wind.

Soil treatment by chemical stabilization (i.e., mixing an amendment into the soil) has been successfully applied to soils impacted by a variety of metal contaminants. This process does not destroy or remove the metals but decreases their mobility and may reduce their toxicity. The purpose of this alternative is to reduce the cost related to disposal of soil confirmed as part of future remedial investigations to have TCLP lead concentrations > 5 mg/L that, if excavated without treatment, would be subject to handling and disposal as a D008 characteristic hazardous waste, for which the estimated cost for transport, off-site treatment, and disposal at a RCRA Subtitle C facility would be likely be $150 per ton or more (depending on the distance to the nearest facility that could accept this material). For comparison purposes, site soils that have been stabilized via an amendment mixing process can potentially be disposed of as non-hazardous waste at a Subtitle D landfill at a cost of <$30 per ton.

Stabilization chemicals most commonly applied to metals-impacted soils include reagents such as cement, fly ash, slag, phosphorus-containing materials, clays, and other proprietary reagents such as Blastox®. Conventional excavating and mixing equipment can be used to mix the soil while blending in a reagent to treat the contaminant. Shallow soil can generally be mixed in place using equipment such as a bucket or mechanical mixing head (i.e., Lange tool or with an Allu bucket) mounted to the end of a tracked excavator. The mixing process creates a relatively homogenous soil matrix, reducing peak concentrations of contaminants within the mixed zone and promoting contact with the treatment reagent. The soil mixing process generally results in a volume increase of at least 10% to 15%. Mixing the reagent into the soil while it is in place can avoid licensing and other requirements that pertain to on-site treatment of hazardous waste. If the soil is mixed in a pile or fully removed from the ground for mixing, other regulatory requirements would apply (including the need to perform the mixing within a "container").

The excavated areas would be backfilled with clean fill soil from a known off-site source for which the material has been confirmed through laboratory analysis to be non-impacted and to meet the criteria for unrestricted use.

3.2.5 ALTERNATIVE 5 – CAPPING OF CONTAMINATED SOIL ONLY

Alternative 5 would consist of construction of a cap over areas of impacted soil to prevent either direct contact to contaminated soil by future workers or visitors to the Property. The cap would be constructed either of: (a) imported fill materials brought from an off-site location and documented to be free of contamination (or impacted at levels that are acceptable for direct human contact and all future planned site uses), (b) materials documented from non-impacted areas at the Site, or (c) new concrete or asphalt pavement.

Considerations in implementing this alternative will include:

- The extent of areas in which leaching of contaminants by infiltration of surface water runoff would be a concern (which would require the cap to be designed in a manner to minimize infiltration) versus areas where only preventing future direct human contact is a concern.
- The potential availability (or lack thereof) of clean materials on-site that can be used to construct the cap.
- The potentially availability of a significant volume of crushed concrete produced during demolition of the buildings and any existing areas of concrete pavement, which would provide a source of low- or no-cost clean fill materials that could be used to construct all or portions of an engineered barrier in some areas of the Site.
- The planned locations for parking lot, roads, sidewalk, the building slab, or other concrete or asphalt pavement in areas where they could effectively serve as long-term engineered barriers.
- The final grading plan, and the volume of soil that needs to be removed or brought to the Site to achieve the desired grade, and the extent to which construction of a cap may add to the challenges of meeting the grade (if final grading plans result in the need to "export" significant quantities of soil from the Site).

Given the >70-year industrial/commercial history of the Site, in combination with the presence of contamination at some locations to depths of 12 feet or more, use of a site-wide cap would provide the advantage of ensuring that future workers or visitors to the Site will be protected from both documented areas of contamination, and any small hotspot areas that are missed during the Phase II ESA and future additional remedial investigations.

3.2.6 ALTERNATIVE 6 – USE OF SOIL VAPOR MITIGATION SYSTEMS ONLY

There are currently no data that document a need for vapor mitigation measures at the Property, beyond one soil sample (B09, 1-2 ft) collected beneath the former vehicle service building for which the measured concentration of PCE (0.0888 mg/kg) slightly exceeded the Tier 1 $^{GW}Soil_{ing}$ PCL of 0.05 mg/kg. Only two locations were sampled beneath the building, and it is possible that the locations sampled do not include areas with the highest concentrations. However, this area is well outside of the general planned location for the new building to be constructed. In addition, no PCE (or any other VOCs at concentrations exceeding PCLs) were detected in all other locations sampled for VOCs. Therefore, unless additional soil data are collected in the future documenting more extensive or intensive PCE impacts within or in close proximity to the planned building footprint, soil vapor mitigation systems do not appear to be warranted as either a sole remedy or a component of a multi-faceted remedy.

3.2.7 ALTERNATIVE 7 – ABATEMENT OF RBMS AND USE OF A COMBINATION OF REMEDIAL METHODS TO ADDRESS SOIL (EXCAVATION AND LANDFILLING, EXCAVATION AND ON-SITE CONSOLIDATION, TREATMENT OF SOIL IN SELECT AREAS, AND USE OF ENGINEERED BARRIERS AND INSTITUTIONAL CONTROLS)

This alternative consists of use of a combination of the remedial methods described for Alternatives 2, 4, and 5. RBMs in the existing buildings would be abated as necessary to enable their safe and legal demolition. Various methods would be combined to address contaminated soil in a cost effective manner that would be fully integrated with overall grading plans, site geotechnical requirements, and final development plans. Excavation and landfilling would focus on what are considered to be the most impacted and significant areas of soil impacts (i.e., soil with total lead concentrations >500 mg/kg and/or total arsenic concentrations >24 mg/kg, and/or total TPH concentrations >12,100 mg/kg). Soil from these areas that is confirmed to have TCLP lead concentrations >5 mg/L would be treated on-site to reduce the mobility of the lead such that the treated soil can be disposed of as a non-hazardous solid waste. Treatment would potentially take place within containers or a containment structure within the former cold storage building prior to its demolition, to minimize the potential for fugitive dust emissions or access by trespassers without appropriate safety equipment or training. To the extent feasible, site grading plans would be designed to provide a layer of documented clean soil across throughout the Site. Crushed concrete from demolition of the buildings would be placed and compacted within deeper excavations and used as geotechnical fill. The placement of the concrete building floor slab, and pavement within new parking lots and roads would provide further "permanent" barriers preventing direct contact with the soil. .

3.3 EFFECTIVENESS, IMPLEMENTABILITY, AND COSTS FOR CLEANUP ALTERNATIVES

To assist in the selection of a remedial action alternative for the Site, this section presents an evaluation of the effectiveness, implementability, and preliminary estimated cost for each cleanup alterative.

3.3.1 EFFECTIVENESS

Effectiveness has both short-term and long-term components. The short-term effectiveness of a remedial alternative is evaluated relative to its effect on human health and the environment during the implementation of the remedial action. Potential risks to community, potential impacts on workers, the effectiveness and reliability of protective measures, potential environmental impact of the remedial action and the effectiveness/reliability of the mitigation measures during implementation, etc. are some of the factors considered typically considered. Long-term effectiveness and permanence of a remedial alternative are evaluated with respect to the following factors: magnitude of residual risk to human health and environment from the untreated or residual waste at the completion of remedial activities; an assessment of type, degree, and adequacy of long-term management (engineering controls, monitoring, maintenance, etc.) required for untreated or residual waste; an assessment of the long-term reliability of long-term management to provide continued protection from the untreated/residual waste; and the potential need for replacement of the remedy and continuing need for repairs to maintain the performance of the remedy.

The overall effectiveness of the seven remedial alternatives were evaluated in this section based on their ability to:

1. Support redevelopment plans for the Site, which include: a) demolition of all existing buildings, b) grading and disturbance of soil throughout the Site, and c) construction of a new 80,000 SF building, parking lots, roads, and landscape areas (Effectiveness Criterion [EC] #1).
2. Protect future employees and visitors to the Site from risks associated with exposure to contaminated soil (EC #2).
3. Be "robust" and not reliant on precise advance delineation of all contaminants in soil (which may be impossible, given the extensive presence of undocumented fill materials) EC #3).

4. Be "flexible and adaptable" such that adjustments can be made during implementation of certain elements of the cleanup approach if necessary to remain within budget, and/or to accommodate unanticipated liabilities (such as previously undocumented USTs) if encountered during initial remedial activities or subsequent grading and construction activities (EC #4).
5. Minimize potential exposure of area residents to contaminants or hazards during implementation (through fugitive dust emissions, vehicle emissions, etc.)(EC #5).

3.3.1.1 Alternative 1 – No Action

The "no action" alternative would be ineffective at achieving any of the five effectiveness criteria listed in Section 3.3.1.

3.3.1.2 Alternative 2 – Abatement of RBMs Only

This alternative would partially meet EC#1 by enabling demolition of the buildings at the Site to proceed, but would fail in meeting the other four ECs (assuming that redevelopment of the Site proceeded without addressing impacted soil).

3.3.1.3 Alternative 3 – Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only

This alternative would fail in meeting EC#1 as demolition of the buildings could not legally be performed without abatement of the RBMs. Excavation, removal, and off-site disposal of contaminated soil from all hotspot areas would be effective in achieving EC#2 (as all impacted soil exceeding various PCLs would be removed). However, the approach would rely on precise advance delineation of impacted soil, and would fail EC#3. It would also fail EC#4, as it would limit options to cost effectively address any unexpected conditions as every "surprise" would likely result in increased costs with few no options for trying to offset these added costs. Costs would be further increased by the need to dispose of some soil as a D008 characteristic hazardous waste. Finally, it would fail EC#5 as it would likely involve the greatest disturbance of soil and associated potential emissions of fugitive dust, as well as likely require the greatest number of trips of trucks and associated vehicle emissions.

3.3.1.4 Alternative 4 – Treatment, Excavation, Removal and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only

This alternative would fail in meeting EC#1 as demolition of the buildings could not legally be performed without abatement of the RBMs. As with Alternative 3, it would likely be effective in achieving EC#2 , but fail in achieving EC#1, EC#3, EC#4, and EC#5. The only difference is that soil with TCLP lead concentrations >5 mg/L would be treated, and therefore not need to be disposed of as a characteristic hazardous waste. This would result in a somewhat more flexible and adaptive approach (EC#4), although this likely would still be considered to fail in achieving EC#4.

3.3.1.5 Alternative 5 – Capping of Contaminated Soil Only

This alternative would fail in meeting EC#1 as demolition of the buildings could not legally be performed without abatement of the RBMs. In addition, it would not really address the needs for extensive grading of the Site that will be necessary for this type of redevelopment project (versus a park or green space where grading needs for development might be minimal). Capping of contaminated soil would be effective in protecting future worker and visitors from direct contact with contaminated soil (EC #2). It would also be robust (and achieve EC#3) if implemented "site-wide" in that it would not matter if the Phase II ESA or subsequent remedial investigation fail to identify or fully delineate all areas of impacted soil. They would be capped whether known and fully delineated or unknown and not fully delineated. It might not be viewed as flexible or adaptable – in particular given the widespread presence of fill materials of uncertain geotechnical quality and the potential need to manage and/or dispose of these materials regardless of whether a cap is present. It would be effective in achieving EC#5, as little or no soil would be excavated.

3.3.1.6 Alternative 6 – Use of Soil Vapor Mitigation Systems Only

This alternative is not being further considered based on the general analysis presented in Section 3.2.6.

3.3.1.7 Alternative 7 – Abatement of RBMs and Use of a Combination of Remedial Methods to Address Soil (Excavation and Landfilling, Excavation and On-Site Consolidation, Treatment of Soil in Select Areas, and Use of Engineered Barriers and Institutional Controls)

This approach would likely be effective achieving all five effectiveness criteria. It would likely be the most effective approach for meeting EC#1, EC#2, and EC#4. It would require advance effective delineation of soil in more narrowly defined "hot spot areas" as well as areas in which soil potentially has TCLP lead concentrations >5 mg/L, however delineation of these areas is something that would be focused and achievable. Similarly, it would result in some significant excavation activities, but these would also result in permanent removal of the most impacted materials from the site, as well as the reduction in hazard characteristics for soil with the highest lead impacts.

3.3.2 IMPLEMENTABILITY

Implementability refers to the technical and administrative feasibility of implementing an alternative, and the various materials and services required during its implementation. Examples of such factors for implementation of an alternative include: ability to construct, operate and monitor; time required to obtain necessary permits and approval; availability of equipment, material, contractor, etc. The implementability of the seven remedial alternatives is evaluated below.

3.3.2.1 Alternative 1 – No Action

No action is the most easily implementable alternative since it involves no activities.

3.3.2.2 Alternative 2 – Abatement of RBMs Only

This alternative is relatively easy to implement as there are many contractors available with the appropriate credentials and capabilities to perform this type of work. It is also work that would be performed in the first phase of redevelopment and likely be completed relatively quickly.

3.3.2.3 Alternative 3 – Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only

Alternative 3 is moderately difficult to implement. Coordination (e.g., dust suppression and monitoring) during cleanup activities and short-term disturbance to the community (e.g., trucks transporting contaminated soils and backfill) are anticipated. In addition, soil in portions of the Site will be characteristically hazardous for lead, if excavated, resulting in the need to carefully define areas where soil is hazardous, and to segregate this soil from non-hazardous soil generated from other areas.

The Site is ideal in many respects for use of this alternative in that it is a large site that could accommodate large staging and temporary stockpile areas, with minimal disruption to area residents or the need for sheet piling or other costly measures to prevent excavations from undermining neighboring the structures. Another favorable factor is that excavated soil could potentially be removed from the Site via rail, resulting in both cost savings (for transport to landfill) and avoidance of the negatives associated with moving large volumes of soil via dump trucks

3.3.2.4 Alternative 4 – Treatment, Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only

Alternative 4 is similar to Alternative 3 in its implementability, but with the added complexity of treating select hotspot areas to reduce the soil's toxicity of lead or other contaminants. However, rendering the soil non-hazardous will simplify the coordination needed for transport and off-site disposal, as well as eliminate some reporting requirements.

3.3.2.5 Alternative 5 – Capping of Contaminated Soil Only

Capping is relatively easy to implement, although ongoing monitoring and maintenance of the cap will require periodic coordination and reporting. The major challenge for capping will be to develop a capping plan that is fully and effectively integrated with the overall site grading and final redevelopment plans.

3.3.2.6 Alternative 6 – Use of Soil Vapor Mitigation Systems

Soil vapor mitigation systems can be relatively easy to implement for new buildings (versus tying to retrofit in an existing and/or occupied building). Use of soil vapor mitigation systems would require upfront coordination with the architects, bidders, and construction managers. However, the systems if installed would need to be operated and maintained as long as a vapor mitigation threat remained.

3.3.2.7 Alternative 7 – Abatement of RBMs and Use of a Combination of Remedial Methods to Address Soil (Excavation and Landfilling, Excavation and On-Site Consolidation, Treatment of Soil in Select Areas, and Use of Engineered Barriers and Institutional Controls)

Abatement of RBMs (Alternative 2) and use of a combination of remedial methods (Alternatives 4 and 5) to address soil would present some greater implementation challenges than other alternatives, but in general none of these challenges would likely be too significant. Use of a combination of methods for soil would provide an essential implementation advantage in that if can most easily be adapted to meet the needs of each area at the Site, as well as well as changes in redevelopment plans and unanticipated additional liabilities or areas of contamination uncovered during remedial or construction activities. Abatement of RBMs (Alternative 2) is relatively straightforward – in particular when performed in unoccupied buildings in preparation for demolition. Removal of soil (a component of Alternative 4) requires some upfront coordination but is one of the most widely used and least technologically complex remedial methods. Treatment prior to disposal (a component of Alternative 4) to address soil that is characteristically hazardous for lead is also a relatively simple remedial option requiring mixing of dry chemicals with soil. Capping (Alternative 5) is also a commonly used and readily implementable remedial method.

3.3.3 COST

Preliminary cost estimates are presented in this section based on: a) bids obtained from qualified contractors for RBM abatement, b) unit costs for loading, trucking, and landfilling of non-hazardous soil incurred by MCAR for work on the adjoining VA Wellness Center project in 2019, c) other unit costs estimated by Stantec based on previous projects in Texas, and d) current best estimates by Stantec on quantities of soil applicable to Alternatives 3 through 7. A general discussion of costs associated with select remedial alternatives is also presented where appropriate.

3.3.3.1 Alternative 1 – No Action

There is no direct cost associated with this alternative. However, it carries an enormous opportunity cost given that cleanup is required to proceed with a redevelopment project that will result in construction of a $38 million building and a project that will result in hundreds of local construction and new permanent jobs.

3.3.3.2 Alternative 2 – Abatement of RBMs Only

Preliminary bids for abatement work were obtained by Stantec in November 2021 from two qualified abatement firms. Final bids will be obtained by MCAR through a formal bid process that is fully compliant with applicable 2 CFR 200.317-326 procurement requirements, Davis Bacon wage requirements, and other applicable or relevant federal, state, and local requirements. Based on the preliminary bids, it is estimated that abatement of the identified RBMs will cost $95,000.

3.3.3.3 Alternative 3 – Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only

Key assumptions relevant to estimating costs for Alternative 3 are presented below.

1) As noted in Section 3.2.3, "hotspot areas" for this alternative would be defined more "broadly" and include all locations and depth intervals within which the TSSBC of 5.9 mg/kg is exceeded for arsenic, and/or the TSSBC of 15 mg/kg is exceeded for lead, and/or the $^{GW}Soil_{ing}$ PCL of 0.05 mg/kg is exceeded for PCE and/or the site-specific TPH PCL of 12,100 mg/kg is exceeded for total TPH.
2) For the purpose of this cost estimate, this area is estimated to equal approximately 2.5 acres of the Site (=108,900 SF) and to extend to an average depth of 6 feet. This would equal a volume of 653,400 cubic feet (=24,500 cubic yards). Assuming an average in-situ soil density of 1.5 tons per cubic yard, this would equal a total weight of 36,300 tons.
3) It is assumed that soil with total lead concentrations that are high enough to have TCLP lead concentrations >5 mg/L (and which would be a characteristic hazardous waste if excavated) are present within a 0.2-acre area (= 8,712 SF) and to have an average thickness of 3 feet. This would equal a volume of 26,136 cubic feet (=968 cubic yards = 1,452 tons at an average assumed soil density of 1.5 tons/cubic yard).
4) It is assumed that soil from the Site, if landfilled, will be taken to the Camino Real Landfill located at 1000 Camino Real Boulevard in Sunland Park, New Mexico, which is located approximately 15 miles west and a 20 minute drive (one-way) from the Site. This is the facility

that was used by MCAR for disposal of approximately 3,200 tons of contaminated soil that was excavated and removed in 2019-20 as part of the VA Wellness Center and MCA District Park projects on the neighboring parcel to the west. For cost estimation purposes, it is assumed that soil management unit costs will be similar to those incurred on these previous projects, and average approximately $22.50 per ton for disposal, $8.50 per ton (or $170 per 20-ton load) for hauling of soil to the landfill, and $3,600 per day for loading of soil (with approximately 1,000-1,100 tons of soil loaded per day).
5) It is assumed that soil that is a D008 hazardous waste will transported and disposed of at a RCRA Subtitle C facility at a cost of $150/ton.
6) This volume of soil removal would result in the need for large volumes of clean fill materials to backfill the significant excavation. However, these costs are not being included as part of the overall cleanup costs as final grading plans have not been developed.
7) Costs for oversight, confirmation sampling, and other activities by the qualified environmental professional are difficult to estimate but assumed for the purpose of this cost estimate to equal 10% of the subtotal for other remedial costs.

Based on the key assumptions presented above, the total costs for this alternative (excluding possible backfill costs) are summarized below:

Remedial Activity	# of Units and Unit Cost	Estimated Cost
Mobilization (remedial contractor)	Lump sum (estimated)	$15,000
Soil loading	36,300 tons = 33 days of loading (at 1,100 tons per day) X $3,600/day	$118,800
Soil transport to landfill (non-hazardous)	36,300 tons total – 1,452 tons hazardous = 34,848 tons of non-hazardous soil X $8.50/ton	$296,208
Soil disposal (non-hazardous)	34,848 tons of non-hazardous soil X $22.50/ton	$784,080
Soil disposal (hazardous)	1,452 tons of hazardous soil X $150/ton	$217,800
SUBTOTAL		**$1,431,888**
Engineering/QEP oversight	5% of total remedial contractor/disposal costs	$71,594
TOTAL		**$1,503,482**

3.3.3.4 Alternative 4 – Treatment, Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas Only

This alternative is similar to Alternative 3, with the key difference being that soil that is hazardous for lead would be treated at an assumed cost of $50/ton and thereby be disposed of as a non-hazardous waste. Costs are calculated below.

Remedial Activity	# of Units and Unit Cost	Estimated Cost
Mobilization (remedial contractor)	Lump sum (estimated)	$15,000
Soil loading	36,300 tons = 33 days of loading (at 1,100 tons per day) X $3,600/day	$118,800
Soil transport to landfill (non-hazardous)	36,300 tons of non-hazardous soil X $8.50/ton	$308,500
Soil disposal (non-hazardous)	36,300 tons of non-hazardous soil X $22.50/ton	$816,750
Soil treatment	2,420 tons of hazardous soil X $50/ton	$72,600
SUBTOTAL		**$1,331,700**
QEP oversight	10% of total remedial contractor/disposal costs	$66,585
TOTAL		**$1,398,285**

Based on this analysis, treating the hazardous soil such that it can be disposed of as a non-hazardous waste would add $72,600 in treatment costs, but reduce disposal costs and result in an overall net cost savings of approximately $105,197 versus Alternative 3.

3.3.3.5 Alternative 5 – Capping of Contaminated Soil Only

Key assumptions relevant to estimating costs for Alternative 5 are presented below.

