EPA Announces Proposed Plan

Lane Plating Works, Inc. Superfund Site
Dallas, Dallas County, Texas February 2025

The purpose of this Proposed Plan is to:

- Identify the United States Environmental Protection Agency's (EPA's) preferred alternative to remove contaminated soils and to inject amendments to address groundwater contamination for the Lane Plating Works, Inc Superfund Site (Site) and the reasons for the selection.
- Summarize the nature and extent of the contamination at the Site and describe the risks evaluated in the human health and the ecological risk assessments.
- Describe the remedial alternatives evaluated in the Feasibility Study.
- Solicit public review and comment on the EPA's preferred remedy for the site and information contained in the Administrative Record File.
- Provide information on how community members can be involved in the remedy selection process for the site.

This Proposed Plan (the Plan) identifies the Preferred Alternative for cleaning up the contaminated soil and groundwater at the Lane Plating Works Superfund Site (Site) in the city of Dallas, Dallas County, Texas. In addition, the Plan includes summaries of other cleanup alternatives evaluated for use at this Site. This document is issued by the U.S. Environmental Protection Agency (EPA), the lead agency for Site activities, and the Texas Commission for Environmental Quality (TCEQ), the support agency. EPA, in consultation with the TCEQ, will select a final remedy for the Site after reviewing and considering all information submitted during the 30-day public comment period. EPA, in consultation with the TCEQ, may modify the Preferred Alternative or select another response action presented in the Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the alternatives as well as the rationale for the Preferred Alternative presented in the Plan.

The purpose of the Proposed Plan is to fulfill statutory requirements pursuant to Sections 113(k)(2)(B), 117(a), and 121(f)(1)(G) of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund), 42 U.S. Code §§ 9613(k)(2)(B), 9617(a), and 9621(f)(1)(G).

In its role as lead agency, EPA conducted the Remedial Investigation (RI) and Feasibility Study (FS) for the site. The RI process determined the nature and extent of contamination and the risks to human health and the environment. The FS developed a list of remedial alternatives considered by EPA to address the contamination at the site. The TCEQ has coordinated with EPA during the RI/FS.

Community Participation

EPA encourages the public to review reports generated during the RI/FS process. The results of the sampling activities and an assessment of the potential site risks are presented in the RI Report (EA 2020a). The development and evaluation of remedial alternatives to address the contamination and site risks are presented in the FS Report (EA 2023). The Plan briefly summarizes these reports and others conducted during the RI/FS process, but it is not a substitute for them. For a complete source of information, please refer to these reports, which are in the Administrative Record File located at the repositories listed below. The Administrative Record File is available for public review during normal business hours in an electronic computer imaged format at the EPA Region 6 office located at the address below:

U.S. Environmental Protection Agency
1201 Elm Street
Dallas, Texas 75270-2102
214-665-6424

The administrative record can be found online at the EPAs web page for the site. To view the documents online, please go to www.epa.gov/superfund/lane-plating-works.

Copies of documents from the administrative record are also available at the following locations:

100032450

028842

Texas Commission on Environmental Quality

The TCEQ Central File Room viewing area is currently closed due to renovations at the TCEQ Austin campus. Requests to obtain copies of TCEQ's public records concerning the site may be submitted to the Central File Room through e-mail, at cfrreq@tceq.texas.gov.

TCEQ Central File Room electronic records are also accessible online, at https://www.tceq.texas.gov/agency/data/records-services.

and at

Highland Hills Branch Library
6200 Bonnie View Rd
Dallas, Texas 75241
http://dallaslibrary2.org/branch/highland.php
214-670-0987

A public meeting to present the Proposed Plan, answer any questions, and receive any comments will be held as follows:

Thursday, February 13, 2025

5:30 p.m. – 7:30 p.m.
Highland Hills Branch Library
6200 Bonnie View Road
Dallas, Texas 75241

The public is invited to comment on this Proposed Plan. Final decisions regarding remediation of the site will be made only after public comments are considered. **The official public comment period begins on February 13, 2025,** to **March 15 13, 2025**. During the public comment period, written comments may be submitted to:

Mail to:

Kenneth Shewmake
Remedial Project Manager
U.S. EPA Region 6
1201 Elm Street, Suite 500 (SEDRA)
Dallas, TX 75270-2102

Or Email to
shewmake.kenneth@epa.gov

Site History

The site was historically occupied by a former electroplating facility that conducted hard chromium and cadmium plating for approximately 90 years up until 2015. Additional processes included the following:

- Chromate dips
- Chromic acid anodizing
- Hard chrome plating using chromic acid
- Cadmium plating,
- Copper plating using copper cyanide
- Zinc plating of aluminum using nitric acid and zinc cyanide
- Nickel plating using nickel sulfate.
- Black oxide coating, electroless nickel passivation
- Machining and grinding
- Pretreatment of metal parts using sodium hydroxide and sulfuric acid
- Operating a lead melting pot to repair anodes used in plating baths.
- Electroplating wastewater treatment

Site records on file with TCEQ and TCEQ Notice of Registration records document the following waste streams from former site activities: corrosive and reactive waste, cadmium, chromium, lead, spent muriatic acid, chromate, metals filings and dust, cyanide waste, caustic waste, caustic soda solid (tank bottoms), and wastewater treatment sludges from electroplating operations. Operations ceased in 2015 with numerous violations, investigations, and bankruptcy.