1) As noted in Section 3.2.3, "hotspot areas" for this alternative would be more "broadly" defined and include all locations and depth intervals within which the TSSBC of 5.9 mg/kg is exceeded for arsenic, and/or the TSSBC of 15 mg/kg is exceeded for lead, and/or the $^{GW}Soil_{Ing}$ PCL of 0.05 mg/kg is exceeded for PCE and/or the site-specific TPH PCL of 12,100 mg/kg is exceeded for total TPH.
2) For the purpose of this cost estimate, this area is estimated to equal approximately 2.5 acres of the Site (=108,900 SF).
3) It is assumed that a 2-foot thick soil cap would be placed throughout the area, requiring a volume of geotechnically suitable clean fill equal to 217,800 cubic feet (=8,067 CY).
4) It is assumed that approximately 100,000 SF of concrete slabs are present at the Site with an average thickness of 6-inches, and that this material will be crushed on site and available for reuse as geotechnical fill. The volume of this material would equal approximately 50,000 cubic feet (= 1,850 CY), and this material would meet approximately 23% of the needed volume of clean fill for the cap. The costs for crushing of the concrete would not be considered a remedial cost.
5) It is assumed that the remaining volume of required clean fill (8,067 CY – 1,850 CY = 6,217 CY) could be obtained from clean portions of the Site.

6) It is assumed that placement of the clean fill would add $1/SF to the overall grading costs for the affected 2.5 acre area.
7) Costs for engineering/QEP oversight are difficult to estimate but assumed for the purpose of this cost estimate to equal 10% of the subtotal for other remedial costs.

Based on the key assumptions presented above, the total costs for this alternative (excluding possible backfill costs) are summarized below:

Remedial Activity	# of Units and Unit Cost	Estimated Cost
Additional grading costs for cap construction	$1/SF X 108,900 SF	$108,900
SUBTOTAL		**$108,900**
Engineering/QEP oversight	10% of total remedial contractor/disposal costs	$10,890
TOTAL		**$119,790**

3.3.3.6 Alternative 6 – Use of Soil Vapor Mitigation Systems

No cost estimate has been prepared for this alternative, as there is currently no likelihood of this type of system being required.

3.3.3.7 Alternative 7 – Abatement of RBMs and Use of a Combination of Remedial Methods to Address Soil (Excavation and Landfilling, Excavation and On-Site Consolidation, Treatment of Soil in Select Areas, and Use of Engineered Barriers and Institutional Controls)

Key assumptions relevant to estimating costs for Alternative 7 are presented below.

1) RBMs will be abated.
2) As noted in Section 3.2.7, "hotspot areas" for this alternative would be defined more narrowly, with excavation and removal focused on what are considered to be the most impacted and significant areas of soil impacts (i.e., soil with total lead concentrations >500 mg/kg and/or total arsenic concentrations >24 mg/kg, and/or total TPH concentrations >12,100 mg/kg).
3) As detailed in Section 1.6, there are two "hotspot areas" meeting this narrower definition: a) an approximately 100-foot by 150-foot area (=15,000 SF) in the northwest corner of the site, and b) and irregular approximate 180-foot by 240-foot area (= 43,200 SF) in the southwest corner of the Property. The average thickness of impacted soil to be removed in the northwest hotspot area is assumed to equal 2 feet, resulting in a volume of 30,000 cubic feet

(= 1,111 CY). Assuming an average in-site soil density of 1.5 tons per cubic yard, this would equal a total weight of 1,667 tons. The average thickness of impacted soil to be removed in the southwest hotspot area is assumed to equal 3 feet, resulting in a volume of 129,600 cubic feet (= 4,800 CY). Assuming an average in-site soil density of 1.5 tons per cubic yard, this would equal a total weight of 7,200 tons. The combined total volume of soil from the two hotspot areas would equal 8,867 tons.
4) Within the southwest hotspot area, it is assumed that soil with total lead concentrations that are high enough to have TCLP lead concentrations >5 mg/L (and which would be a characteristic hazardous waste if excavated) are present within a 0.2-acre area (= 8,712 SF) and to have an average thickness of 3 feet. This would equal a volume of 26,136 cubic feet (=968 cubic yards = 1,452 tons at an average assumed soil density of 1.5 tons/cubic yard).
5) It is assumed that soil from the Site, if landfilled, will be taken to the Camino Real Landfill located at 1000 Camino Real Boulevard in Sunland Park, New Mexico, which is located approximately 15 miles west and a 20 minute drive (one-way) from the Site. This is the facility that was used by MCAR for disposal of approximately 3,200 tons of contaminated soil that was excavated and removed in 2019-20 as part of the VA Wellness Center and MCA District Park projects on the neighboring parcel to the west. For cost estimation purposes, it is assumed that soil management unit costs will be similar to those incurred on these previous projects, and average approximately $22.50 per ton for disposal, $8.50 per ton (or $170 per 20-ton load) for hauling of soil to the landfill, and $3,600 per day for loading of soil (with approximately 1,000-1,100 tons of soil loaded per day).
6) It is assumed that soil that is a D008 hazardous waste will be treated with Blastox® or another reagent at an average treatment cost of $50/ton.
7) This volume of soil removal would result in the need for large volumes of clean fill materials to backfill the significant excavation. However, these costs are not being included as part of the overall cleanup costs as final grading plans have not been developed.
8) It is assumed that the area subject to a cap would no longer need to include the two hotspot areas with a combined area of 58,200 SF, and that the area requiring a cap (as summarized in Section 3.3.3.5 for Alternative 5 would be reduced from 108,900 SF to 50,700 SF.
9) Costs for oversight, confirmation sampling, and other activities by the qualified environmental professional are difficult to estimate but assumed for the purpose of this cost estimate to equal 5% of the subtotal for other remedial costs.

Based on the key assumptions presented above, the total costs for this alternative (excluding possible backfill costs) are summarized below:

Remedial Activity	# of Units and Unit Cost	Estimated Cost
RBM abatement	Per price quote obtained by Stantec	$95,000
Mobilization (remedial contractor	Lump sum (estimated)	$15,000

Soil loading	8,867 tons = 8 days of loading (at 1,100 tons per day) X $3,600/day	$28,800
Soil transport to landfill (non-hazardous)	8,867 tons X $8.50/ton	$75,367
Soil disposal (non-hazardous)	8,867 tons of non-hazardous soil X $22.50/ton	$199,500
Soil treatment (hazardous)	1,452 tons of hazardous soil X $50/ton	$72,600
Additional grading costs for cap construction	$1/SF X 50,700 SF	$50,700
SUBTOTAL		**$536,967**
Engineering/QEP oversight	5% of total soil remedial contractor/disposal costs (excluding abatement costs)	$22,098
TOTAL		**$559,065**

3.4 RECOMMENDED REMEDIAL ACTION ALTERNATIVE

The recommended cleanup alternative is Alternative 7 (Abatement of RBMs and Use of a Combination of Remedial Methods to Address Soil [Excavation and Landfilling, Excavation and On-Site Consolidation, Treatment of Soil in Select Areas, and Use of Engineered Barriers and Institutional Controls]). Alternative 1 (No Action) cannot be recommended as it would support none of the redevelopment goals for the Property. Although it would have the lowest direct cost, it would have the highest indirect or opportunity costs as it would result in an estimated $38 million project and hundreds of associated jobs not coming to fruition.

The recommended alternative would include a combination of Alternative 2 and elements from Alternatives 4 and 5. Alternative 2 (Abatement of RBMs) would enable demolition of the buildings to proceed. Alternative 3 (Treatment, Excavation, Removal, and Off-Site Disposal of Contaminated Soil from Hotspot Areas) and focused on two hotspot areas (i.e., an approximately 15,000-SF area in the northwest corner of the Site and a 43,200-SF area in the southwest corner of the Site) containing what are considered to be the most impacted and significant areas of soil impacts (i.e., soil with total lead concentrations >500 mg/kg and/or total arsenic concentrations >24 mg/kg, and/or total TPH concentrations >12,100 mg/kg). Soil that is TCLP hazardous for lead would be treated such that it can be managed and disposed of as a non-hazardous waste at a significant cost saving. It is assumed that capping (Alternative 5) would be an option in areas where soil with relatively low levels of contamination remains in place. Alternative 6 (Use of Soil Vapor Mitigation Measures) is considered unlikely to be required based on current site data and preliminary redevelopment plans, but could be reconsidered as an additional element in the future.

The actual combination of remedial alternatives used at the Site are subject to completion of: a) supplemental environmental investigations needed to further delineate the extent of impacts, b) geotechnical studies which will potentially document additional areas where soil or historic fill materials need to be removed for geotechnical reasons, c) possible Tier 2 or Tier 3 analyses which could reduce areas within which documented contaminant concentrations in soil exceed one of more PCLs, and d) final site grading and development plans.

4.0 REFERENCES

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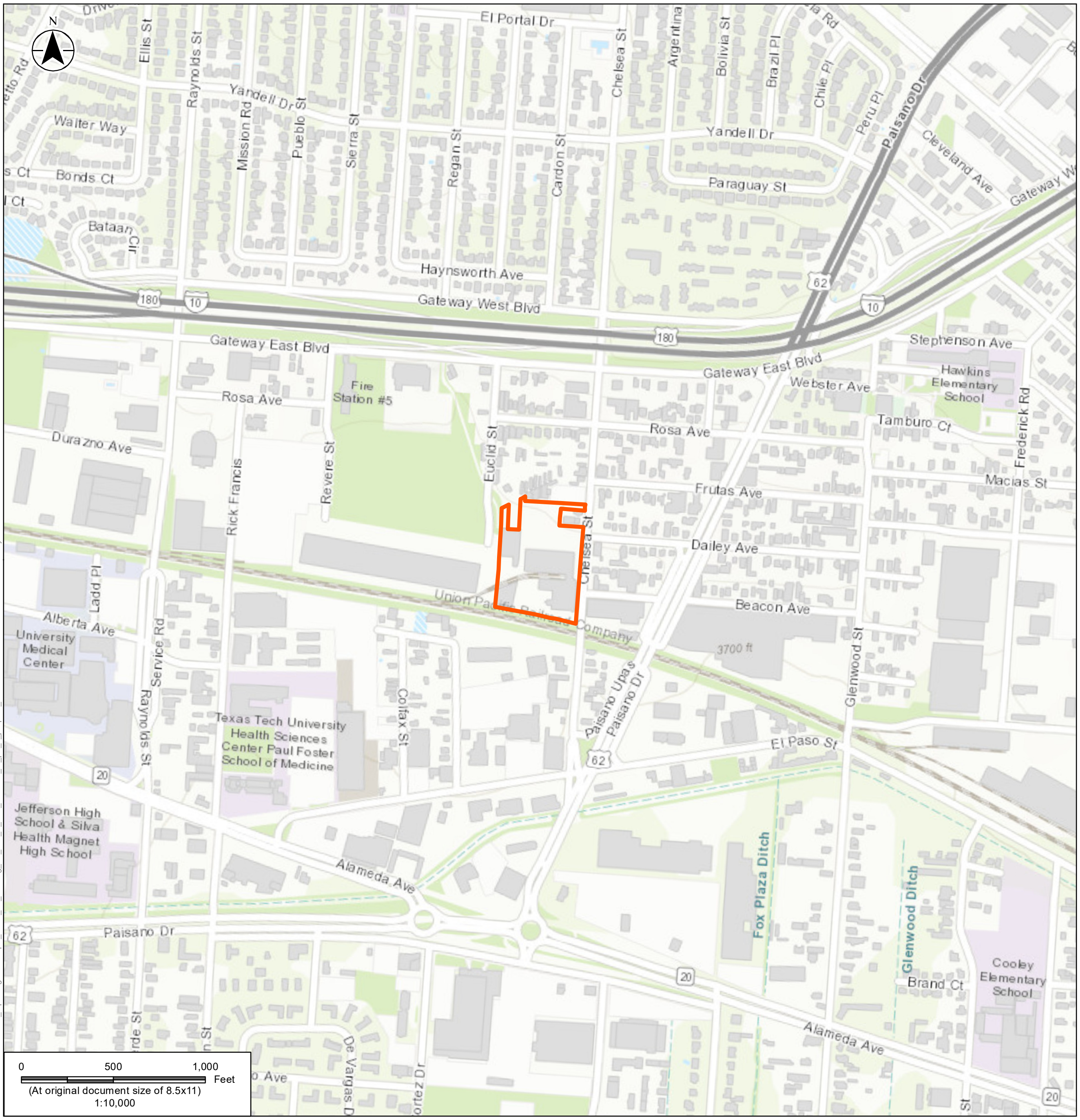
FIGURES



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Approximate Property Boundary

Stantec

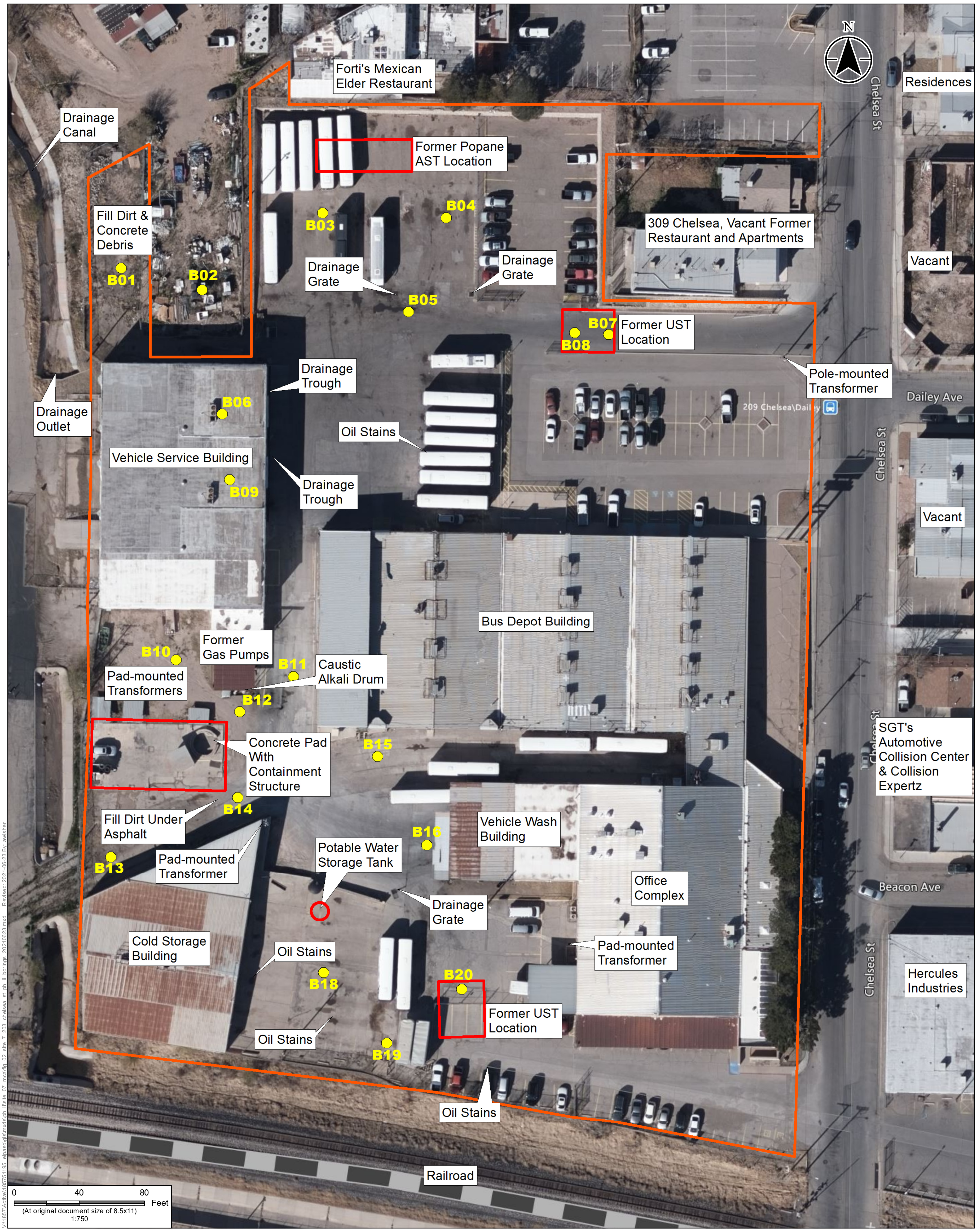
Project Location
203 Chelsea Street
El Paso, Texas 79905

Client/Project 185751195
El Paso Downtown Management District
EPA Brownfield Coalition Assessment Grant
Phase II Environmental Site Assessment

Title
Property Location Map

Figure No.
1

Notes
1. Coordinate System: NAD 1983 UTM Zone 14N
2. Data Sources: El Paso, TX CAD/GIS
3. Background: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



Soil Boring Location

Approximate Property Boundary

Stantec

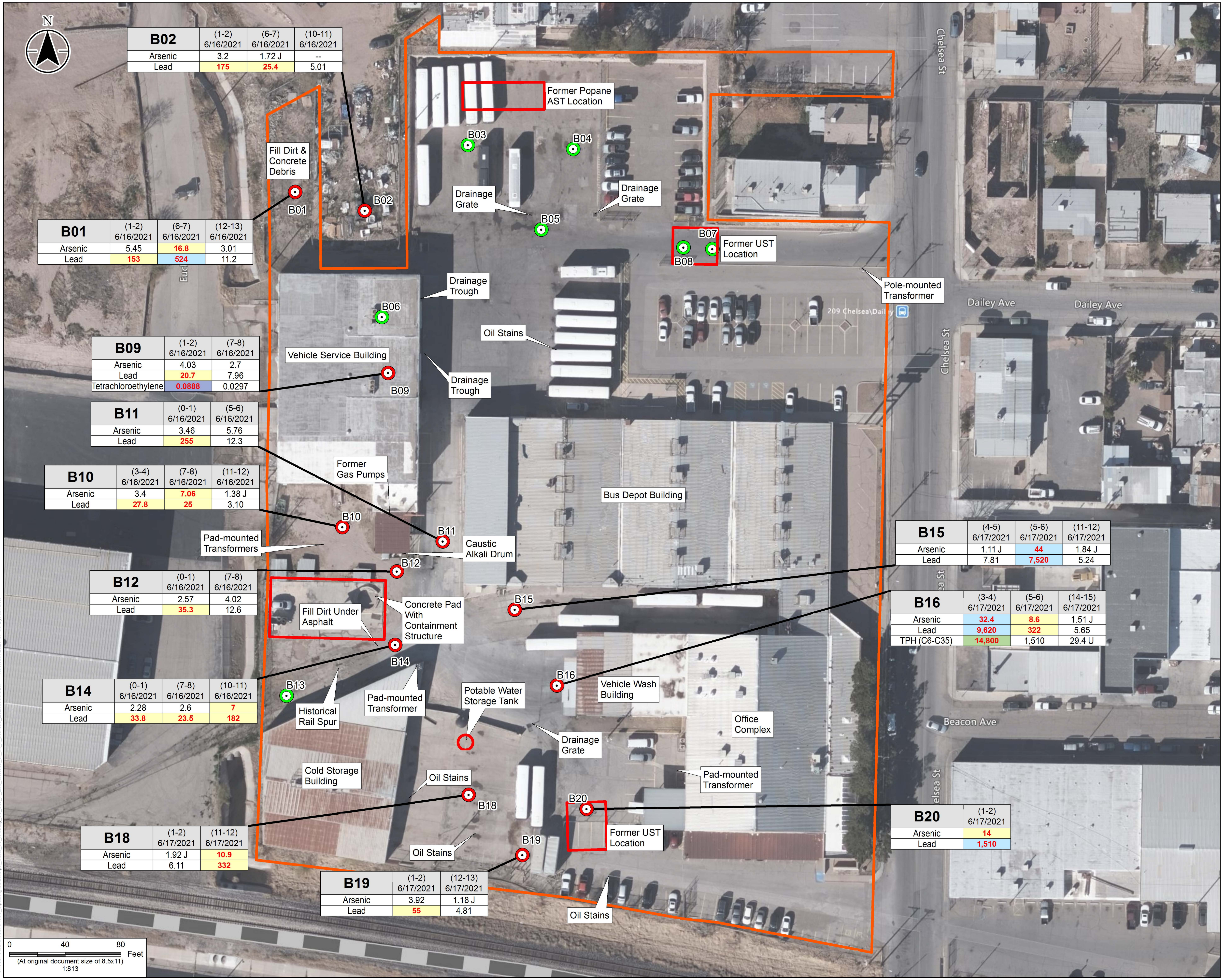
Project Location
203 Chelsea Street
El Paso, Texas 79905

Client/Project 185751195
El Paso Downtown Management District
EPA Brownfield Coalition Assessment Grant
Phase II Environmental Site Assessment

Title
Sampling Locations

Figure No.
2

Notes
1. Coordinate System: NAD 1983 UTM Zone 13N
2. Data Sources: El Paso, TX CAD/GIS
3. Background: © 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS © 2021 TomTom



B02	(1-2) 6/16/2021	(6-7) 6/16/2021	(10-11) 6/16/2021
Arsenic	3.2	1.72 J	--
Lead	175	25.4	5.01

B01	(1-2) 6/16/2021	(6-7) 6/16/2021	(12-13) 6/16/2021
Arsenic	5.45	16.8	3.01
Lead	153	524	11.2

B09	(1-2) 6/16/2021	(7-8) 6/16/2021
Arsenic	4.03	2.7
Lead	20.7	7.96
Tetrachloroethylene	0.0888	0.0297

B11	(0-1) 6/16/2021	(5-6) 6/16/2021
Arsenic	3.46	5.76
Lead	255	12.3

B10	(3-4) 6/16/2021	(7-8) 6/16/2021	(11-12) 6/16/2021
Arsenic	3.4	7.06	1.38 J
Lead	27.8	25	3.10

B12	(0-1) 6/16/2021	(7-8) 6/16/2021
Arsenic	2.57	4.02
Lead	35.3	12.6

B14	(0-1) 6/16/2021	(7-8) 6/16/2021	(10-11) 6/16/2021
Arsenic	2.28	2.6	7
Lead	33.8	23.5	182

B18	(1-2) 6/17/2021	(11-12) 6/17/2021
Arsenic	1.92 J	10.9
Lead	6.11	332

B19	(1-2) 6/17/2021	(12-13) 6/17/2021
Arsenic	3.92	1.18 J
Lead	55	4.81

B15	(4-5) 6/17/2021	(5-6) 6/17/2021	(11-12) 6/17/2021
Arsenic	1.11 J	44	1.84 J
Lead	7.81	7,520	5.24

B16	(3-4) 6/17/2021	(5-6) 6/17/2021	(14-15) 6/17/2021
Arsenic	32.4	8.6	1.51 J
Lead	9,620	322	5.65
TPH (C6-C35)	14,800	1,510	29.4 U

B20	(1-2) 6/17/2021
Arsenic	14
Lead	1,510

Stantec

- Soil Sampling Locations
- One or More Soil Parameters Tested Exceed Guidelines
- Soil Parameters Tested Were Below Guidelines
- Approximate Property Boundary
- Concentration Exceeds TSSBC Cleanup Levels
- Concentration Exceeds TotSoilComb PCL Cleanup Levels
- Concentration Exceeds GWSoilIng PCL Cleanup Levels
- Concentration Exceeds Site-Specific TPH PCL

Sample ID — Sample Depth (feet)/ Sample Date

B16	(3-4) 6/17/2021	(5-6) 6/17/2021	(14-15) 6/17/2021
Arsenic	32.4	8.6	1.51 J
Lead	9,620	322	5.65
TPH (C6-C35)	14,800	1,510	29.4 U

Parameter — Value (mg/kg)

SOIL AND GROUNDWATER CLEANUP STANDARDS FOR SITES IN TEXAS (mg/kg)

Parameter	GWSoilIng PCL	TotSoilComb PCL	TSSBC	TPH PCL
Arsenic	5	24	5.9	--
Lead	3	500	15	--
Tetrachloroethylene	0.05	710	--	--
TPH (C6-C35)	--	--	--	12,100

Notes

1. Coordinate System: NAD 1983 UTM Zone 13N
2. Data Sources: El Paso, TX CAD/GIS
3. Background: © 2021 Microsoft Corporation © 2021 Maxar ©CNES (2021) Distribution Airbus DS © 2021 TomTom
4. J = Result is qualified as estimated, "-" indicates a potential negative bias.
5. U = Undetected at SDL (Sample Detection Limit).
6. mg/kg = milligrams per kilogram
7. TSSBC = Texas-Specific Soil Background Concentrations
8. TPH = Total Petroleum Hydrocarbon
9. PCL = Protective Concentration Levels
10. TotSoilComb = This PCL provides the limit for COCs in surface soil to be protective of human health through the combined inhalation; ingestion; dermal; vegetable consumption pathways. In a residential setting, surface soil is defined as 0 to 15 ft bgs.
11. GWGWIng: This PCL provides the limits for COCs in groundwater in Class 1 or Class 2 aquifers at levels that could pose a risk to human health if groundwater was ingested.
12. TPH PCL = Site-specific TPH PCL calculated based on Texas Commission on Environmental Quality (TCEQ) Method 1006 analytical results.
13. "--" Parameter not analyzed / not available.

Project Location

203 Chelsea Street
El Paso, Texas 79905

Client/Project 185751195

El Paso Downtown Management District
EPA Brownfield Coalition Assessment Grant
Phase II Environmental Site Assessment

Title

Summary of Soil Analytical Results

Figure No.

3

TABLES

Table 1
Summary of Soil Analytical Results
203 Chelsea Street, El Paso, Texas
City of El Paso

	$^{GW}Soil_{Ing}$ PCL[A]	$^{Tot}Soil_{Comb}$ PCL[B]	TSSBC[C]	TPH PCL[D]	B01 (1-2) SO 6/16/2021	B01 (6-7) SO 6/16/2021	B01 (12-13) SO 6/16/2021	B02 (1-2) SO 6/16/2021	B02 (6-7) SO 6/16/2021	B02 (10-11) SO 6/16/2021
Metals (SW6010D)										
Arsenic	5	24	5.9	5.9	**5.45**	**16.8**	**3.01**	**3.2**	**1.72 J**	--
Lead	3	500	15	15	**153**	**524**	**11.2**	**175**	**25.4**	**5.01**
Volatile Organic Compounds (SW8260C)										
1,1,1,2-Tetrachloroethane	1.4	65	nv	nv	0.00175 U	0.00194 U	--	0.00170 U	0.00179 U	--
1,1,1-Trichloroethane	1.6	53000	nv	nv	0.00169 U	0.00189 U	--	0.00166 U	0.00174 U	--
1,1,2,2-Tetrachloroethane	0.023	30	nv	nv	0.00127 U	0.00142 U	--	0.00124 U	0.00131 U	--
1,1,2-Trichloroethane	0.02	18	nv	nv	0.00110 U	0.00122 U	--	0.00107 U	0.00113 U	--
1,1,2-Trichlorotrifluoroethane	80000	74000	nv	nv	0.00138 U	0.00154 U	--	0.00135 U	0.00142 U	--
1,1-Dichloroethane	18	11000	nv	nv	**0.00184 J**	0.00100 U	--	0.000881 U	0.000927 U	--
1,1-Dichloroethylene	0.05	2300	nv	nv	0.00111 U	0.00124 U	--	0.00109 U	0.00114 U	--
1,1-Dichloropropene	0.13	36	nv	nv	0.00148 U	0.00165 U	--	0.00146 U	0.00153 U	--
1,2,3-trichlorobenzene	26	120	nv	nv	0.0134 U	0.0150 U	--	0.0132 U	0.0139 U	--
1,2,3-Trichloropropane	0.00053	0.2	nv	nv	0.00298 U	0.00330 U	--	0.00290 U	0.00306 U	--
1,2,3-Trimethylbenzene	21	1600	nv	nv	0.00291 U	0.00322 U	--	0.00284 U	0.00299 U	--
1,2,4-Trichlorobenzene	4.8	120	nv	nv	0.00808 U	0.00899 U	--	0.00789 U	0.00831 U	--
1,2,4-Trimethylbenzene	33	1600	nv	nv	0.00291 U	**0.00362 J**	--	0.00284 U	0.00299 U	--
1,2-Dibromo-3-chloropropane	0.0017	0.15	nv	nv	0.00716 U	0.00796 U	--	0.00699 U	0.00736 U	--
1,2-Dibromoethane	0.00021	2.5	nv	nv	0.00119 U	0.00132 U	--	0.00116 U	0.00123 U	--
1,2-Dichlorobenzene	18	720	nv	nv	**0.00207 J**	0.000868 U	--	0.000762 U	0.000802 U	--
1,2-Dichloroethane	0.014	41	nv	nv	0.00119 U	0.00132 U	--	0.00116 U	0.00123 U	--
1,2-Dichloropropane	0.023	61	nv	nv	0.00260 U	0.00290 U	--	0.00254 U	0.00268 U	--
1,3,5-Trimethylbenzene	36	1500	nv	nv	0.00367 U	0.00408 U	--	0.00359 U	0.00378 U	--
1,3-Dichlorobenzene	6.7	120	nv	nv	0.00110 U	0.00122 U	--	0.00108 U	0.00113 U	--
1,3-Dichloropropane	0.064	36	nv	nv	0.000920 U	0.00102 U	--	0.000899 U	0.000946 U	--
1,4-Dichlorobenzene	2.1	250	nv	nv	0.00128 U	0.00143 U	--	0.00125 U	0.00132 U	--
2,2-Dichloropropane	0.12	61	nv	nv	0.00253 U	0.00282 U	--	0.00248 U	0.00260 U	--
2-Chlorotoluene	9.1	1200	nv	nv	0.00158 U	0.00176 U	--	0.00155 U	0.00163 U	--
4-Chlorotoluene	11	1600	nv	nv	0.000826 U	0.000919 U	--	0.000807 U	0.000850 U	--
4-Isopropyltoluene	230	8200	nv	nv	0.00468 U	0.00520 U	--	0.00458 U	0.00481 U	--
Acetone	43	66000	nv	nv	0.0670 U	0.0745 U	--	0.0654 U	0.0689 U	--
Benzene	0.026	120	nv	nv	**0.00193**	**0.00189 J**	--	**0.00121 J**	0.000882 U	--
Bromobenzene	2.3	390	nv	nv	0.00165 U	0.00184 U	--	0.00161 U	0.00170 U	--
Bromodichloromethane	0.36	98	nv	nv	0.00133 U	0.00148 U	--	0.00130 U	0.00137 U	--
Bromoform	0.44	400	nv	nv	0.00215 U	0.00239 U	--	0.00210 U	0.00221 U	--
Bromomethane	0.13	39	nv	nv	0.00362 U	0.00402 U	--	0.00353 U	0.00372 U	--
Carbon tetrachloride	0.062	35	nv	nv	0.00164 U	0.00184 U	--	0.00161 U	0.00170 U	--
Chlorobenzene	1.1	520	nv	nv	0.000385 U	0.000429 U	--	0.000376 U	0.000397 U	--
Chloroethane	31	27000	nv	nv	0.00312 U	0.00347 U	--	0.00305 U	0.00321 U	--
Chloroform	0.33	16	nv	nv	0.00189 U	0.00210 U	--	0.00185 U	0.00194 U	--
Chloromethane	0.41	140	nv	nv	0.00799 U	0.00888 U	--	0.00780 U	0.00822 U	--
cis-1,2-Dichloroethylene	0.25	140	nv	nv	**0.00266 J**	0.00150 U	--	0.00132 U	0.00139 U	--
cis-1,3-Dichloropropene	0.0066	8	nv	nv	0.00139 U	0.00155 U	--	0.00136 U	0.00143 U	--
Dibromochloromethane	0.36	72	nv	nv	0.00112 U	0.00125 U	--	0.00110 U	0.00115 U	--
Dibromomethane	1.1	81	nv	nv	0.00138 U	0.00153 U	--	0.00135 U	0.00142 U	--
Dichlorodifluoromethane	240	1400	nv	nv	0.00296 U	0.00328 U	--	0.00289 U	0.00304 U	--
Diisopropyl ether	12	4600	nv	nv	**0.0022**	0.000837 U	--	0.000735 U	0.000775 U	--
Ethylbenzene	7.6	6400	nv	nv	**0.0022 J**	**0.0053**	--	0.00132 U	0.00139 U	--
Isopropylbenzene	350	4300	nv	nv	**0.00202 J**	**0.00127 J**	--	0.000762 U	0.000802 U	--
MEK	29	40000	nv	nv	0.117 U	0.129 U	--	0.114 U	0.119 U	--
Methylene chloride	0.013	1600	nv	nv	0.0122 U	0.0135 U	--	0.0119 U	0.0126 U	--
MIBK	4.9	5900	nv	nv	**0.00794 J**	**0.00928 J**	--	0.00409 U	0.00431 U	--
MTBE	0.62	800	nv	nv	0.000643 U	0.000715 U	--	0.000627 U	**0.000708 J**	--
Naphthalene	31	220	nv	nv	0.00896 U	**0.0175 J**	--	0.00875 U	0.00922 U	--
n-Butylbenzene	150	3300	nv	nv	0.00964 U	0.0107 U	--	0.00942 U	0.00991 U	--
n-Propylbenzene	45	2200	nv	nv	**0.00266 J**	0.00194 U	--	0.00171 U	0.00179 U	--
p-Isopropyltoluene	230	8200	nv	nv	0.00468 U	0.00520 U	--	0.00458 U	0.00481 U	--
sec-Butylbenzene	85	3300	nv	nv	0.00529 U	0.00588 U	--	0.00517 U	0.00544 U	--
Styrene	3.3	6700	nv	nv	0.0230 U	0.0255 U	--	0.000410 U	0.000432 U	--
t-butylbenzene	100	3300	nv	nv	0.00358 U	0.00398 U	--	0.00350 U	0.00368 U	--
Tetrachloroethylene	0.05	710	nv	nv	**0.0045 J**	0.00183 U	--	0.00160 U	0.00170 U	--
Toluene	8.2	5900	nv	nv	0.00918 U	0.0102 U	--	0.00233 U	0.00245 U	--
trans-1,2-Dichloroethylene	0.49	590	nv	nv	0.00191 U	0.00212 U	--	0.00187 U	0.00196 U	--
trans-1,3-Dichloropropene	0.036	36	nv	nv	0.00209 U	0.00233 U	--	0.00205 U	0.00216 U	--
Trichloroethylene	0.034	18	nv	nv	0.00107 U	0.00119 U	--	0.00105 U	0.00110 U	--
Trichlorofluoromethane	130	25000	nv	nv	0.00152 U	0.00169 U	--	0.00149 U	0.00156 U	--
Vinyl Chloride	0.022	3.7	nv	nv	0.00213 U	0.00237 U	--	0.00208 U	0.00219 U	--
Xylenes	120	6000	nv	nv	**0.00836 J**	**0.0283**	--	0.00158 U	0.00166 U	--

	B03 (4-5) SO 06/15/2021	B03 (7-8) SO 06/15/2021	B04 (0-1) SO 06/15/2021	B04 (7-8) SO 06/15/2021	B05 (0-1) SO 06/15/2021	B05 (5-6) SO 06/15/2021	B06 (1-2) SO 06/15/2021	B06 (7-8) SO 06/15/2021	B07 (1-2) SO 06/15/2021	B07 (6-7) SO 06/15/2021
Metals (SW6010D)										
Arsenic	**1.15 J**	**2.23**	**0.591 J**	**2.02**	**1.54 J**	**1.3 J**	**1.65 J**	**3.99**	**2.15**	**1.66 J**
Lead	**3.5**	**3.32**	**7.28**	**4.18**	**4.5**	**4.07**	**5**	**11.8**	**7.34**	**4.2**
Volatile Organic Compounds (SW8260C)										
1,1,1,2-Tetrachloroethane	0.00163 U	0.00165 U	0.00168 U	0.00149 U	0.00176 U	0.00160 U	0.00166 U	0.00232 U	0.00217 U	0.00155 U
1,1,1-Trichloroethane	0.00158 U	0.00161 U	0.00164 U	0.00145 U	0.00172 U	0.00155 U	0.00162 U	0.00225 U	0.00211 U	0.00152 U
1,1,2,2-Tetrachloroethane	0.00119 U	0.00121 U	0.00123 U	0.00109 U	0.00129 U	0.00117 U	0.00122 U	0.00170 U	0.00160 U	0.00115 U
1,1,2-Trichloroethane	0.00102 U	0.00104 U	0.00106 U	0.000935 U	0.00111 U	0.00101 U	0.00104 U	0.00146 U	0.00136 U	0.000981 U
1,1,2-Trichlorotrifluoroethane	0.00129 U	0.00131 U	0.00134 U	0.00118 U	0.00140 U	0.00127 U	0.00132 U	0.00184 U	0.00172 U	0.00123 U
1,1-Dichloroethane	0.000841 U	0.000853 U	0.000872 U	0.000769 U	0.000912 U	0.000827 U	0.000859 U	0.00120 U	0.00112 U	0.000807 U
1,1-Dichloroethylene	0.00104 U	0.00105 U	0.00108 U	0.000950 U	0.00112 U	0.00102 U	0.00106 U	0.00148 U	0.00138 U	0.000995 U
1,1-Dichloropropene	0.00139 U	0.00140 U	0.00143 U	0.00127 U	0.00151 U	0.00137 U	0.00142 U	0.00198 U	0.00185 U	0.00133 U
1,2,3-trichlorobenzene	0.0126 U	0.0128 U	0.0131 U	0.0115 U	0.0137 U	0.0123 U	0.0129 U	0.0179 U	0.0168 U	0.0120 U
1,2,3-Trichloropropane	0.00278 U	0.00281 U	0.00288 U	0.00254 U	0.00301 U	0.00273 U	0.00284 U	0.00396 U	0.00371 U	0.00266 U
1,2,3-Trimethylbenzene	0.00271 U	0.00275 U	0.00280 U	0.00248 U	0.00294 U	0.00266 U	0.00276 U	0.00385 U	0.00361 U	0.00259 U
1,2,4-Trichlorobenzene	0.00753 U	0.00765 U	0.00781 U	0.00689 U	0.00818 U	0.00741 U	0.00770 U	0.0108 U	0.0101 U	0.00723 U
1,2,4-Trimethylbenzene	0.00271 U	0.00275 U	0.00280 U	0.00248 U	0.00294 U	0.00266 U	0.00276 U	0.00385 U	0.00361 U	0.00259 U
1,2-Dibromo-3-chloropropane	0.00668 U	0.00678 U	0.00692 U	0.00611 U	0.00725 U	0.00657 U	0.00682 U	0.00953 U	0.00892 U	0.00640 U
1,2-Dibromoethane	0.00111 U	0.00113 U	0.00116 U	0.00102 U	0.00121 U	0.00109 U	0.00113 U	0.00158 U	0.00148 U	0.00106 U
1,2-Dichlorobenzene	0.000728 U	0.000738 U	0.000755 U	0.000666 U	0.000789 U	0.000716 U	0.000743 U	0.00104 U	0.000973 U	0.000698 U
1,2-Dichloroethane	0.00112 U	0.00113 U	0.00116 U	0.00102 U	0.00121 U	0.00109 U	0.00113 U	0.00159 U	0.00149 U	0.00107 U
1,2-Dichloropropane	0.00243 U	0.00247 U	0.00252 U	0.00222 U	0.00264 U	0.00239 U	0.00249 U	0.00348 U	0.00325 U	0.00234 U
1,3,5-Trimethylbenzene	0.00343 U	0.00347 U	0.00355 U	0.00313 U	0.00372 U	0.00337 U	0.00350 U	0.00489 U	0.00458 U	0.00328 U
1,3-Dichlorobenzene	0.00103 U	0.00104 U	0.00107 U	0.000940 U	0.00111 U	0.00101 U	0.00105 U	0.00147 U	0.00137 U	0.000985 U
1,3-Dichloropropane	0.000859 U	0.000871 U	0.000890 U	0.000784 U	0.000932 U	0.000844 U	0.000876 U	0.00122 U	0.00115 U	0.000822 U
1,4-Dichlorobenzene	0.00120 U	0.00121 U	0.00124 U	0.00110 U	0.00130 U	0.00118 U	0.00122 U	0.00171 U	0.00160 U	0.00115 U
2,2-Dichloropropane	0.00236 U	0.00240 U	0.00245 U	0.00216 U	0.00256 U	0.00232 U	0.00241 U	0.00337 U	0.00316 U	0.00227 U
2-Chlorotoluene	0.00149 U	0.00150 U	0.00154 U	0.00136 U	0.00161 U	0.00145 U	0.00152 U	0.00212 U	0.00198 U	0.00142 U
4-Chlorotoluene	0.000771 U	0.000782 U	0.000799 U	0.000705 U	0.000836 U	0.000757 U	0.000787 U	0.00110 U	0.00103 U	0.000739 U
4-Isopropyltoluene	0.00437 U	0.00443 U	0.00453 U	0.00400 U	0.00474 U	0.00429 U	0.00445 U	0.00623 U	0.00583 U	0.00419 U
Acetone	0.0625 U	0.0634 U	0.0648 U	0.0572 U	0.0678 U	0.0614 U	0.0638 U	0.0891 U	0.0835 U	0.0599 U
Benzene	0.000800 U	0.000812 U	0.000829 U	0.000732 U	0.000868 U	0.000787 U	0.000817 U	0.00114 U	0.00107 U	0.000767 U
Bromobenzene	0.00154 U	0.00157 U	0.00159 U	0.00141 U	0.00168 U	0.00152 U	0.00157 U	0.00220 U	0.00207 U	0.00148 U
Bromodichloromethane	0.00125 U	0.00125 U	0.00128 U	0.00114 U	0.00135 U	0.00122 U	0.00126 U	0.00177 U	0.00165 U	0.00119 U
Bromoform	0.00201 U	0.00204 U	0.00208 U	0.00183 U	0.00218 U	0.00197 U	0.00205 U	0.00286 U	0.00268 U	0.00192 U
Bromomethane	0.00337 U	0.00342 U	0.00350 U	0.00309 U	0.00366 U	0.00331 U	0.00344 U	0.00482 U	0.00451 U	0.00324 U
Carbon tetrachloride	0.00154 U	0.00156 U	0.00159 U	0.00140 U	0.00167 U	0.00151 U	0.00157 U	0.00220 U	0.00205 U	0.00148 U
Chlorobenzene	0.000360 U	0.000365 U	0.000373 U	0.000329 U	0.000390 U	0.000353 U	0.000367 U	0.000513 U	0.000481 U	0.000345 U
Chloroethane	0.00292 U	0.00295 U	0.00302 U	0.00266 U	0.00316 U	0.00286 U	0.00297 U	0.00415 U	0.00390 U	0.00279 U
Chloroform	0.00177 U	0.00179 U	0.00183 U	0.00161 U	0.00191 U	0.00174 U	0.00180 U	0.00251 U	0.00236 U	0.00169 U
Chloromethane	0.00745 U	0.00756 U	0.00772 U	0.00681 U	0.00809 U	0.00733 U	0.00761 U	0.0106 U	0.00995 U	0.00714 U
cis-1,2-Dichloroethylene	0.00126 U	0.00128 U	0.00131 U	0.00115 U	0.00137 U	0.00123 U	0.00129 U	0.00179 U	0.00168 U	0.00120 U
cis-1,3-Dichloropropene	0.00130 U	0.00132 U	0.00135 U	0.00118 U	0.00141 U	0.00128 U	0.00132 U	0.00184 U	0.00174 U	0.00125 U
Dibromochloromethane	0.00105 U	0.00106 U	0.00109 U	0.000958 U	0.00113 U	0.00103 U	0.00107 U	0.00149 U	0.00140 U	0.00100 U
Dibromomethane	0.00129 U	0.00131 U	0.00134 U	0.00117 U	0.00140 U	0.00127 U	0.00131 U	0.00184 U	0.00171 U	0.00123 U
Dichlorodifluoromethane	0.00275 U	0.00280 U	0.00286 U	0.00252 U	0.00299 U	0.00271 U	0.00281 U	0.00394 U	0.00368 U	0.00264 U
Diisopropyl ether	0.000702 U	0.000712 U	0.000729 U	0.000642 U	0.000762 U	0.000690 U	0.000717 U	0.00100 U	0.000939 U	0.000673 U
Ethylbenzene	0.00126 U	0.00128 U	0.00131 U	0.00115 U	0.00137 U	0.00124 U	0.00129 U	0.00181 U	0.00169 U	0.00121 U
Isopropylbenzene	0.000728 U	0.000738 U	0.000755 U	0.000666 U	0.000789 U	0.000716 U	0.000743 U	0.00104 U	0.000973 U	0.000698 U
MEK	0.108 U	0.110 U	0.112 U	0.0994 U	0.118 U	0.107 U	0.111 U	0.155 U	0.145 U	0.104 U
Methylene chloride	0.0114 U	0.0116 U	0.0118 U	0.0104 U	0.0124 U	0.0112 U	0.0117 U	0.0162 U	0.0151 U	0.0109 U
MIBK	0.00390 U	0.00396 U	0.00404 U	0.00357 U	0.00424 U	0.00384 U	0.00399 U	0.00557 U	0.00522 U	0.00375 U
MTBE	0.000599 U	0.000608 U	0.000622 U	0.000548 U	0.000651 U	0.000589 U	0.000611 U	0.000855 U	0.000800 U	0.000575 U
Naphthalene	0.00836 U	0.00848 U	0.00867 U	0.00764 U	0.00907 U	0.00822 U	0.00853 U	0.0119 U	0.0112 U	0.00801 U
n-Butylbenzene	0.00899 U	0.00913 U	0.00933 U	0.00822 U	0.00976 U	0.00884 U	0.00918 U	0.0128 U	0.0120 U	0.00862 U
n-Propylbenzene	0.00163 U	0.00165 U	0.00169 U	0.00149 U	0.00176 U	0.00160 U	0.00166 U	0.00232 U	0.00217 U	0.00156 U
p-Isopropyltoluene	0.00437 U	0.00443 U	0.00453 U	0.00400 U	0.00474 U	0.00429 U	0.00445 U	0.00623 U	0.00583 U	0.00419 U
sec-Butylbenzene	0.00493 U	0.00501 U	0.00511 U	0.00451 U	0.00535 U	0.00486 U	0.00504 U	0.00704 U	0.00659 U	0.00473 U
Styrene	0.000392 U	0.000398 U	0.000407 U	0.000358 U	0.000425 U	0.000385 U	0.000400 U	0.000559 U	0.000524 U	0.000376 U
t-butylbenzene	0.00334 U	0.00339 U	0.00347 U	0.00306 U	0.00362 U	0.00328 U	0.00341 U	0.00477 U	0.00446 U	0.00321 U
Tetrachloroethylene	0.00154 U	0.00156 U	0.00159 U	0.00140 U	0.00167 U	0.00151 U	0.00156 U	**0.0475**	0.00205 U	0.00148 U
Toluene	0.00222 U	0.00226 U	0.00231 U	0.00204 U	0.00241 U	0.00219 U	0.00228 U	0.00318 U	0.00297 U	0.00214 U
trans-1,2-Dichloroethylene	0.00178 U	0.00180 U	0.00185 U	0.00163 U	0.00193 U	0.00175 U	0.00181 U	0.00255 U	0.00238 U	0.00171 U
trans-1,3-Dichloropropene	0.00195 U	0.00198 U	0.00202 U	0.00179 U	0.00212 U	0.00192 U	0.00199 U	0.00279 U	0.00260 U	0.00187 U
Trichloroethylene	0.00100 U	0.00101 U	0.00104 U	0.000914 U	0.00109 U	0.000984 U	0.00102 U	0.00143 U	0.00134 U	0.000959 U
Trichlorofluoromethane	0.00142 U	0.00144 U	0.00147 U	0.00129 U	0.00154 U	0.00140 U	0.00144 U	0.00201 U	0.00189 U	0.00136 U
Vinyl Chloride	0.00198 U	0.00202 U	0.00206 U	0.00182 U	0.00216 U	0.00195 U	0.00202 U	0.00284 U	0.00265 U	0.00191 U
Xylenes	**0.0018 J**	**0.00195 J**	0.00156 U	**0.00152 J**	0.00163 U	**0.00164 J**	0.00154 U	0.00215 U	0.00202 U	0.00144 U

	B08 (2-3) SO 06/15/2021	FB01 SO 06/15/2021	B08 (9-10) SO 06/15/2021	B09 (1-2) SO 06/15/2021	B09 (7-8) SO 06/15/2021	B10 (3-4) SO 06/16/2021	B10 (7-8) SO 06/16/2021	B10 (11-12) SO 06/16/2021
Metals (SW6010D)								
Arsenic	**2.07**	**2.13**	**2.24**	**4.03**	**2.7**	**3.4**	**7.06**	**1.38 J**
Lead	**5.99**	**6.03**	**5.82**	**20.7**	**7.96**	**27.8**	**25**	**3.10**
Volatile Organic Compounds (SW8260C)								
1,1,1,2-Tetrachloroethane	0.00188 U	0.00176 U	0.00154 U	0.00173 U	0.00245 U	0.00177 U	0.00244 U	--
1,1,1-Trichloroethane	0.00182 U	0.00171 U	0.00150 U	0.00168 U	0.00239 U	0.00171 U	0.00237 U	--
1,1,2,2-Tetrachloroethane	0.00137 U	0.00129 U	0.00113 U	0.00127 U	0.00179 U	0.00129 U	0.00179 U	--
1,1,2-Trichloroethane	0.00118 U	0.00111 U	0.000972 U	0.00109 U	0.00155 U	0.00111 U	0.00153 U	--
1,1,2-Trichlorotrifluoroethane	0.00149 U	0.00140 U	0.00123 U	0.00137 U	0.00194 U	0.00141 UJ	0.00194 U	--
1,1-Dichloroethane	0.000968 U	0.000912 U	0.000799 U	0.000894 U	0.00127 U	0.000913 U	0.00126 U	--
1,1-Dichloroethylene	0.00120 U	0.00113 U	0.000986 U	0.00110 U	0.00156 U	0.00113 U	0.00156 U	--
1,1-Dichloropropene	0.00160 U	0.00151 U	0.00132 U	0.00147 U	0.00210 U	0.00150 U	0.00208 U	--
1,2,3-trichlorobenzene	0.0144 U	0.0136 U	0.0119 U	0.0133 U	0.0190 U	0.0136 U	0.0189 U	--
1,2,3-Trichloropropane	0.00320 U	0.00300 U	0.00263 U	0.00295 U	0.00419 U	0.00301 U	0.00416 U	--
1,2,3-Trimethylbenzene	0.00312 U	0.00293 U	0.00257 U	0.00287 U	0.00408 U	0.00294 U	0.00405 U	--
1,2,4-Trichlorobenzene	0.00868 U	0.00818 U	0.00716 U	0.00800 U	0.0114 U	0.00818 U	0.0113 U	--
1,2,4-Trimethylbenzene	0.00312 U	0.00293 U	0.00257 U	0.00287 U	0.00408 U	0.00294 U	0.00405 U	--
1,2-Dibromo-3-chloropropane	0.00770 U	0.00725 U	0.00635 U	0.00710 U	0.0101 U	0.00725 U	0.0100 U	--
1,2-Dibromoethane	0.00128 U	0.00120 U	0.00105 U	0.00118 U	0.00168 U	0.00121 U	0.00166 U	--
1,2-Dichlorobenzene	0.000839 U	0.000790 U	0.000692 U	0.000773 U	0.00110 U	0.000791 U	0.00109 U	--
1,2-Dichloroethane	0.00128 U	0.00120 U	0.00106 U	0.00118 U	0.00168 U	0.00121 U	0.00166 U	--
1,2-Dichloropropane	0.00280 U	0.00264 U	0.00231 U	0.00259 U	0.00367 U	0.00264 U	0.00365 U	--
1,3,5-Trimethylbenzene	0.00395 U	0.00371 U	0.00325 U	0.00364 U	0.00517 U	0.00372 U	0.00513 U	--
1,3-Dichlorobenzene	0.00118 U	0.00111 U	0.000976 U	0.00109 U	0.00155 U	0.00112 U	0.00154 U	--
1,3-Dichloropropane	0.000989 U	0.000931 U	0.000815 U	0.000912 U	0.00130 U	0.000932 U	0.00129 U	--
1,4-Dichlorobenzene	0.00138 U	0.00130 U	0.00114 U	0.00128 U	0.00181 U	0.00130 U	0.00179 U	--
2,2-Dichloropropane	0.00272 U	0.00257 U	0.00225 U	0.00251 U	0.00356 U	0.00257 U	0.00353 U	--
2-Chlorotoluene	0.00171 U	0.00160 U	0.00140 U	0.00157 U	0.00223 U	0.00161 U	0.00223 U	--
4-Chlorotoluene	0.000888 U	0.000836 U	0.000733 U	0.000819 U	0.00116 U	0.000837 U	0.00116 U	--
4-Isopropyltoluene	0.00504 U	0.00474 U	0.00415 U	0.00464 U	0.00659 U	0.00475 U	0.00653 U	--
Acetone	0.0720 U	0.0678 U	0.0594 U	0.0664 U	0.0944 U	0.0679 U	0.0936 U	--
Benzene	0.000921 U	0.000867 U	0.000760 U	0.000850 U	0.00121 U	**0.000884 J**	**0.00141 J**	--
Bromobenzene	0.00178 U	0.00168 U	0.00147 U	0.00164 U	0.00233 U	0.00167 U	0.00231 U	--
Bromodichloromethane	0.00143 U	0.00135 U	0.00118 U	0.00132 U	0.00188 U	0.00135 U	0.00186 U	--
Bromoform	0.00231 U	0.00217 U	0.00190 U	0.00212 U	0.00303 U	0.00218 U	0.00300 U	--
Bromomethane	0.00389 U	0.00365 U	0.00321 U	0.00358 U	0.00509 U	0.00367 U	0.00505 U	--
Carbon tetrachloride	0.00177 U	0.00166 U	0.00147 U	0.00164 U	0.00233 U	0.00167 U	0.00231 U	--
Chlorobenzene	0.000414 U	0.000390 U	0.000342 U	0.000382 U	0.000543 U	0.000391 U	0.000539 U	--
Chloroethane	0.00335 U	0.00316 U	0.00277 U	0.00310 U	0.00439 U	0.00316 U	0.00436 U	--
Chloroform	0.00203 U	0.00192 U	0.00168 U	0.00188 U	0.00266 U	0.00191 U	0.00265 U	--
Chloromethane	0.00858 U	0.00808 U	0.00708 U	0.00791 U	0.0112 U	0.00810 U	0.0112 U	--
cis-1,2-Dichloroethylene	0.00145 U	0.00136 U	0.00120 U	0.00133 U	0.00190 U	0.00136 U	0.00189 U	--
cis-1,3-Dichloropropene	0.00149 U	0.00141 U	0.00123 U	0.00138 U	0.00196 U	0.00141 U	0.00194 U	--
Dibromochloromethane	0.00121 U	0.00114 U	0.000996 U	0.00111 U	0.00158 U	0.00114 U	0.00157 U	--
Dibromomethane	0.00148 U	0.00139 U	0.00122 U	0.00137 U	0.00194 U	0.00140 U	0.00192 U	--
Dichlorodifluoromethane	0.00317 U	0.00299 U	0.00262 U	0.00293 U	0.00416 U	0.00299 U	0.00413 U	--
Diisopropyl ether	0.000809 U	0.000761 U	0.000667 U	0.000746 U	0.00106 U	0.000763 U	0.00105 U	--
Ethylbenzene	0.00145 U	0.00136 U	0.00120 U	0.00134 U	0.00191 U	0.00137 U	0.00189 U	--
Isopropylbenzene	0.000839 U	0.000790 U	0.000692 U	0.000773 U	0.00110 U	0.000791 U	0.00109 U	--
MEK	0.126 U	0.118 U	0.103 U	0.115 U	0.164 U	0.118 U	0.163 U	--
Methylene chloride	0.0131 U	0.0123 U	0.0108 U	0.0121 U	0.0171 U	0.0124 U	0.0171 U	--
MIBK	0.00450 U	0.00423 U	0.00371 U	0.00415 U	0.00589 U	0.00424 U	0.00586 U	--
MTBE	0.000691 U	0.000650 U	0.000570 U	0.000637 U	0.000906 U	0.000651 U	0.000897 U	--
Naphthalene	0.00962 U	0.00907 U	0.00794 U	0.00888 U	0.0126 U	0.00908 U	0.0125 U	--
n-Butylbenzene	0.0104 U	0.00976 U	0.00855 U	0.00955 U	0.0136 U	0.00977 U	0.0135 U	--
n-Propylbenzene	0.00188 U	0.00176 U	0.00154 U	0.00173 U	0.00246 U	0.00177 U	0.00244 U	--
p-Isopropyltoluene	0.00504 U	0.00474 U	0.00415 U	0.00464 U	0.00659 U	0.00475 U	0.00653 U	--
sec-Butylbenzene	0.00568 U	0.00536 U	0.00468 U	0.00524 U	0.00745 U	0.00536 U	0.00739 U	--
Styrene	0.000451 U	0.000426 U	0.000373 U	0.000417 U	0.000592 U	0.000426 U	0.000587 U	--
t-butylbenzene	0.00385 U	0.00362 U	0.00317 U	0.00355 U	0.00505 U	0.00363 U	0.00500 U	--
Tetrachloroethylene	0.00177 U	0.00166 U	0.00145 U	**0.0888**	**0.0297**	0.00167 U	0.00229 U	--
Toluene	0.00257 U	0.00241 U	0.00211 U	0.00236 U	0.00337 U	0.00930 U	0.0128 U	--
trans-1,2-Dichloroethylene	0.00206 U	0.00193 U	0.00169 U	0.00189 U	0.00269 U	0.00193 U	0.00266 U	--
trans-1,3-Dichloropropene	0.00225 U	0.00212 U	0.00185 U	0.00208 U	0.00295 U	0.00212 U	0.00292 U	--
Trichloroethylene	0.00115 U	0.00108 U	0.000950 U	0.00106 U	0.00151 U	0.00109 U	0.00150 U	--
Trichlorofluoromethane	0.00163 U	0.00153 U	0.00134 U	0.00150 U	0.00214 U	0.00154 U	0.00211 U	--
Vinyl Chloride	0.00229 U	0.00216 U	0.00189 U	0.00211 U	0.00300 U	0.00216 U	0.00297 U	--
Xylenes	0.00173 U	0.00164 U	0.00143 U	0.00160 U	0.00228 U	**0.00302 J**	0.00226 U	--

Table 1
Summary of Soil Analytical Results
203 Chelsea Street, El Paso, Texas
City of El Paso

	$^{GW}Soil_{Ing}$ PCL[A]	$^{Tot}Soil_{Comb}$ PCL[B]	TSSBC[C]	TPH PCL[D]	B01 (1-2) SO	B01 (6-7) SO	B01 (12-13) SO	B02 (1-2) SO	B02 (6-7) SO	B02 (10-11) SO	B03 (4-5) SO	B03 (7-8) SO	B04 (0-1) SO	B04 (7-8) SO	B05 (0-1) SO	B05 (5-6) SO	B06 (1-2) SO	B06 (7-8) SO	B07 (1-2) SO	B07 (6-7) SO	B08 (2-3) SO	FB01 SO	B08 (9-10) SO	B09 (1-2) SO	B09 (7-8) SO	B10 (3-4) SO	B10 (7-8) SO	B10 (11-12) SO
					6/16/2021	6/16/2021	6/16/2021	6/16/2021	6/16/2021	6/16/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/15/2021	06/16/2021	06/16/2021	06/16/2021
Polycyclic Aromatic Hydrocarbons (SW8270D SIM)																												
Acenaphthene	240	3000	nv	nv	0.00210 U	0.00213 U	--	0.00216 U	0.00218 U	--	0.00220 U	0.00218 U	0.00218 U	0.00221 U	0.00218 U	0.00222 U	0.00222 U	0.00209 U	0.00233 U	0.00222 U	0.00236 U	0.00209 U	0.00238 U	0.00209 U	0.00209 U	0.0217 U	0.00288 U	--
Acenaphthylene	410	3800	nv	nv	**0.0044 J**	**0.00954**	--	0.00223 U	0.00225 U	--	0.00227 U	0.00226 U	0.00225 U	0.00228 U	0.00225 U	0.00229 U	0.00229 U	0.00216 U	0.00241 U	0.00229 U	0.00244 U	0.00216 U	0.00246 U	0.00216 U	0.00216 U	0.0224 U	0.00297 U	--
Anthracene	6900	18000	nv	nv	**0.00292 J**	**0.0123**	--	**0.00245 J**	0.00240 U	--	0.00242 U	0.00240 U	0.00240 U	0.00243 U	0.00240 U	0.00244 U	0.00244 U	0.00230 U	**0.00587 J**	0.00244 U	0.00260 U	0.00230 U	0.00262 U	0.00230 U	0.00230 U	0.0238 U	0.00317 U	--
Benzo(a)anthracene	130	41	nv	nv	**0.0171**	**0.013**	--	**0.0186**	**0.00331 J**	--	0.00182 U	0.00181 U	0.00181 U	0.00183 U	**0.00182 J**	0.00184 U	0.00184 U	0.00173 U	**0.0202**	0.00184 U	0.00196 U	0.00173 U	0.00197 U	0.00173 U	0.00173 U	0.0179 U	**0.005 J**	--
Benzo(a)pyrene	7.6	4.1	nv	nv	**0.0245**	**0.0179**	--	**0.0206**	**0.00468 J**	--	0.00188 U	0.00187 U	0.00187 U	0.00189 U	**0.00259 J**	0.00190 U	0.00190 U	0.00179 U	**0.0175**	0.00190 U	0.00202 U	0.00179 U	0.00204 U	0.00179 U	0.00179 U	0.0186 U	**0.00678 J**	--
Benzo(b)fluoranthene	440	42	nv	nv	**0.0464**	**0.0337**	--	**0.0352**	**0.00983**	--	0.00161 U	0.00160 U	0.00160 U	0.00162 U	**0.00216 J**	0.00162 U	0.00162 U	0.00153 U	**0.0245**	0.00162 U	0.00173 U	0.00153 U	0.00174 U	0.00153 U	0.00153 U	0.0159 U	**0.0126**	--
Benzo(g,h,i)perylene	46000	1800	nv	nv	**0.0448**	**0.0388**	--	**0.018**	**0.00717**	--	0.00186 U	0.00185 U	**0.00401 J**	0.00187 U	**0.00689**	0.00188 U	0.00188 U	0.00177 U	**0.0153**	0.00188 U	0.00200 U	0.00177 U	0.00201 U	0.00177 U	0.00177 U	0.0183 U	**0.00688 J**	--
Benzo(k)fluoranthene	4500	420	nv	nv	**0.0163**	**0.0101**	--	**0.012**	**0.00308 J**	--	0.00226 U	0.00225 U	0.00224 U	0.00227 U	0.00224 U	0.00228 U	0.00228 U	0.00215 U	**0.00875**	0.00228 U	0.00243 U	0.00215 U	0.00245 U	0.00215 U	0.00215 U	0.0223 U	**0.00387 J**	--
Chrysene	11000	4100	nv	nv	**0.0262**	**0.0225**	--	**0.028**	**0.00659**	--	0.00244 U	0.00242 U	0.00242 U	0.00245 U	0.00242 U	0.00246 U	0.00246 U	0.00232 U	**0.0191**	0.00246 U	0.00262 U	0.00232 U	0.00264 U	0.00232 U	0.00232 U	0.0240 U	**0.00721 J**	--
Dibenzo(a,h)anthracene	15	4	nv	nv	**0.00664**	**0.00503 J**	--	**0.00391 J**	0.00179 U	--	0.00181 U	0.00180 U	0.00180 U	0.00182 U	**0.00217 J**	0.00182 U	0.00183 U	0.00172 U	**0.00228 J**	0.00182 U	0.00194 U	0.00172 U	0.00196 U	0.00172 U	0.00172 U	0.0178 U	0.00237 U	--
Dibenzofuran	33	270	nv	nv	0.00214 U	**0.0033 J**	--	0.00220 U	0.00222 U	--	0.00224 U	0.00223 U	0.00222 U	0.00225 U	0.00222 U	0.00226 U	0.00226 U	0.00213 U	0.00237 U	0.00226 U	0.00241 U	0.00213 U	0.00242 U	0.00213 U	0.00213 U	0.0221 U	0.00293 U	--
Fluoranthene	1900	2300	nv	nv	**0.0387**	**0.0303**	--	**0.0417**	**0.00996**	--	0.00239 U	0.00237 U	0.00237 U	0.00240 U	0.00237 U	0.00241 U	0.00241 U	0.00227 U	**0.0635**	0.00241 U	0.00257 U	0.00227 U	0.00258 U	0.00227 U	0.00227 U	0.0235 U	**0.0119**	--
Fluorene	300	2300	nv	nv	0.00206 U	0.00209 U	--	0.00212 U	0.00214 U	--	0.00216 U	0.00214 U	0.00214 U	0.00216 U	0.00214 U	0.00218 U	0.00218 U	0.00205 U	**0.00321 J**	0.00217 U	0.00232 U	0.00205 U	0.00233 U	0.00205 U	0.00205 U	0.0212 U	0.00282 U	--
Indeno(1,2,3-cd)pyrene	1300	42	nv	nv	**0.0382**	**0.0286**	--	**0.0184**	**0.00594 J**	--	0.00190 U	0.00189 U	0.00189 U	0.00191 U	**0.00215 J**	0.00192 U	0.00192 U	0.00181 U	**0.0149**	0.00192 U	0.00205 U	0.00181 U	0.00206 U	0.00181 U	0.00181 U	0.0188 U	**0.00695 J**	--
Naphthalene	31	220	nv	nv	0.00410 U	**0.0197 J**	--	0.00422 U	0.00425 U	--	0.00429 U	0.00426 U	0.00426 U	0.00431 U	0.00426 U	0.00433 U	0.00433 U	0.00408 U	0.00455 U	0.00433 U	0.00461 U	0.00408 U	0.00464 U	0.00408 U	0.00408 U	0.0423 U	0.00562 U	--
Phenanthrene	420	1700	nv	nv	**0.00943**	**0.0252**	--	**0.015**	**0.00317 J**	--	0.00243 U	0.00241 U	0.00241 U	0.00244 U	**0.004 J**	0.00245 U	0.00245 U	0.00231 U	**0.0446**	0.00245 U	0.00261 U	0.00231 U	0.00263 U	0.00231 U	0.00231 U	0.0239 U	**0.00443 J**	--
Pyrene	1100	1700	nv	nv	**0.0349**	**0.0288**	--	**0.0388**	**0.00959**	--	0.00210 U	0.00209 U	0.00209 U	0.00211 U	**0.00343 J**	0.00212 U	0.00212 U	0.00200 U	**0.05**	0.00212 U	0.00226 U	0.00200 U	0.00227 U	0.00200 U	0.00200 U	**0.0216 J**	**0.0124**	--
Total Petroleum Hydrocarbons (TX1005)																												
C6-C12	65	1600	nv	nv	28.2 U	24.2 U	--	15.5 U	26.1 U	--	22.6 U	24.8 U	23.6 U	24.6 U	27.9 U	22.6 U	25.8 U	21.3 U	27.2 U	21.9 U	27.2 U	21.1 U	23.1 U	25.3 U	22.4 U	25.1 U	22.1 U	--
C12-C28	200	2300	nv	nv	28.2 U	24.2 U	--	15.5 U	26.1 U	--	22.6 U	24.8 U	23.6 U	24.6 U	27.9 U	22.6 U	25.8 U	21.3 U	27.2 U	21.9 U	27.2 U	21.1 U	23.1 U	25.3 U	22.4 U	**53.1 J**	22.1 U	--
C28-C35	200	2300	nv	nv	28.2 U	24.2 U	--	15.5 U	26.1 U	--	22.6 U	24.8 U	23.6 U	24.6 U	27.9 U	22.6 U	25.8 U	21.3 U	27.2 U	21.9 U	27.2 U	21.1 U	23.1 U	25.3 U	22.4 U	**115**	22.1 U	--
Total C6-C35	nv	nv	nv	12,100	28.2 U	24.2 U	--	15.5 U	26.1 U	--	22.6 U	24.8 U	23.6 U	24.6 U	27.9 U	22.6 U	25.8 U	21.3 U	27.2 U	21.9 U	27.2 U	21.1 U	23.1 U	25.3 U	22.4 U	**168**	22.1 U	--
Total Petroleum Hydrocarbons (TX1006)																												
C6 Aliphatics	170	4800	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C6-C8 Aliphatics	420	4800	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatics	3600	4000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatics	25000	3600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatics	490000	4300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatics	1000000	130000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C35 Alphatics	1000000	130000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C7-C8 Aromatics(Toluene only)	20	6400	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatics	65	1600	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatics	100	1900	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatics	200	2300	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatics	470	2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
C21-C35 Aromatics	3700	2000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Table 1
Summary of Soil Analytical Results
203 Chelsea Street, El Paso, Texas
City of El Paso

	$^{GW}Soil_{Ing}$ PCL[A]	$^{Tot}Soil_{Comb}$ PCL[B]	TSSBC[C]	TPH PCL[D]	B11 (0-1) SO 06/16/2021	FB02 SO 6/16/2021	B11 (5-6) SO 06/16/2021	B12 (0-1) SO 06/16/2021	B12 (7-8) SO 06/16/2021	B13 (7-8) SO 06/16/2021	B13 (11-12) SO 06/16/2021	B14 (0-1) SO 06/16/2021
Metals (SW6010D)												
Arsenic	5	24	5.9	5.9	**3.46 J**	**7.84 J**	**5.76**	**2.57**	**4.02**	**5.29**	**1.34 J**	**2.28**
Lead	3	500	15	15	**255 J**	**508 J**	**12.3**	**35.3**	**12.6**	**13.2**	**2.91**	**33.8**
Volatile Organic Compounds (SW8260C)												
1,1,1,2-Tetrachloroethane	1.4	65	nv	nv	0.00192 U	0.00175 U	0.00234 U	0.00155 U	0.00234 U	0.00225 U	0.00190 U	0.00154 U
1,1,1-Trichloroethane	1.6	53000	nv	nv	0.00187 U	0.00170 U	0.00227 U	0.00151 U	0.00228 U	0.00218 U	0.00185 U	0.00150 U
1,1,2,2-Tetrachloroethane	0.023	30	nv	nv	0.00141 U	0.00128 U	0.00171 U	0.00113 U	0.00171 U	0.00165 U	0.00139 U	0.00113 U
1,1,2-Trichloroethane	0.02	18	nv	nv	0.00121 U	0.00110 U	0.00147 U	0.000974 U	0.00147 U	0.00142 U	0.00120 U	0.000973 U
1,1,2-Trichlorotrifluoroethane	80000	74000	nv	nv	0.00152 U	0.00138 U	0.00186 U	0.00123 U	0.00186 U	0.00179 U	0.00152 U	0.00123 U
1,1-Dichloroethane	18	11000	nv	nv	0.000995 U	0.000903 U	0.00121 U	0.000801 U	0.00121 U	0.00116 U	0.000987 U	0.000800 U
1,1-Dichloroethylene	0.05	2300	nv	nv	0.00123 U	0.00111 U	0.00149 U	0.000989 U	0.00150 U	0.00144 U	0.00121 U	0.000987 U
1,1-Dichloropropene	0.13	36	nv	nv	0.00164 U	0.00149 U	0.00200 U	0.00132 U	0.00200 U	0.00191 U	0.00162 U	0.00132 U
1,2,3-trichlorobenzene	26	120	nv	nv	0.0148 U	0.0135 U	0.0181 U	0.0120 U	0.0181 U	0.0174 U	0.0148 U	0.0119 U
1,2,3-Trichloropropane	0.00053	0.2	nv	nv	0.00329 U	0.00298 U	0.00399 U	0.00264 U	0.00400 U	0.00384 U	0.00325 U	0.00264 U
1,2,3-Trimethylbenzene	21	1600	nv	nv	0.00320 U	0.00291 U	0.00389 U	0.00257 U	0.00391 U	0.00375 U	0.00317 U	0.00257 U
1,2,4-Trichlorobenzene	4.8	120	nv	nv	0.00892 U	0.00809 U	0.0109 U	0.00717 U	0.0109 U	0.0104 U	0.00884 U	0.00717 U
1,2,4-Trimethylbenzene	33	1600	nv	nv	0.00320 U	0.00291 U	0.00389 U	0.00257 U	0.00391 U	0.00375 U	0.00317 U	0.00257 U
1,2-Dibromo-3-chloropropane	0.0017	0.15	nv	nv	0.00791 U	0.00717 U	0.00962 U	0.00636 U	0.00964 U	0.00925 U	0.00784 U	0.00635 U
1,2-Dibromoethane	0.00021	2.5	nv	nv	0.00131 U	0.00119 U	0.00160 U	0.00105 U	0.00160 U	0.00154 U	0.00130 U	0.00106 U
1,2-Dichlorobenzene	18	720	nv	nv	0.000861 U	0.000782 U	0.00105 U	0.000693 U	0.00105 U	0.00101 U	0.000854 U	0.000692 U
1,2-Dichloroethane	0.014	41	nv	nv	0.00132 U	0.00120 U	0.00160 U	0.00105 U	0.00160 U	0.00154 U	0.00131 U	0.00106 U
1,2-Dichloropropane	0.023	61	nv	nv	0.00288 U	0.00261 U	0.00351 U	0.00232 U	0.00350 U	0.00337 U	0.00286 U	0.00231 U
1,3,5-Trimethylbenzene	36	1500	nv	nv	0.00405 U	0.00368 U	0.00493 U	0.00326 U	0.00494 U	0.00475 U	0.00402 U	0.00326 U
1,3-Dichlorobenzene	6.7	120	nv	nv	0.00122 U	0.00110 U	0.00148 U	0.000979 U	0.00148 U	0.00142 U	0.00120 U	0.000978 U
1,3-Dichloropropane	0.064	36	nv	nv	0.00101 U	0.000922 U	0.00124 U	0.000818 U	0.00124 U	0.00119 U	0.00101 U	0.000816 U
1,4-Dichlorobenzene	2.1	250	nv	nv	0.00143 U	0.00129 U	0.00173 U	0.00114 U	0.00173 U	0.00166 U	0.00140 U	0.00114 U
2,2-Dichloropropane	0.12	61	nv	nv	0.00280 U	0.00254 U	0.00341 U	0.00225 U	0.00341 U	0.00327 U	0.00277 U	0.00225 U
2-Chlorotoluene	9.1	1200	nv	nv	0.00175 U	0.00159 U	0.00213 U	0.00141 U	0.00213 U	0.00206 U	0.00174 U	0.00141 U
4-Chlorotoluene	11	1600	nv	nv	0.000913 U	0.000827 U	0.00111 U	0.000734 U	0.00111 U	0.00107 U	0.000904 U	0.000733 U
4-Isopropyltoluene	230	8200	nv	nv	0.00517 U	0.00469 U	0.00629 U	0.00416 U	0.00630 U	0.00606 U	0.00513 U	0.00415 U
Acetone	43	66000	nv	nv	0.0740 U	0.0672 U	0.0900 U	0.0596 U	0.0901 U	0.0865 U	0.0734 U	0.0595 U
Benzene	0.026	120	nv	nv	0.000946 U	0.000859 U	0.00115 U	**0.000775 J**	0.00115 U	0.00111 U	0.000939 U	0.000761 U
Bromobenzene	2.3	390	nv	nv	0.00183 U	0.00165 U	0.00223 U	0.00147 U	0.00223 U	0.00214 U	0.00181 U	0.00147 U
Bromodichloromethane	0.36	98	nv	nv	0.00147 U	0.00134 U	0.00179 U	0.00119 U	0.00179 U	0.00172 U	0.00145 U	0.00118 U
Bromoform	0.44	400	nv	nv	0.00238 U	0.00215 U	0.00288 U	0.00190 U	0.00289 U	0.00278 U	0.00235 U	0.00191 U
Bromomethane	0.13	39	nv	nv	0.00400 U	0.00362 U	0.00485 U	0.00321 U	0.00486 U	0.00468 U	0.00396 U	0.00321 U
Carbon tetrachloride	0.062	35	nv	nv	0.00182 U	0.00165 U	0.00221 U	0.00147 U	0.00221 U	0.00214 U	0.00180 U	0.00146 U
Chlorobenzene	1.1	520	nv	nv	0.000426 U	0.000386 U	0.000517 U	0.000342 U	0.000518 U	0.000498 U	0.000422 U	0.000342 U
Chloroethane	31	27000	nv	nv	0.00345 U	0.00313 U	0.00419 U	**0.00489 J**	0.00420 U	0.00403 U	0.00341 U	0.00277 U
Chloroform	0.33	16	nv	nv	0.00208 U	0.00190 U	0.00255 U	0.00168 U	0.00255 U	0.00245 U	0.00207 U	0.00168 U
Chloromethane	0.41	140	nv	nv	0.00882 U	0.00800 U	0.0107 U	0.00709 U	0.0108 U	0.0103 U	0.00874 U	0.00709 U
cis-1,2-Dichloroethylene	0.25	140	nv	nv	0.00148 U	0.00135 U	0.00181 U	0.00120 U	0.00181 U	0.00174 U	0.00148 U	0.00120 U
cis-1,3-Dichloropropene	0.0066	8	nv	nv	0.00154 U	0.00140 U	0.00187 U	0.00124 U	0.00187 U	0.00180 U	0.00152 U	0.00123 U
Dibromochloromethane	0.36	72	nv	nv	0.00124 U	0.00113 U	0.00151 U	0.000998 U	0.00151 U	0.00145 U	0.00123 U	0.000997 U
Dibromomethane	1.1	81	nv	nv	0.00152 U	0.00138 U	0.00184 U	0.00123 U	0.00186 U	0.00179 U	0.00151 U	0.00122 U
Dichlorodifluoromethane	240	1400	nv	nv	0.00326 U	0.00296 U	0.00397 U	0.00262 U	0.00397 U	0.00383 U	0.00323 U	0.00262 U
Diisopropyl ether	12	4600	nv	nv	0.000830 U	0.000754 U	0.00101 U	0.000669 U	0.00101 U	0.000973 U	0.000824 U	0.000668 U
Ethylbenzene	7.6	6400	nv	nv	0.00150 U	0.00135 U	0.00181 U	0.00121 U	0.00182 U	0.00176 U	0.00149 U	0.00120 U
Isopropylbenzene	350	4300	nv	nv	0.000861 U	0.000782 U	0.00105 U	0.000693 U	0.00105 U	**0.00113 J**	0.000854 U	0.000692 U
MEK	29	40000	nv	nv	0.129 U	0.116 U	**0.248**	0.103 U	**0.174 J**	**0.177 J**	0.128 U	0.103 U
Methylene chloride	0.013	1600	nv	nv	0.0135 U	0.0122 U	0.0163 U	0.0108 U	0.0165 U	0.0158 U	0.0133 U	0.0108 U
MIBK	4.9	5900	nv	nv	0.00463 U	0.00419 U	0.00562 U	0.00372 U	0.00564 U	0.00541 U	0.00458 U	0.00371 U
MTBE	0.62	800	nv	nv	0.000710 U	0.000644 U	0.000863 U	0.000571 U	0.000864 U	0.000830 U	0.000703 U	0.000570 U
Naphthalene	31	220	nv	nv	0.00990 U	0.00897 U	0.0120 U	0.00796 U	0.0121 U	0.0116 U	0.00980 U	0.00795 U
n-Butylbenzene	150	3300	nv	nv	0.0106 U	0.00965 U	0.0130 U	0.00856 U	0.0130 U	0.0125 U	0.0106 U	0.00855 U
n-Propylbenzene	45	2200	nv	nv	0.00193 U	0.00175 U	0.00234 U	0.00155 U	0.00234 U	0.00226 U	0.00190 U	0.00155 U
p-Isopropyltoluene	230	8200	nv	nv	0.00517 U	0.00469 U	0.00629 U	0.00416 U	0.00630 U	0.00606 U	0.00513 U	0.00415 U
sec-Butylbenzene	85	3300	nv	nv	0.00584 U	0.00530 U	0.00711 U	0.00470 U	0.00712 U	0.00683 U	0.00579 U	0.00469 U
Styrene	3.3	6700	nv	nv	0.000464 U	0.000421 U	0.000565 U	0.000374 U	0.000565 U	0.000543 U	0.000460 U	0.000373 U
t-butylbenzene	100	3300	nv	nv	0.00396 U	0.00358 U	0.00480 U	0.00318 U	0.00481 U	0.00463 U	0.00391 U	0.00318 U
Tetrachloroethylene	0.05	710	nv	nv	**0.00411 J**	0.00165 U	0.00221 U	0.00146 U	0.00221 U	0.00212 U	0.00180 U	0.00146 U
Toluene	8.2	5900	nv	nv	0.00264 U	0.00239 U	0.00320 U	0.00212 U	0.00321 U	0.00308 U	0.00262 U	0.00212 U
trans-1,2-Dichloroethylene	0.49	590	nv	nv	0.00211 U	0.00191 U	0.00256 U	0.00169 U	0.00257 U	0.00247 U	0.00209 U	0.00169 U
trans-1,3-Dichloropropene	0.036	36	nv	nv	0.00231 U	0.00209 U	0.00282 U	0.00186 U	0.00281 U	0.00270 U	0.00229 U	0.00186 U
Trichloroethylene	0.034	18	nv	nv	0.00118 U	0.00107 U	0.00144 U	0.000952 U	0.00144 U	0.00139 U	0.00117 U	0.000951 U
Trichlorofluoromethane	130	25000	nv	nv	0.00168 U	0.00152 U	0.00203 U	0.00135 U	0.00205 U	0.00196 U	0.00166 U	0.00135 U
Vinyl Chloride	0.022	3.7	nv	nv	0.00235 U	0.00213 U	0.00287 U	0.00189 U	0.00286 U	0.00275 U	0.00233 U	0.00189 U
Xylenes	120	6000	nv	nv	0.00179 U	0.00162 U	0.00218 U	**0.00167 J**	0.00218 U	0.00209 U	0.00177 U	**0.0276**

	B14 (7-8) SO 06/16/2021	B14 (10-11) SO 06/16/2021	B15(4-5)SO 06/17/2021	FB03SO 6/16/2021	B15(5-6)SO 06/17/2021	B15(11-12)SO 06/17/2021	B16(3-4)SO 06/17/2021	B16(5-6)SO 06/17/2021	B16(14-15)SO 06/17/2021	B18(1-2)SO 06/17/2021	B18(11-12)SO 06/17/2021	B19(1-2)SO 06/17/2021	B19(12-13)SO 06/17/2021	B20(1-2)SO 06/17/2021
Metals (SW6010D)														
Arsenic	**2.6**	**7**	**1.11 J**	**1.13 J**	**44**	**1.84 J**	**32.4**	**8.6**	**1.51 J**	**1.92 J**	**10.9**	**3.92**	**1.18 J**	**14**
Lead	**23.5**	**182**	**7.81**	**9.01**	**7520**	**5.24**	**9620**	**322**	**5.65**	**6.11**	**332**	**55**	**4.81**	**1510**
Volatile Organic Compounds (SW8260C)														
1,1,1,2-Tetrachloroethane	0.00184 U	0.00279 U	0.00172 U	0.00171 U	0.00224 U	--	0.00289 U	0.00232 U	--	0.00173 U	0.00279 U	0.00200 U	0.00531 U	0.00179 U
1,1,1-Trichloroethane	0.00181 U	0.00271 U	0.00167 U	0.00167 U	0.00218 U	--	0.00281 U	0.00226 U	--	0.00169 U	0.00272 U	0.00194 U	0.00518 U	0.00175 U
1,1,2,2-Tetrachloroethane	0.00136 U	0.00205 U	0.00126 U	0.00126 U	0.00164 U	--	0.00211 U	0.00171 U	--	0.00127 U	0.00204 U	0.00146 U	0.00389 U	0.00132 U
1,1,2-Trichloroethane	0.00116 U	0.00175 U	0.00108 U	0.00108 U	0.00140 U	--	0.00182 U	0.00146 U	--	0.00109 U	0.00175 U	0.00125 U	0.00334 U	0.00113 U
1,1,2-Trichlorotrifluoroethane	0.00147 U	0.00221 U	0.00137 U	0.00136 U	0.00178 U	--	0.00230 U	0.00184 U	--	0.00138 U	0.00221 U	0.00159 U	0.00422 U	0.00143 U
1,1-Dichloroethane	0.000958 U	0.00144 U	0.000889 U	0.000890 U	0.00116 U	--	0.00150 U	0.00120 U	--	0.000899 U	0.00144 U	0.00103 U	0.00275 U	0.000928 U
1,1-Dichloroethylene	0.00118 U	0.00179 U	0.00110 U	0.00110 U	0.00143 U	--	0.00184 U	0.00149 U	--	0.00111 U	0.00178 U	0.00128 U	0.00339 U	0.00114 U
1,1-Dichloropropene	0.00158 U	0.00237 U	0.00147 U	0.00146 U	0.00192 U	--	0.00247 U	0.00198 U	--	0.00148 U	0.00237 U	0.00171 U	0.00454 U	0.00153 U
1,2,3-trichlorobenzene	0.0143 U	0.0216 U	0.0133 U	0.0133 U	0.0174 U	--	0.0223 U	0.0180 U	--	0.0134 U	0.0215 U	0.0154 U	0.0411 U	0.0138 U
1,2,3-Trichloropropane	0.00315 U	0.00476 U	0.00294 U	0.00294 U	0.00382 U	--	0.00493 U	0.00397 U	--	0.00297 U	0.00476 U	0.00342 U	0.00908 U	0.00306 U
1,2,3-Trimethylbenzene	0.00307 U	**0.00596 J**	0.00286 U	0.00286 U	**0.00666 J**	--	**0.185**	**0.0318**	--	0.00289 U	0.00464 U	0.00332 U	0.00886 U	0.00299 U
1,2,4-Trichlorobenzene	0.00858 U	0.0129 U	0.00797 U	0.00797 U	0.0104 U	--	0.0135 U	0.0108 U	--	0.00806 U	0.0129 U	0.00927 U	0.0246 U	0.00831 U
1,2,4-Trimethylbenzene	0.00307 U	**0.00735 J**	0.00286 U	0.00286 U	**0.0111 J**	--	**0.241**	**0.059**	--	0.00289 U	0.00464 U	0.00332 U	0.00886 U	0.00299 U
1,2-Dibromo-3-chloropropane	0.00760 U	0.0115 U	0.00706 U	0.00706 U	0.00921 U	--	0.0119 U	0.00957 U	--	0.00714 U	0.0115 U	0.00821 U	0.0219 U	0.00737 U
1,2-Dibromoethane	0.00126 U	0.00190 U	0.00117 U	0.00118 U	0.00153 U	--	0.00197 U	0.00159 U	--	0.00118 U	0.00190 U	0.00137 U	0.00363 U	0.00122 U
1,2-Dichlorobenzene	0.000828 U	0.00125 U	0.000770 U	0.000771 U	0.00100 U	--	0.00130 U	0.00104 U	--	0.000778 U	0.00125 U	0.000895 U	0.00239 U	0.000803 U
1,2-Dichloroethane	0.00127 U	0.00190 U	0.00117 U	0.00118 U	0.00153 U	--	0.00197 U	0.00159 U	--	0.00118 U	0.00190 U	0.00137 U	0.00363 U	0.00123 U
1,2-Dichloropropane	0.00277 U	0.00417 U	0.00257 U	0.00258 U	0.00335 U	--	0.00432 U	0.00348 U	--	0.00260 U	0.00418 U	0.00300 U	0.00795 U	0.00268 U
1,3,5-Trimethylbenzene	0.00390 U	0.00588 U	0.00362 U	0.00363 U	0.00472 U	--	**0.0452**	**0.011 J**	--	0.00366 U	0.00588 U	0.00421 U	0.0112 U	0.00378 U
1,3-Dichlorobenzene	0.00117 U	0.00177 U	0.00109 U	0.00109 U	0.00142 U	--	0.00183 U	0.00147 U	--	0.00110 U	0.00176 U	0.00126 U	0.00337 U	0.00113 U
1,3-Dichloropropane	0.000976 U	0.00147 U	0.000908 U	0.000909 U	0.00118 U	--	0.00152 U	0.00123 U	--	0.000918 U	0.00147 U	0.00106 U	0.00280 U	0.000947 U
1,4-Dichlorobenzene	0.00136 U	0.00206 U	0.00126 U	0.00127 U	0.00165 U	--	0.00214 U	0.00171 U	--	0.00128 U	0.00206 U	0.00147 U	0.00392 U	0.00132 U
2,2-Dichloropropane	0.00269 U	0.00406 U	0.00249 U	0.00250 U	0.00326 U	--	0.00420 U	0.00339 U	--	0.00252 U	0.00405 U	0.00290 U	0.00773 U	0.00260 U
2-Chlorotoluene	0.00169 U	0.00255 U	0.00157 U	0.00157 U	0.00204 U	--	0.00263 U	0.00213 U	--	0.00159 U	0.00254 U	0.00183 U	0.00485 U	0.00164 U
4-Chlorotoluene	0.000878 U	0.00132 U	0.000815 U	0.000816 U	0.00106 U	--	0.00137 U	0.00110 U	--	0.000824 U	0.00132 U	0.000948 U	0.00253 U	0.000850 U
4-Isopropyltoluene	0.00497 U	0.00750 U	0.00461 U	0.00462 U	0.00603 U	--	**0.099**	**0.0126**	--	0.00467 U	0.00750 U	0.00537 U	0.0143 U	0.00482 U
Acetone	0.0712 U	0.107 U	0.0661 U	0.0662 U	0.0861 U	--	**0.126 J**	0.0895 U	--	0.0669 U	0.107 U	0.0769 U	0.205 U	0.0690 U
Benzene	0.000911 U	0.00137 U	0.000846 U	0.000846 U	0.00110 U	--	**0.0103**	**0.00514**	--	0.000855 U	0.00137 U	0.000984 U	0.00261 U	**0.00746**
Bromobenzene	0.00175 U	0.00265 U	0.00163 U	0.00163 U	0.00212 U	--	0.00274 U	0.00220 U	--	0.00165 U	0.00265 U	0.00190 U	0.00504 U	0.00170 U
Bromodichloromethane	0.00141 U	0.00213 U	0.00131 U	0.00131 U	0.00171 U	--	0.00221 U	0.00178 U	--	0.00133 U	0.00214 U	0.00153 U	0.00406 U	0.00137 U
Bromoform	0.00228 U	0.00344 U	0.00212 U	0.00212 U	0.00276 U	--	0.00356 U	0.00287 U	--	0.00214 U	0.00343 U	0.00247 U	0.00656 U	0.00221 U
Bromomethane	0.00385 U	0.00580 U	0.00356 U	0.00357 U	0.00465 U	--	0.00600 U	0.00483 U	--	0.00361 U	0.00579 U	0.00415 U	0.0110 U	0.00372 U
Carbon tetrachloride	0.00175 U	0.00265 U	0.00163 U	0.00163 U	0.00212 U	--	0.00274 U	0.00220 U	--	0.00164 U	0.00265 U	0.00190 U	0.00504 U	0.00169 U
Chlorobenzene	0.000409 U	0.000617 U	0.000380 U	0.000381 U	0.000496 U	--	0.000640 U	0.000516 U	--	0.000384 U	0.000617 U	0.000442 U	0.00118 U	0.000396 U
Chloroethane	0.00331 U	0.00500 U	0.00307 U	0.00308 U	0.00401 U	--	0.00518 U	0.00418 U	--	0.00311 U	0.00500 U	0.00358 U	0.00952 U	0.00321 U
Chloroform	0.00200 U	0.00302 U	0.00187 U	0.00187 U	0.00243 U	--	0.00314 U	0.00253 U	--	0.00189 U	0.00303 U	0.00216 U	0.00577 U	0.00194 U
Chloromethane	0.00848 U	0.0128 U	0.00788 U	0.00788 U	0.0103 U	--	0.0132 U	0.0107 U	--	0.00796 U	0.0128 U	0.00916 U	0.0244 U	0.00822 U
cis-1,2-Dichloroethylene	0.00143 U	0.00216 U	0.00133 U	0.00133 U	0.00174 U	--	0.00223 U	0.00180 U	--	0.00134 U	0.00215 U	0.00154 U	0.00411 U	0.00138 U
cis-1,3-Dichloropropene	0.00148 U	0.00222 U	0.00137 U	0.00138 U	0.00179 U	--	0.00230 U	0.00186 U	--	0.00138 U	0.00223 U	0.00159 U	0.00425 U	0.00143 U
Dibromochloromethane	0.00119 U	0.00180 U	0.00111 U	0.00111 U	0.00144 U	--	0.00186 U	0.00150 U	--	0.00112 U	0.00180 U	0.00129 U	0.00343 U	0.00115 U
Dibromomethane	0.00147 U	0.00221 U	0.00136 U	0.00136 U	0.00178 U	--	0.00229 U	0.00184 U	--	0.00137 U	0.00221 U	0.00158 U	0.00421 U	0.00142 U
Dichlorodifluoromethane	0.00314 U	0.00472 U	0.00292 U	0.00292 U	0.00380 U	--	0.00490 U	0.00395 U	--	0.00295 U	0.00473 U	0.00339 U	0.00902 U	0.00304 U
Diisopropyl ether	0.000799 U	0.00120 U	0.000742 U	0.000744 U	0.000968 U	--	0.00125 U	0.00101 U	--	0.000750 U	0.00120 U	0.000864 U	0.00230 U	0.000774 U
Ethylbenzene	0.00144 U	0.00216 U	0.00133 U	0.00133 U	0.00174 U	--	**0.0271**	**0.0106**	--	0.00135 U	0.00217 U	0.00156 U	0.00413 U	**0.00907**
Isopropylbenzene	0.000828 U	**0.00125 J**	0.000770 U	0.000771 U	0.00100 U	--	**0.00731 J**	**0.00208 J**	--	0.000778 U	0.00125 U	0.000895 U	0.00239 U	0.000803 U
MEK	0.124 U	0.187 U	0.199 U	0.115 U	0.150 U	--	0.304 U	0.245 U	--	0.116 U	0.186 U	0.133 U	0.356 U	0.120 U
Methylene chloride	0.0129 U	0.0195 U	0.0121 U	0.0120 U	0.0157 U	--	0.0202 U	0.0164 U	--	0.0122 U	0.0195 U	0.0140 U	0.0372 U	0.0125 U
MIBK	0.00445 U	0.00670 U	0.00413 U	0.00413 U	0.00539 U	--	**0.0325 J**	0.00559 U	--	0.00418 U	0.00670 U	0.00480 U	0.0128 U	0.00431 U
MTBE	0.000683 U	0.00103 U	0.000633 U	0.000634 U	0.000826 U	--	0.00107 U	0.000858 U	--	0.000641 U	0.00103 U	0.000737 U	0.00196 U	0.000661 U
Naphthalene	0.00951 U	**0.0232 J**	0.00884 U	0.00884 U	**0.0318**	--	**0.408**	**0.133**	--	0.00893 U	0.0143 U	0.0103 U	0.0274 U	**0.0102 J**
n-Butylbenzene	0.0102 U	0.0154 U	0.00951 U	0.00952 U	0.0124 U	--	**0.119**	**0.0274 J**	--	0.00961 U	0.0154 U	0.0111 U	0.0294 U	0.00992 U
n-Propylbenzene	0.00186 U	0.00279 U	0.00172 U	0.00173 U	**0.00249 J**	--	**0.0375**	**0.015**	--	0.00174 U	0.00279 U	0.00200 U	0.00533 U	0.00179 U
p-Isopropyltoluene	0.00497 U	0.00750 U	0.00461 U	0.00462 U	0.00603 U	--	**0.099**	**0.0126**	--	0.00467 U	0.00750 U	0.00537 U	0.0143 U	0.00482 U
sec-Butylbenzene	0.00561 U	0.00846 U	0.00522 U	0.00522 U	0.00680 U	--	**0.0608**	**0.00907 J**	--	0.00527 U	0.00847 U	0.00606 U	0.0161 U	0.00544 U
Styrene	0.000446 U	0.000672 U	0.000415 U	0.000415 U	0.000540 U	--	0.000697 U	**0.000797 J**	--	0.000420 U	0.000673 U	0.000482 U	0.00128 U	0.000433 U
t-butylbenzene	0.00381 U	0.00573 U	0.00353 U	0.00354 U	0.00461 U	--	0.00594 U	0.00479 U	--	0.00357 U	0.00573 U	0.00411 U	0.0109 U	0.00368 U
Tetrachloroethylene	0.00175 U	0.00263 U	0.00162 U	0.00163 U	**0.0137**	--	0.00273 U	0.00220 U	--	0.00164 U	0.00263 U	0.00188 U	0.00503 U	0.00169 U
Toluene	0.00254 U	0.0147 U	0.00236 U	0.00236 U	0.0118 U	--	**0.0376**	**0.0175**	--	0.00238 U	0.00381 U	0.00274 U	0.00729 U	0.00246 U
trans-1,2-Dichloroethylene	0.00203 U	0.00305 U	0.00188 U	0.00189 U	0.00246 U	--	0.00316 U	0.00256 U	--	0.00191 U	0.00305 U	0.00219 U	0.00583 U	0.00197 U
trans-1,3-Dichloropropene	0.00222 U	0.00334 U	0.00206 U	0.00206 U	0.00269 U	--	0.00347 U	0.00279 U	--	0.00209 U	0.00336 U	0.00240 U	0.00638 U	0.00215 U
Trichloroethylene	0.00114 U	0.00172 U	0.00106 U	0.00106 U	0.00138 U	--	0.00178 U	0.00143 U	--	0.00107 U	0.00172 U	0.00123 U	0.00327 U	0.00110 U
Trichlorofluoromethane	0.00161 U	0.00243 U	0.00149 U	0.00150 U	0.00196 U	--	0.00251 U	0.00202 U	--	0.00152 U	0.00243 U	0.00174 U	0.00464 U	0.00156 U
Vinyl Chloride	0.00226 U	0.00341 U	0.00210 U	0.00211 U	0.00274 U	--	0.00353 U	0.00284 U	--	0.00212 U	0.00341 U	0.00245 U	0.00650 U	0.00220 U
Xylenes	0.00171 U	**0.00419 J**	0.00159 U	0.00159 U	**0.00608 J**	--	**0.11**	**0.0392**	--	0.00161 U	0.00259 U	0.00185 U	**0.00533 J**	**0.00392 J**

Table 1
Summary of Soil Analytical Results
203 Chelsea Street, El Paso, Texas
City of El Paso

	$^{GW}Soil_{Ing}$ PCL[A]	$^{Tot}Soil_{Comb}$ PCL[B]	TSSBC[C]	TPH PCL[D]	B11 (0-1) SO 06/16/2021	FB02 SO 6/16/2021	B11 (5-6) SO 06/16/2021	B12 (0-1) SO 06/16/2021	B12 (7-8) SO 06/16/2021	B13 (7-8) SO 06/16/2021	B13 (11-12) SO 06/16/2021	B14 (0-1) SO 06/16/2021	B14 (7-8) SO 06/16/2021	B14 (10-11) SO 06/16/2021
Polycyclic Aromatic Hydrocarbons (SW8270D SIM)														
Acenaphthene	240	3000	nv	nv	0.00258 U	0.00230 U	0.00285 U	0.00211 U	0.00287 U	0.00282 U	0.00215 U	0.00211 U	0.00248 U	0.00293 U
Acenaphthylene	410	3800	nv	nv	0.00267 U	**0.00338 J**	0.00295 U	0.00218 U	0.00296 U	0.00291 U	0.00223 U	0.00218 U	**0.00263 J**	0.00303 U
Anthracene	6900	18000	nv	nv	0.00284 U	**0.0031 J**	0.00314 U	0.00232 U	0.00315 U	**0.00472 J**	0.00237 U	0.00232 U	**0.00736**	**0.0053 J**
Benzo(a)anthracene	130	41	nv	nv	**0.00305 J**	**0.00853**	0.00236 U	**0.00571 J**	**0.00261 J**	**0.0144**	0.00178 U	0.00174 U	**0.0322**	**0.0179**
Benzo(a)pyrene	7.6	4.1	nv	nv	**0.00243 J**	**0.0118**	0.00244 U	**0.00608**	**0.00261 J**	**0.0139**	0.00184 U	**0.00211 J**	**0.0495**	**0.02**
Benzo(b)fluoranthene	440	42	nv	nv	**0.0033 J**	**0.0152**	0.00209 U	**0.00955**	**0.00472 J**	**0.0171**	0.00158 U	**0.0045 J**	**0.0556**	**0.0251**
Benzo(g,h,i)perylene	46000	1800	nv	nv	**0.00627 J**	**0.0238**	0.00241 U	**0.0067**	**0.00466 J**	**0.0134**	0.00182 U	**0.00428 J**	**0.0566**	**0.0226**
Benzo(k)fluoranthene	4500	420	nv	nv	0.00266 U	**0.00425 J**	0.00293 U	**0.00401 J**	0.00295 U	**0.00635 J**	0.00222 U	0.00217 U	**0.0105**	**0.00806 J**
Chrysene	11000	4100	nv	nv	**0.00366 J**	**0.00848**	0.00316 U	**0.01**	**0.00344 J**	**0.0144**	0.00239 U	**0.00286 J**	**0.0441**	**0.0241**
Dibenzo(a,h)anthracene	15	4	nv	nv	0.00212 U	0.00189 U	0.00235 U	0.00173 U	0.00236 U	0.00232 U	0.00177 U	0.00173 U	**0.0255**	**0.00746 J**
Dibenzofuran	33	270	nv	nv	0.00263 U	0.00234 U	0.00291 U	0.00215 U	0.00292 U	0.00287 U	0.00219 U	0.00215 U	**0.00695 J**	**0.00305 J**
Fluoranthene	1900	2300	nv	nv	**0.00766**	**0.0128**	0.00310 U	**0.0156**	**0.00738 J**	**0.0279**	0.00234 U	**0.00411 J**	**0.073**	**0.0363**
Fluorene	300	2300	nv	nv	0.00253 U	0.00226 U	0.00280 U	0.00207 U	0.00281 U	0.00277 U	0.00211 U	0.00207 U	**0.0127**	**0.00454 J**
Indeno(1,2,3-cd)pyrene	1300	42	nv	nv	**0.00435 J**	**0.0145**	0.00247 U	**0.00589 J**	**0.00287 J**	**0.0122**	0.00187 U	**0.00312 J**	**0.0257**	**0.0158**
Naphthalene	31	220	nv	nv	0.00504 U	0.00449 UJ	0.00557 U	0.00411 U	0.00560 U	0.00550 UJ	0.00420 UJ	0.00795 U	**0.0283 J-**	**0.00883 J-**
Phenanthrene	420	1700	nv	nv	0.00285 U	**0.00636 J**	0.00315 U	**0.0125**	**0.00902**	**0.0181**	0.00238 U	0.00233 U	**0.0691**	**0.0258**
Pyrene	1100	1700	nv	nv	**0.00425 J**	**0.0112**	0.00273 U	**0.0185**	**0.00612 J**	**0.022**	0.00206 U	**0.00462 J**	**0.0519**	**0.0294**
Total Petroleum Hydrocarbons (TX1005)														
C6-C12	65	1600	nv	nv	22.2 U	27.6 U	20.9 U	25.8 U	20.4 U	22.5 U	27.5 U	25.2 U	26.7 U	37.7 U
C12-C28	200	2300	nv	nv	22.2 U	27.6 U	20.9 U	25.8 U	20.4 U	22.5 U	27.5 U	25.2 U	**69.8 J**	**143**
C28-C35	200	2300	nv	nv	**23 J**	27.6 U	20.9 U	25.8 U	**27.7 J**	22.5 U	27.5 U	25.2 U	**360**	**432**
Total C6-C35	nv	nv	nv	12,100	**23 J**	27.6 U	20.9 U	25.8 U	**27.7 J**	22.5 U	27.5 U	25.2 U	**430**	**575**
Total Petroleum Hydrocarbons (TX1006)														
C6 Aliphatics	170	4800	--	--	--	--	--	--	--	--	--	--	--	--
C6-C8 Aliphatics	420	4800	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aliphatics	3600	4000	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aliphatics	25000	3600	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aliphatics	490000	4300	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aliphatics	1000000	130000	--	--	--	--	--	--	--	--	--	--	--	--
C21-C35 Alphatics	1000000	130000	--	--	--	--	--	--	--	--	--	--	--	--
C7-C8 Aromatics(Toluene only)	20	6400	--	--	--	--	--	--	--	--	--	--	--	--
C8-C10 Aromatics	65	1600	--	--	--	--	--	--	--	--	--	--	--	--
C10-C12 Aromatics	100	1900	--	--	--	--	--	--	--	--	--	--	--	--
C12-C16 Aromatics	200	2300	--	--	--	--	--	--	--	--	--	--	--	--
C16-C21 Aromatics	470	2000	--	--	--	--	--	--	--	--	--	--	--	--
C21-C35 Aromatics	3700	2000	--	--	--	--	--	--	--	--	--	--	--	--

	B15(4-5)SO 06/17/2021	FB03SO 6/16/2021	B15(5-6)SO 06/17/2021	B15(11-12)SO 06/17/2021	B16(3-4)SO 06/17/2021	B16(5-6)SO 06/17/2021	B16(14-15)SO 06/17/2021	B18(1-2)SO 06/17/2021	B18(11-12)SO 06/17/2021	B19(1-2)SO 06/17/2021	B19(12-13)SO 06/17/2021	B20(1-2)SO 06/17/2021
Polycyclic Aromatic Hydrocarbons (SW8270D SIM)												
Acenaphthene	0.00227 U	0.00221 U	**0.0139**	--	**0.43**	**0.0173**	--	0.00224 U	0.00315 U	0.00232 U	0.00253 U	0.00222 U
Acenaphthylene	0.00234 U	0.00228 U	**0.00625 J**	--	**0.0465**	**0.00311 J**	--	0.00232 U	0.00326 U	**0.00418 J**	0.00261 U	**0.00574 J**
Anthracene	0.00250 U	0.00243 U	**0.0535**	--	**0.464**	**0.0203**	--	0.00247 U	0.00347 U	**0.00408 J**	0.00278 U	**0.01**
Benzo(a)anthracene	0.00188 U	0.00183 U	**0.132**	--	**0.273**	**0.0189**	--	0.00186 U	**0.0102**	**0.0104**	0.00209 U	**0.0363**
Benzo(a)pyrene	0.00194 U	0.00189 U	**0.109**	--	**0.0886**	**0.0126**	--	0.00192 U	**0.0114**	**0.0192**	0.00216 U	**0.0301**
Benzo(b)fluoranthene	0.00166 U	0.00162 U	**0.138**	--	**0.12**	**0.0172**	--	0.00164 U	**0.0155**	**0.024**	0.00185 U	**0.0421**
Benzo(g,h,i)perylene	0.00192 U	0.00187 U	**0.0875**	--	**0.063**	**0.0101**	--	0.00190 U	**0.013**	**0.0574**	0.00214 U	**0.027**
Benzo(k)fluoranthene	0.00233 U	0.00227 U	**0.0536**	--	**0.0325**	**0.00674 J**	--	0.00231 U	**0.00468 J**	**0.00605 J**	0.00260 U	**0.0146**
Chrysene	0.00252 U	0.00245 U	**0.132**	--	**0.435**	**0.0305**	--	0.00249 U	**0.00939**	**0.0118**	0.00281 U	**0.0412**
Dibenzo(a,h)anthracene	0.00187 U	0.00182 U	**0.0227**	--	0.00194 U	**0.00228 J**	--	0.00184 U	**0.00291 J**	**0.0154**	0.00208 U	**0.00707**
Dibenzofuran	0.00231 U	0.00225 U	**0.0136**	--	**0.111**	**0.00538 J**	--	0.00228 U	0.00321 U	0.00236 U	0.00258 U	0.00226 U
Fluoranthene	0.00246 U	0.00240 U	**0.219**	--	**1.43**	**0.0563**	--	0.00243 U	**0.0222**	**0.014**	0.00275 U	**0.0558**
Fluorene	0.00222 U	0.00217 U	**0.0149**	--	**0.429**	**0.0167**	--	0.00220 U	0.00309 U	0.00227 U	0.00248 U	**0.00245 J**
Indeno(1,2,3-cd)pyrene	0.00196 U	0.00191 U	**0.0958**	--	**0.0446**	**0.00984**	--	0.00194 U	**0.00991**	**0.0199**	0.00219 U	**0.0255**
Naphthalene	0.00443 UJ	0.00431 UJ	**0.0409 J-**	--	**0.691 J-**	**0.0362 J-**	--	0.00437 UJ	0.00616 UJ	0.00453 UJ	0.00493 UJ	0.00433 UJ
Phenanthrene	0.00251 U	0.00244 U	**0.173**	--	**1.98**	**0.0663**	--	0.00248 U	**0.012**	**0.00716**	0.00279 U	**0.0374**
Pyrene	0.00217 U	0.00211 U	**0.172**	--	**1.03**	**0.0412**	--	0.00214 U	**0.0181**	**0.0144**	0.00242 U	**0.0386**
Total Petroleum Hydrocarbons (TX1005)												
C6-C12	26.3 U	25.9 U	26.9 U	--	317 U	36.0 U	29.4 U	29.5 U	34.9 U	32.3 U	32.9 U	29.6 U
C12-C28	26.3 U	25.9 U	26.9 U	--	**6870**	**719**	29.4 U	29.5 U	34.9 U	**33.2 J**	32.9 U	29.6 U
C28-C35	26.3 U	25.9 U	**46.3 J**	--	**7940**	**796**	29.4 U	29.5 U	34.9 U	**236**	32.9 U	**33.9 J**
Total C6-C35	26.3 U	25.9 U	**46.3 J**	--	**14800**	**1510**	29.4 U	29.5 U	34.9 U	**270**	32.9 U	**33.9 J**
Total Petroleum Hydrocarbons (TX1006)												
C6 Aliphatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C6-C8 Aliphatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C8-C10 Aliphatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C10-C12 Aliphatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C12-C16 Aliphatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C16-C21 Aliphatics	--	--	--	--	**242**	--	--	--	--	--	--	--
C21-C35 Alphatics	--	--	--	--	**5990**	--	--	--	--	--	--	--
C7-C8 Aromatics(Toluene only)	--	--	--	--	106 U	--	--	--	--	--	--	--
C8-C10 Aromatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C10-C12 Aromatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C12-C16 Aromatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C16-C21 Aromatics	--	--	--	--	106 U	--	--	--	--	--	--	--
C21-C35 Aromatics	--	--	--	--	**1240**	--	--	--	--	--	--	--

Notes:
All results are reported in milligrams per kilogram (mg/kg)

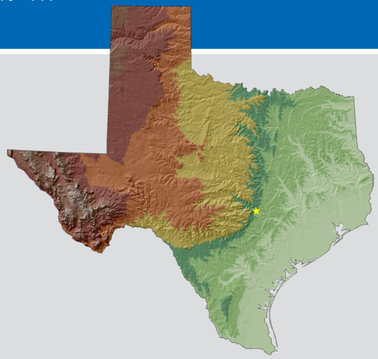
PCL Soil Protective Concentration Levels (January 2021)
A Table 1 - Tier 1 - Residential - 0.5 acre area - GWSoilIng
B Table 1 - Tier 1 - Residential - 0.5 acre area - TotSoilComb
C Texas-Specific Soil Background Concentrations
D Site-specific Tier 1 TPH PCL calculated from TCEQ Method 1006 data
6.5 Concentration exceeds the indicated standard.
nv no screening level value available
-- Parameter not analyzed / not available.

Data Qualifier Codes:
J Result is qualified as estimated, "-" indicates a potential negative bias.
U Undetected at SDL (Sample Detection Limit).
UJ Result is undetected and the reported value is qualified as estimated

ATTACHMENTS

ATTACHMENT A

NOAA CLIMATE SUMMARY REPORT FOR THE STATE OF TEXAS



TEXAS

Key Messages

Mean annual temperature has increased by approximately 1˚F since the first half of the 20th century. Under a higher emissions pathway, historically unprecedented warming is projected by the end of the 21st century, with associated increases in extreme heat events.

Although projected changes in annual precipitation are uncertain, increases in extreme precipitation events are projected. Higher temperatures will increase soil moisture loss during dry spells, increasing the intensity of naturally occurring droughts.

The number of landfalling hurricanes in Texas is highly variable from year to year. As the climate warms, increases in hurricane rainfall rates, storm surge height due to sea level rise, and the intensity of the strongest hurricanes are projected.

The Texas climate is characterized by hot summers and cool to mild winters. Three geographical features largely influence the state's varied climate. The Rocky Mountains block intrusions of moist Pacific air from the west and tend to channel arctic air masses southward during the winter. The relatively flat central North American continent allows easy north and south movement of air masses. The Gulf of Mexico is the primary source of moisture, most readily available to the eastern part of the state. As a result of these factors, the state exhibits large east-west variations in precipitation and is subject to frequent occurrences of a variety of extreme events, including hurricanes, tornadoes, droughts, heat waves, cold waves, and intense precipitation. Increased demand for limited water supplies due to rapid population growth, especially in urban areas, may increase Texas' vulnerability to naturally occurring droughts.

Mean annual temperatures has increased approximately 1˚F since the first half of the 20th century (Figure 1). While there is no overall trend in extremely hot days (maximum temperature above 100°F) (Figure 2), the number of very warm nights (minimum temperature below 75°F) was a record high during the latest 2010–2014 period (Figure 3). This was due to very high values during the drought years of 2011 and 2012 when very warm nights were very frequent both along the coast (where they are a common feature of the climate due to warm waters) and in the interior (where they are less common). The urban heat island effect increased these occurrences in city centers. In 2011, Texas recorded its warmest summer on record (since 1895) and broke the record for the statewide-average highest number of days with temperatures of 100°F or more. The Dallas-Fort Worth area endured 40 consecutive days in excess of 100˚F, which was the second longest streak on record (1898–2011). The record dry conditions contributed to the higher temperatures.

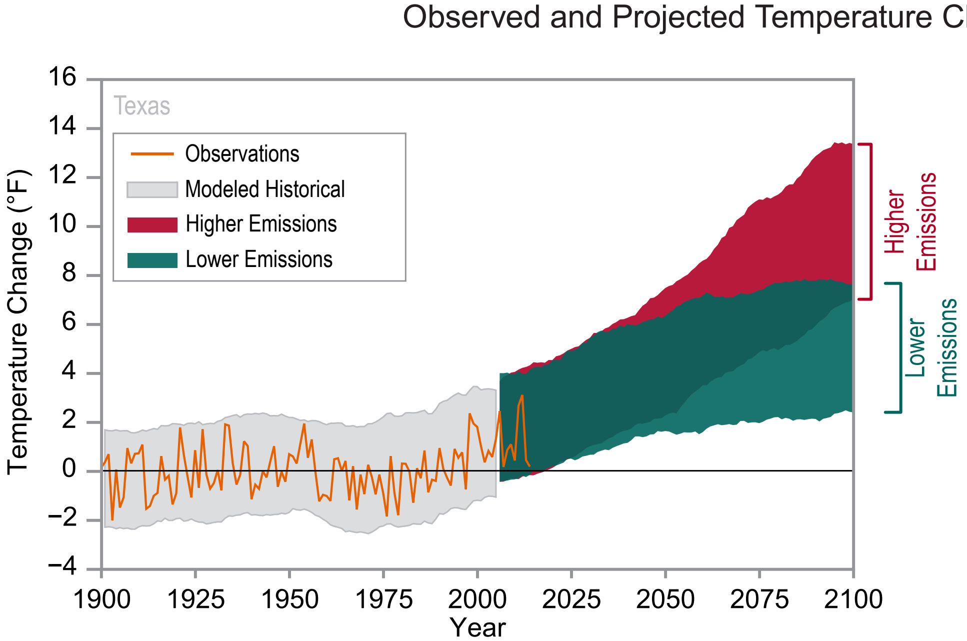


Figure 1: Observed and projected changes (compared to the 1901–1960 average) in near-surface air temperature for Texas. Observed data are for 1900–2014. Projected changes for 2006–2100 are from global climate models for two possible futures: one in which greenhouse gas emissions continue to increase (higher emissions) and another in which greenhouse gas emissions increase at a slower rate (lower emissions)[1]. Temperatures in Texas (orange line) have risen about 1°F since the beginning of the 20th century. Shading indicates the range of annual temperatures from the set of models. Observed temperatures are generally within the envelope of model simulations of the historical period (gray shading). Historically unprecedented warming is projected during the 21st century. Less warming is expected under a lower emissions future (the coldest years being about as warm as the hottest year in the historical record; green shading) and more warming under a higher emissions future (the hottest years being about 11ºF warmer than the hottest year in the historical record; red shading). Source: CICS-NC and NOAA NCEI.

[1]Technical details on models and projections are provided in an appendix, available online at: https://statesummaries.ncics.org/tx.

Daily minimum temperatures in January typically range from about 20°F in the northern Panhandle to about 50°F near the mouth of the Rio Grande River. The annual number of days of extreme cold (maximum temperatures below 32°F) was well above average in the 1970s and 1980s but since then has fluctuated near the long-term average (Figure 4a).

Average annual precipitation varies from less than 10 inches in the far west to greater than 50 inches in the far east. The driest multi-year periods were in the 1890s, 1950s, and 2000s, and the wettest in the 1940s and mid-1990s (Figure 4b). **The driest 5-year period was 1952–1956 and the wettest was 1990–1994**. In the 1990s and early 2000s, the number of extreme precipitation events was well-above average, but the state has experienced below average rainfall and extreme precipitation events over the last five years (Figure 4c). However, this extended dry period was interrupted in May 2015 with a statewide monthly average rainfall total of 9.05 inches, breaking the previous all-time monthly record by well over two inches (Figure 5a). During one specific late-May episode, the Blanco River at Wimberly (south-central Texas) experienced historic flash and river flooding following a 1- to 2-day rainfall of 4–12 inches (Figure 5b), rising 35 feet in approximately 3 hours.

Texas is consistently ranked in the top 10 states affected by extreme events. In 2011, Texas was hit by eight of the Nation's billion dollar disasters. The three most impactful events were drought, extreme heat, and wildfires. The warmest and the driest summer in the historical record (Figure 6) helped fuel the worst wildfire season since statewide records began (approximately 1990), with nearly 4 million acres burned and $750 million in damages. Since the creation of the United States Drought Monitor Map in 2000, Texas has been completely drought-free for only approximately 8% of the time (2000–2014), and at least half of the state has been under drought conditions for approximately 42% of the time over the same period. Paleoclimatic records indicate that droughts of the severity of 2011 have occurred occasionally in the pat 1000 years (Figure 6). Higher temperatures in combination with drought conditions are likely to increase the severity, frequency, and extent of wildfires in the future posing significant harm to property, human health, and the livelihood of residents.

Over the period of 1900 to 2010, the Texas coastline endured more than 85 tropical storms and hurricanes (about 3 storms every 4 years), with approximately half of them hurricanes (Figure 4d). Since 2000, Texas has experienced 12 named storms, including 5 destructive hurricanes, with Hurricane Rita (Category 3) and Hurricane Ike (Category 2) causing the most significant damage. While Hurricane Rita holds the designation as causing the largest U.S. evacuation in history, Hurricane Ike is the costliest hurricane

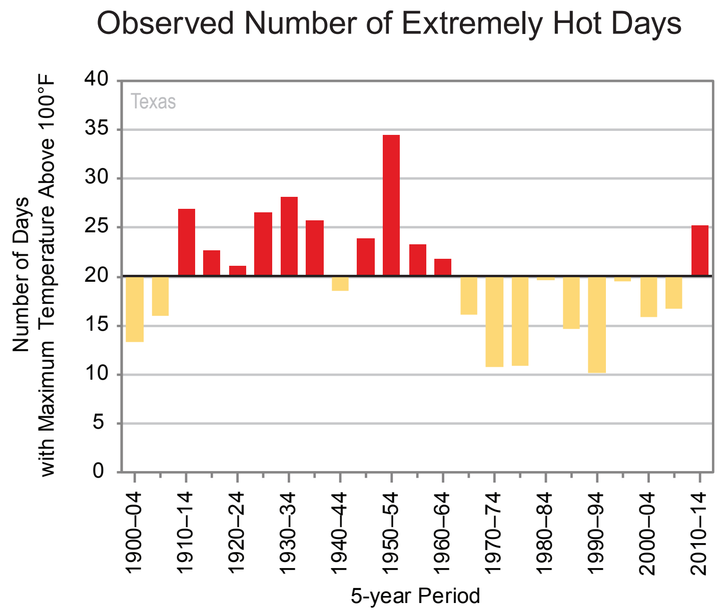


Figure 2: The observed number of extremely hot days (annual number of days with maximum temperature above 100°F) for 1900–2014, averaged over 5-year periods; these values are averages from twenty-six long-term reporting stations. The number of extremely hot days in Texas was mostly above average between 1910 and 1960, below average between the 1960s and early 2000s, and above average again in the last 5 years. The dark horizontal line is the long-term average (1900–2014) of about 20 days per year. Source: CICS-NC and NOAA NCEI.

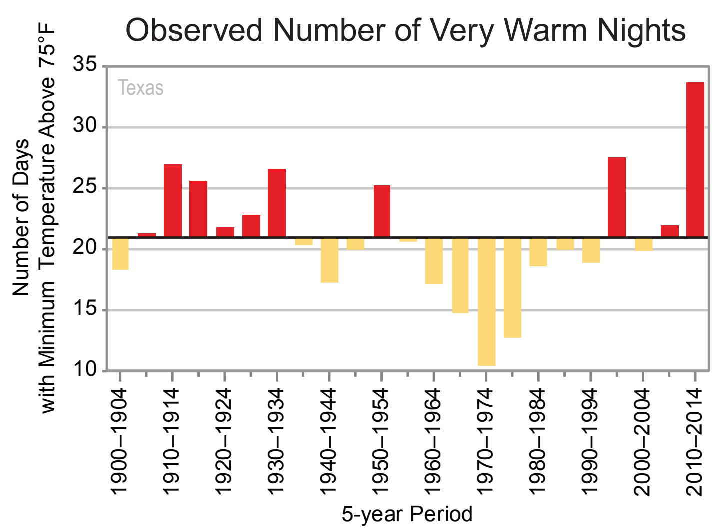


Figure 3: The observed number of very warm nights (number of days with minimum temperature above 75°F) for 1900–2014, averaged over 5-year periods; these values are averages from twenty-six long-term reporting stations. The 1970s saw a record low number of very warm nights. That number increased in the early 21st century, with the record highest number occurring in 2010–2014. The dark horizontal line is the long-term average (1900–2014) of about 21 days per year. Source: CICS-NC and NOAA NCEI.

in Texas history, with an estimated $19.3 billion in damages. Along the southern coast, surges of between 11 and 13 feet typically have return periods of 25 years (Figure 7).

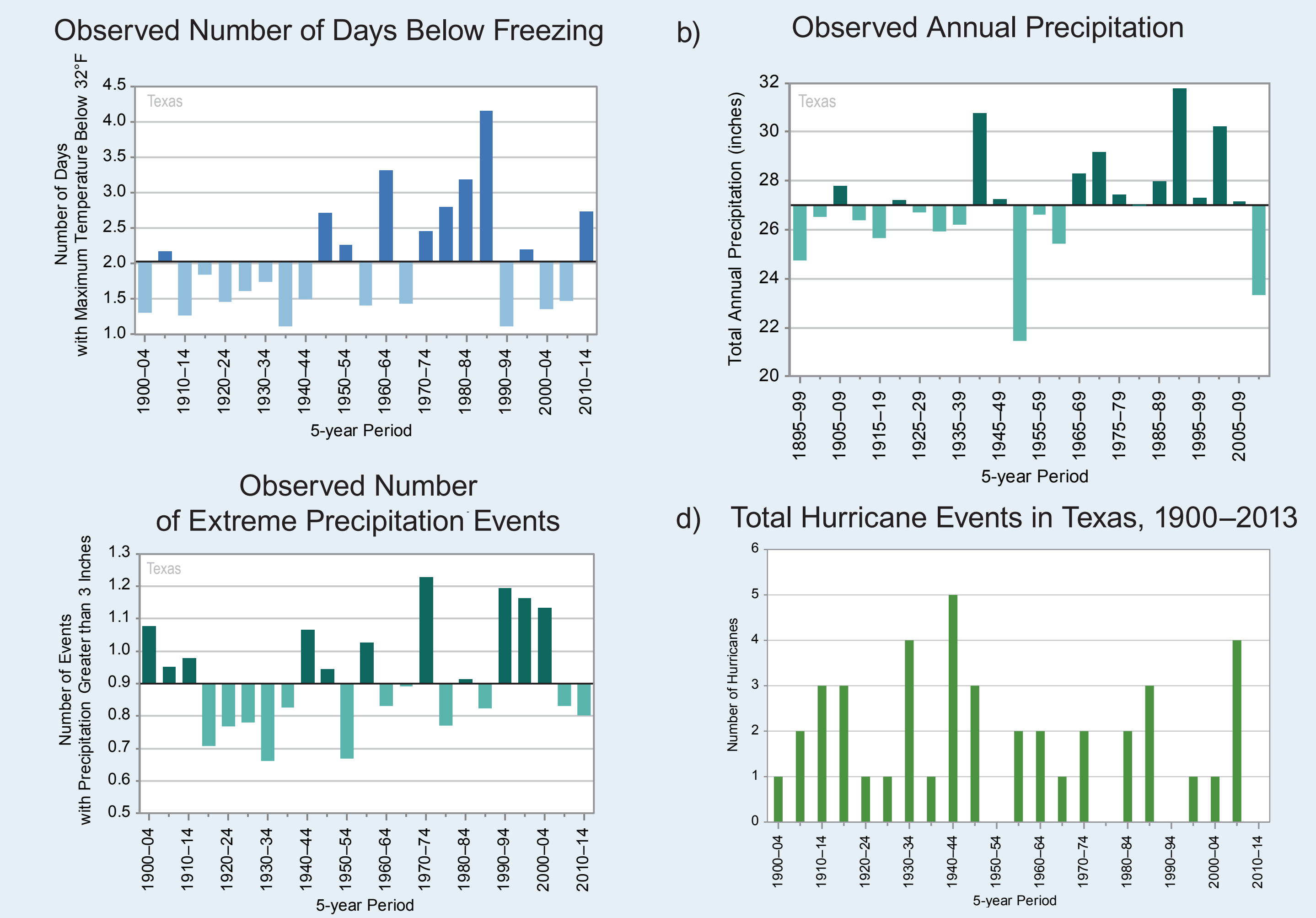


Figure 4: Observed (a) number of days below freezing (maximum temperature below 32°F), (b) annual precipitation, (c) extreme precipitation events (days with more than 3 inches), and (d) annual number of hurricanes affecting Texas, averaged over 5-year periods. The values in Figures 4a and 4c are averages from twenty-six long-term reporting stations for temperature and thirty-six long-term reporting stations for precipitation. The number of days below freezing was above average in the 1970s and 1980s; since then it has fluctuated near the long-term average. Annual precipitation varies widely between years and has been generally below average during the most recent 5-year period of 2010–2014. The number of extreme precipitation events was well above average during the 1990s and early 2000s and slightly below average since then. There is no long-term trend in the number of hurricanes. Source: CICS-NC and NOAA NCEI.

Over the past 30 years (1985–2014), Texas has averaged 140 tornadoes and 4 tornado fatalities per year. Events can occur all year, though activity typically peaks between April and June.

Under a higher emissions pathway, historically unprecedented warming is projected by the end of the 21st century (Figure 1). Even under a pathway of lower greenhouse gas emissions, average annual temperatures are projected to most likely exceed historical record levels by the middle of the 21st century. However, there is a large range of temperature increases under both pathways, and under the lower pathway, a few projections are only slightly warmer than historical records. Increases in the number of extremely hot days and decreases in the number of extremely cold days are projected to accompany the overall warming. By 2055, an estimated increase of 20–30 days over 95°F is projected under one pathway, with the greatest increase in southwestern Texas.

Future changes in annual average precipitation are uncertain (Figure 8), but an increase in intense rainfall is likely. Furthermore, even if average precipitation does not change, **higher temperatures will increase the rate of soil moisture loss and thus naturally occurring droughts will likely be more intense**. Longer dry spells are also projected.

Increased drought severity combined with increased human demand for surface water will cause changes in streamflow, with extended reductions of freshwater inflow to Texas bays and estuaries. Such reductions in streamflow will cause temporary or permanent changes to bay salinity and oxygen content, with potentially major impacts to bay and estuary ecosystems, such as negatively affecting organism growth, reproduction, and survival.

Future changes in the frequency and severity of tornadoes, hail, and severe thunderstorms are uncertain. However, **hurricane intensity and rainfall are projected to increase for Texas as the climate warms**.

Since 1880, global sea level has risen by about 8 inches.Along the Texas coastline, sea level rise has been measured between 5 and 17 inches per century, causing the loss of an average of 180 acres of coastline per year. **Sea level is projected to rise another 1 to 4 feet by 2100 as a result of both past and future emissions from human activities** (Figure 9). Sea level rise has caused an increase in tidal floods associated with nuisance-level impacts. Nuisance floods are events in which water levels exceed the local threshold (set by NOAA's National Weather Service) for minor impacts. These events can damage infrastructure, cause road closures, and overwhelm storm drains. As sea level has risen along the Texas coastline, the number of tidal flood days has also increased, with the greatest number occurring in 2008 and 2015 (Figure 10). Future sea level rise will increase the frequency of nuisance flooding (Figure 9) and the potential for greater damage from storm surge.

Total Rainfall Amounts in May 2015

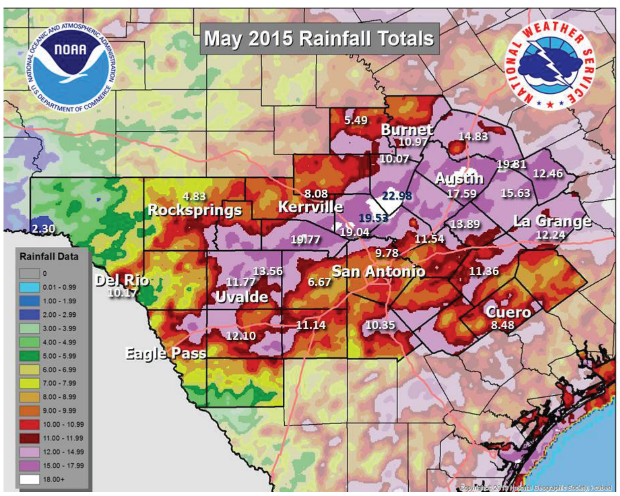


Figure 5: Monthly rainfall totals for May 2015 in south-central Texas. Large areas received more than 10 inches of rainfall and nearly the entire state was 2 to 4 times above normal. In late May 2015, south-central Texas experienced historic flash and river flooding following a 1- to 2-day rainfall of 4–12 inches and locally higher amounts. During this extreme precipitation event, the Blanco River at Wimberly, halfway between Austin and San Antonio, rose 35 feet in about 3 hours. Source: NOAA's National Weather Service.

Galveston Bay Coastal Surge Return Periods

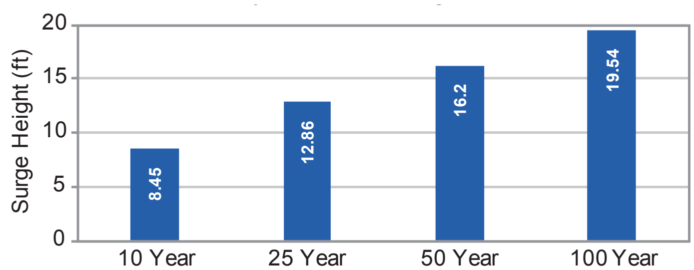


Figure 7: Coastal storm surge levels for 10-year, 25-year, 50-year, and 100-year return periods for (a) Galveston Bay. (Supplied by Luigi Romolo from the SURGEDAT database, Needham and Keim 2012)

Texas Palmer Drought Severity Index

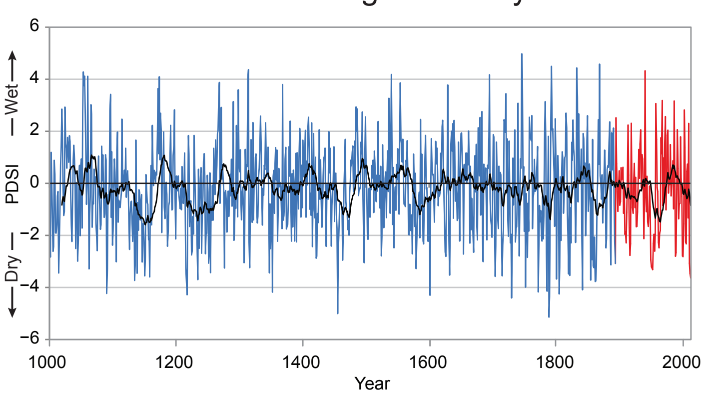


Figure 6: Texas Palmer Drought Severity Index. While periods of drought are common in Texas, the severity of the 2011 drought exceeded that of any previous drought throughout the history of the instrumental record (1895–2013 shown in red). Reconstruction of drought using proxies (blue) indicate droughts of the 2011 severity have occurred occasionally in the past. Source: NOAA NCEI.

Projected Change in Annual Precipitation

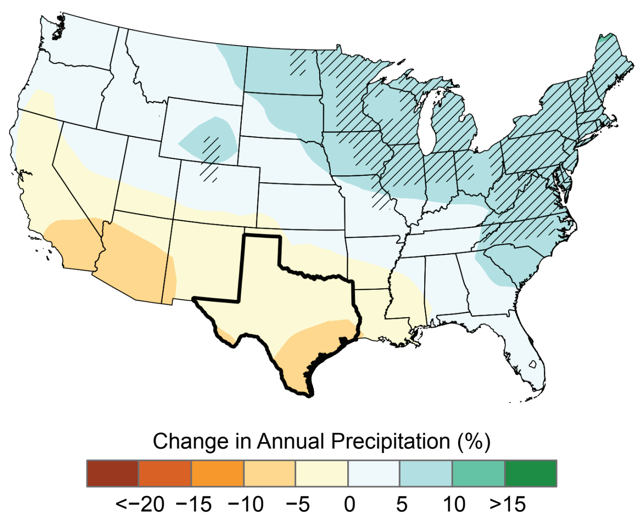


Figure 8: Projected changes (%) in annual precipitation for the middle of the 21st century compared to the late 20th century under a higher emissions pathway. Hatching represents areas where the majority of climate models indicate a statistically significant change. Texas is part of a large area in the southwestern and central United States with projected decreases in annual precipitation, but most models do not indicate that these changes are statistically significant. Source: CICS-NC and NOAA NCEI.

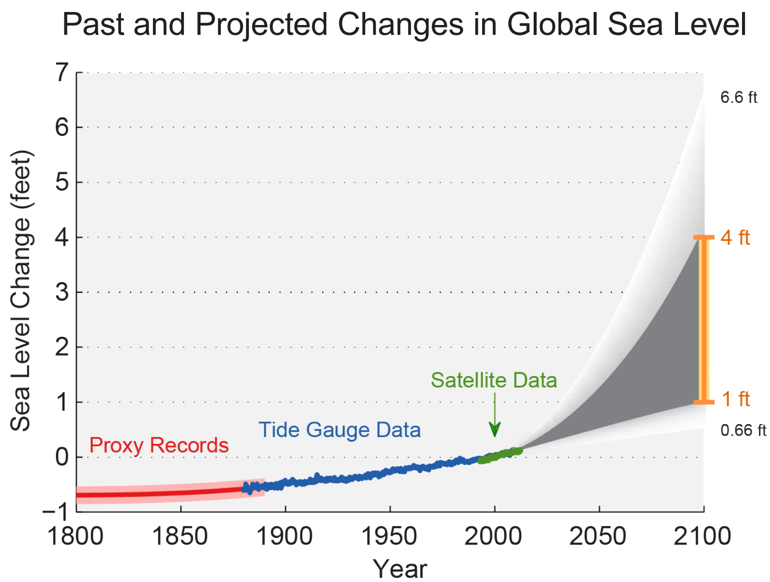


Figure 9: Estimated, observed, and possible future amounts of global sea level rise from 1800 to 2100, relative to the year 2000. The orange line at right shows the most likely range of 1 to 4 feet by 2100 based on an assessment of scientific studies, which falls within a larger possible range of 0.66 feet to 6.6 feet. Source: Melillo et al. 2014 and Parris et al. 2012.

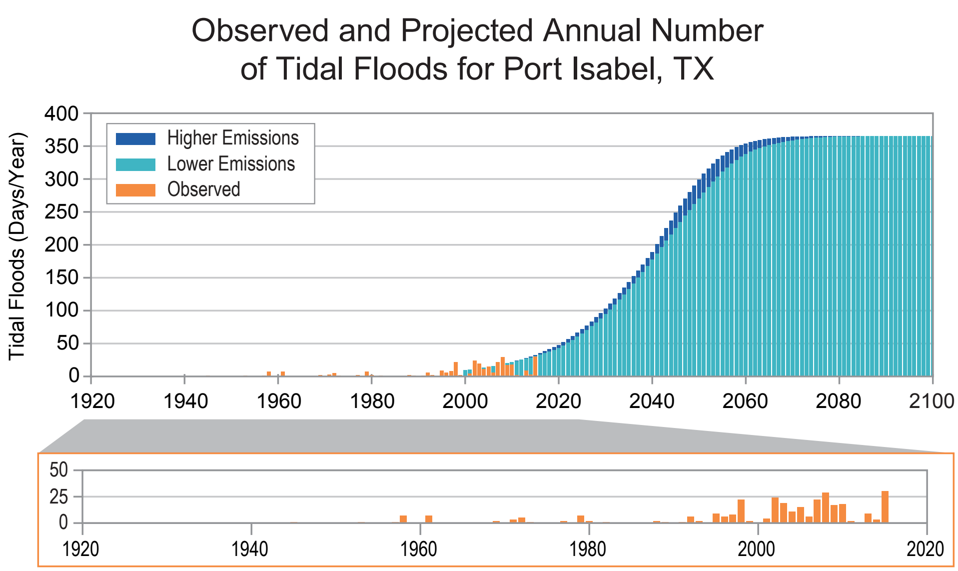
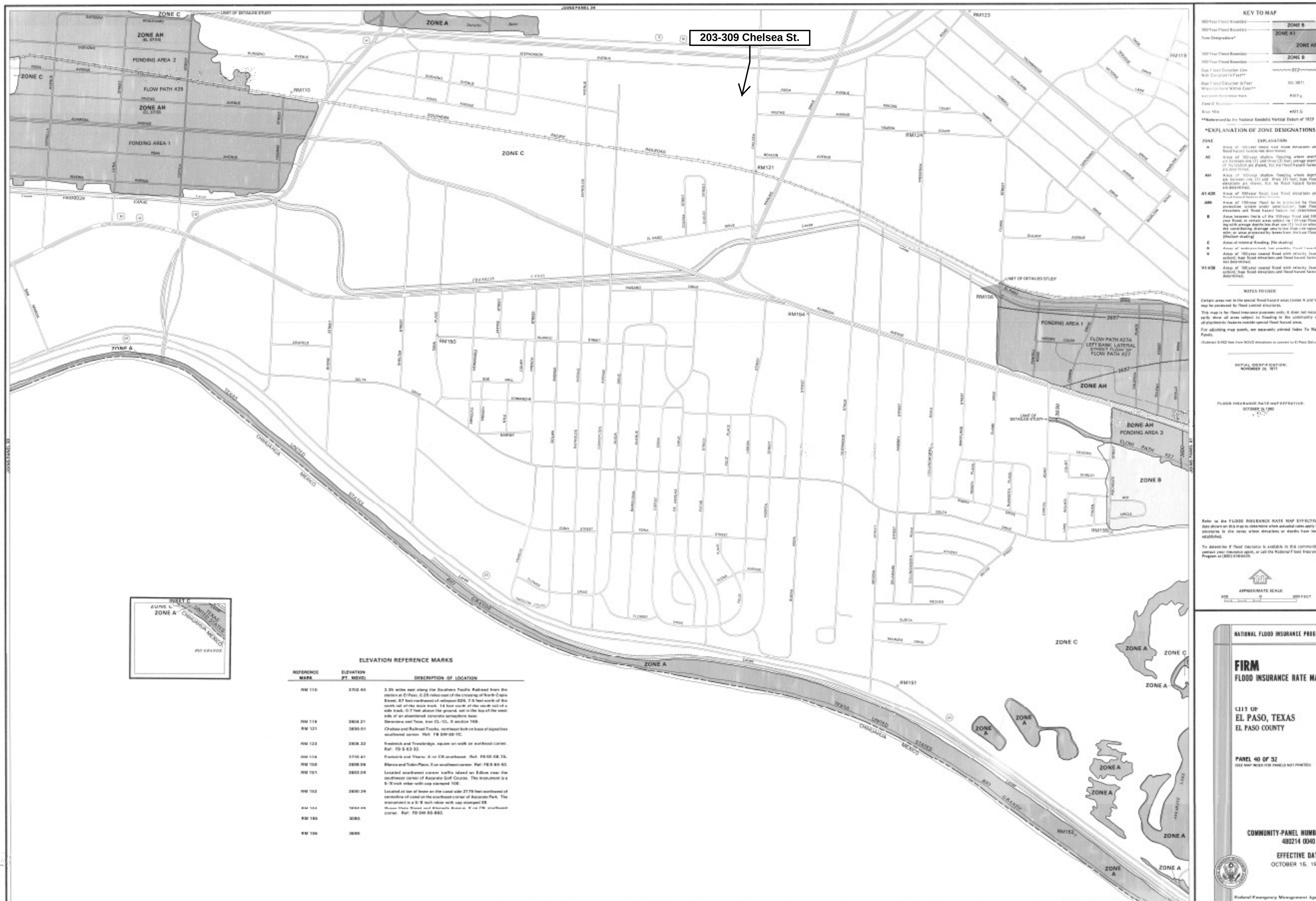


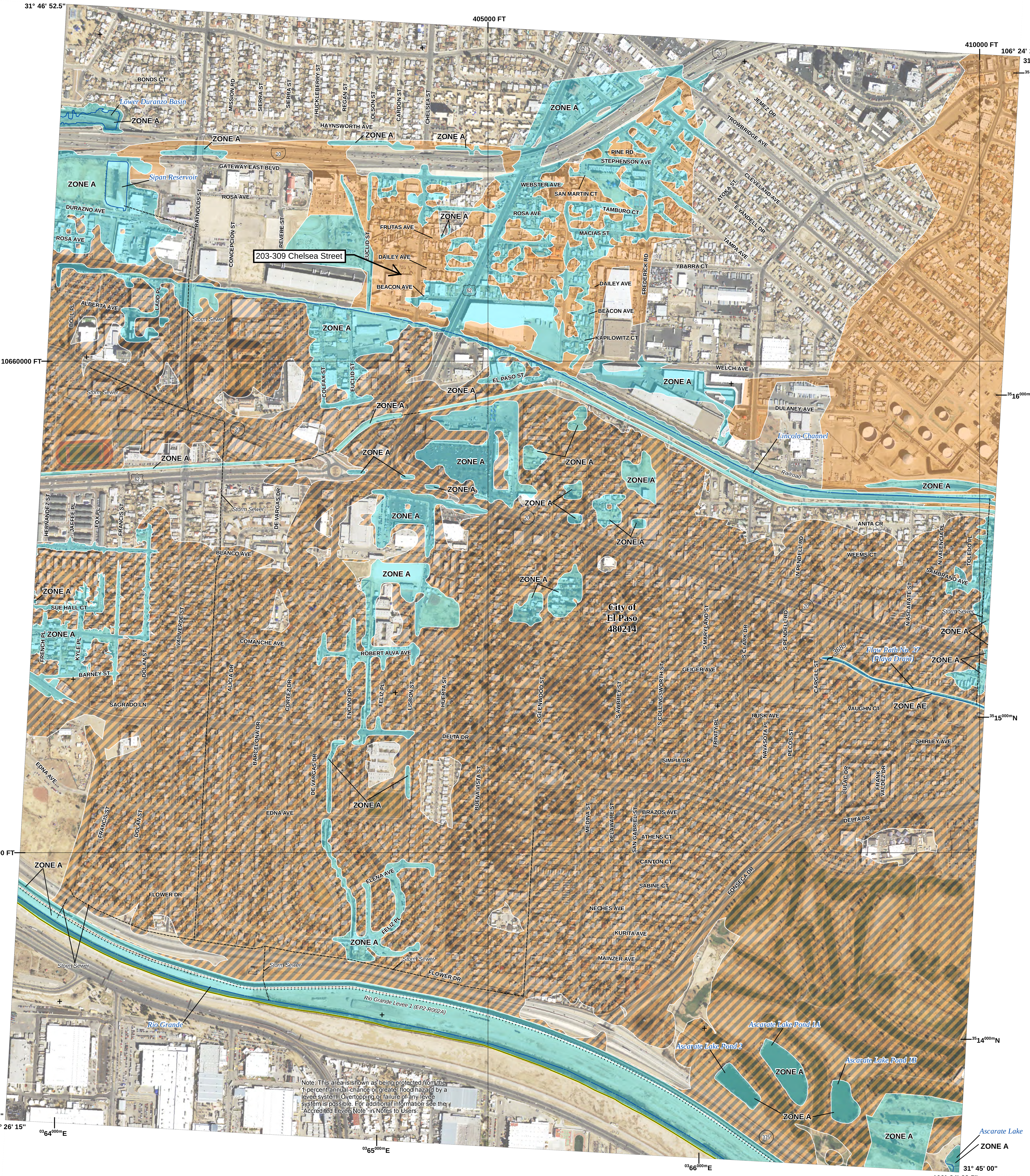
Figure 10: Number of tidal flood days per year for the observed record (orange bars) and projections for two possible futures: lower emissions (light blue) and higher emissions (dark blue) per calendar year for Port Isabel, TX. Sea level rise has caused an increase in tidal floods associated with nuisance-level impacts. Nuisance floods are events in which water levels exceed the local threshold (set by NOAA's National Weather Service) for minor impacts, such as road closures and overwhelmed storm drains. The greatest number of tidal flood days occurred in 2008 and 2015 in Port Isabel. Projected increases are large even under a lower emissions pathway. Near the end of the century, under a higher emissions pathway, some models project tidal flooding nearly every day of the year. To see these and other projections under additional emissions pathways, please see the supplemental material on the State Summaries website (https://statesummaries.ncics.org/tx). Source: NOAA NOS.

ATTACHMENT B

FEMA FLOOD INSURANCE RATE MAP (1982)


203-309 Chelsea St.
ZONE C
ZONE A
ZONE AH
PONDING AREA 1
PONDING AREA 2
FLOW PATH #25
FLOW PATH #27A
ZONE AH
PONDING AREA 3
ZONE B
INSET C
SOUTHERN PACIFIC RAILROAD
FRANKLIN CANAL
LIMIT OF DETAILED STUDY
ELEVATION REFERENCE MARKS
REFERENCE MARK
ELEVATION (FT. NGVD)
DESCRIPTION OF LOCATION
RM 110 3702.44
RM 121
Chelsea and Railroad Tracks, northeast bolt on base of signal box southwest corner. Ref. FB SW-50-TC.
RM 123 3808.32
Frederick and Trowbridge, square on walk on northeast corner. Ref: FB S-63-32.
RM 185 3080.
RM 186 3688.
KEY TO MAP
EXPLANATION OF ZONE DESIGNATIONS
NOTES TO USER
APPROXIMATE SCALE
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF
EL PASO, TEXAS
EL PASO COUNTY
PANEL 40 OF 52
COMMUNITY-PANEL NUMBER
480214 0040 B
EFFECTIVE DATE:
OCTOBER 15, 1982
Federal Emergency Management Agency

ATTACHMENT C
FEMA FLOOD INSURANCE RATE MAP
(PRELIMINARY, JULY 8, 2020)



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT HTTPS://MSC.FEMA.GOV

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A,V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
	E 18.2 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
	8 Coastal Transect
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
	513 Base Flood Elevation Line (BFE)
OTHER FEATURES	Limit of Study
	Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM),available products associated with this FIRM, including historic versions,the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map.Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study Report for this jurisdiction.To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Base map information shown on this FIRM was derived from multiple sources.Road centerlines and railroad tracks were provided by PdN Mapa. El Paso City Limits were provided by the City of El Paso. Vinton City limits were provided by the Village of Vinton. Watershed boundaries were provided by the US Department of Agriculture-Natural Resources Conservation Service (USDA/NRCS). Aerial Imgaery was provided by the US department of Agriculture - Farm Service Agency, dated 2018.

ACCREDITED LEVEE: Check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1-percent-annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection for areas on this panel. To mitigate flood risk in residual risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit https://www.fema.gov/national-flood-insurance-program.

SCALE

N

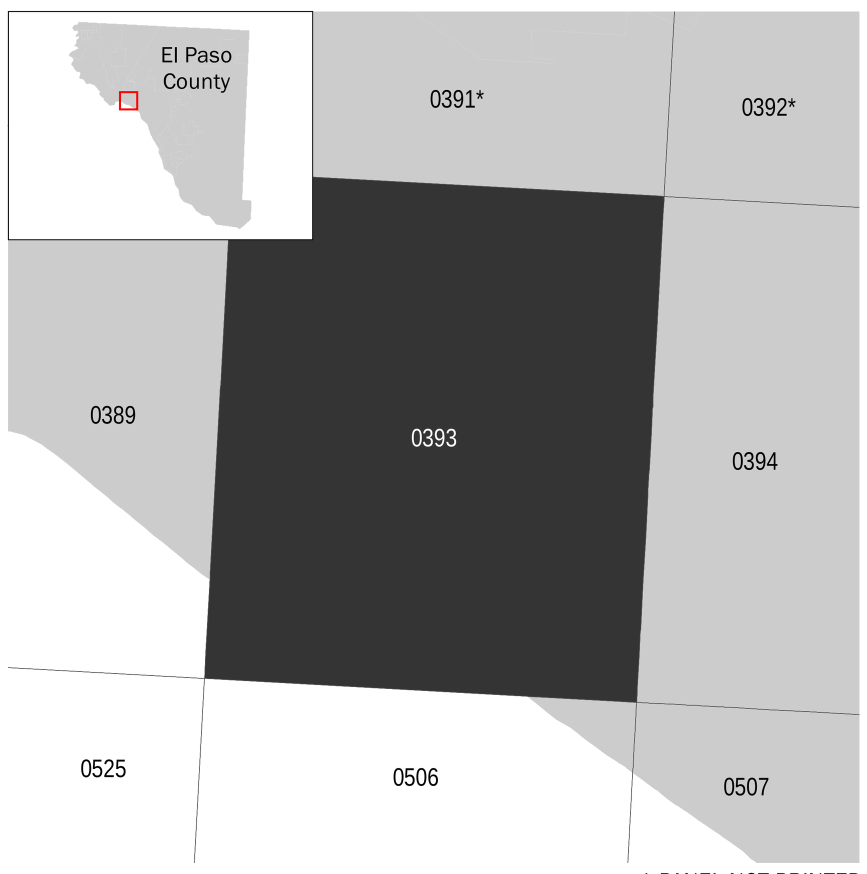
Map Projection:
North American Datum 1983 State Plane Texas Central FIPS 4203 (US Feet)
Vertical Datum: NAVD 88

1 inch = 500 feet 1:6,000

0 500 1,000 2,000 feet

0 125 250 500 meters

PANEL LOCATOR



* PANEL NOT PRINTED

FEMA

National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP

EL PASO COUNTY, TEXAS
and Incorporated Areas

PANEL **393** OF **800**

FEMA

Panel Contains:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL PASO, CITY OF	480214	0393	F

PRELIMINARY
JULY 8, 2020

VERSION NUMBER
2.3.3.4

MAP NUMBER
48141C0393F

EFFECTIVE DATE