Previous Investigations and Response Actions

The site has been investigated by several state and federal agencies over the past 40 years, and releases of plating wastes to onsite soils and groundwaters have been documented. In 2010 and 2011, TCEQ conducted investigations at the site. Analytical results from soil samples collected from a waste pile and around the site facility foundation indicated leachable cadmium, chromium, lead, and mercury concentrations. Due to numerous violations, including failure to obtain a permit prior to disposal of hazardous waste and to prevent unauthorized discharge of industrial soil waste, a Notice of Enforcement letter and a Proposed Agreed Order were transmitted to the facility in 2011. TCEQ conducted a follow-up investigation in 2014, which noted several additional issues and alleged violations of waste management. On-site soil samples indicated total chromium, hexavalent chromium, antimony, arsenic, cadmium, mercury, and nickel were detected at levels supporting additional investigation.

The Department of Labor Occupational Safety and Health Administration (OSHA) issued a fine to the facility in 2015. Violations were related to the upkeep, use of safety

equipment, provision of required safety equipment, training for employees, improper storage, and improper disposal of chemicals. A second Notice of Enforcement letter was transmitted to the facility in 2015.

In 2015, TCEQ conducted an investigation to determine if site conditions posed an immediate threat to nearby residents and if grinding grit had spread off the facility property. Grinding grit was observed on the ground surface south and southeast of the site. Leaks, openings in the walls, and yellow stains believed to be chromium were observed in the facility building. Soil samples were collected from the southern boundary of the property. Antimony, arsenic, cadmium, chromium, lead and mercury were detected in soil, but not at levels that present an immediate threat to nearby residents.

In 2015, TCEQ conducted a limited removal action that included hazardous waste characterization analysis/chemical characterization at the facility laboratory, laboratory packing and re-packing of select chemicals, removal of chromic acid sludge from two sumps at the facility and securing the chromic acid waste into poly totes. Shortly thereafter, TCEQ referred the site to the EPA Region 6 Superfund Program for further evaluation.

In 2016, TCEQ and EPA representatives from the Superfund Program conducted a facility visit in which numerous issues were observed. In 2016, the EPA Response and Removal Branch tasked an EPA contractor to perform a Removal Assessment (RA) at the site. The RA took place during two phases: Phase 1 (April 2016) and Phase 2 (September 2016). Soil samples were collected during both phases of the RA, each indicating hexavalent chromium, lead, and mercury exceedances in on-site soils. EPA conducted an Initial Cleanup in 2016. Over 188,000 lbs of waste material was removed. In 2018, the site was placed on the National Priority List (NPL) (EPA 2018). Since being listed on the NPL, per- and polyfluoroalkyl substances (PFAS) have become a site contaminant in response to emerging regulations.

From 2019 to 2021, the EPA conducted an RI in two phases at the site. During the RI, the following activities were performed:

• Collection of soil, sediment surface water, and groundwater samples to determine the nature and extent of contamination.
• Installation of soil borings and permanent groundwater monitoring wells.
• Determining the total depth of existing hand-dug water wells.
•Collection of background samples for soil, sediment, and surface water.

Samples were collected and analyzed for volatile organic compounds, semivolatile organic compounds, PFAS, total petroleum hydrocarbons, oxidation reduction potential, total organic carbon, metals, and pH. Analytical results from both RI Phase 1 and Phase 2 events can be found in the RI Report, Revision 03 (EA 2020a).

In 2019 a security fence and warning signs were installed at the site by the EPA.

In response to a request from community members, soil samples were collected from yards in the residential neighborhood west of the site, at a church and a school to the north of the site, and at the community baseball field to the south of the site. Samples were collected in three sampling events in 2021, 2022, and 2023. In total, 49 soil samples (including QC) were collected outside of the Lane Plating Works, Inc. Superfund Site. The Contaminants of Concern (COCs), namely arsenic, hexavalent chromium, lead, and mercury, were not detected above Preliminary Remedial Goals (PRGs) and are not at levels that would be a risk for human health. The results can be seen in Appendix A1 of the Feasibility Study Report, Revision 02 (EA 2024)

In 2021, the EPA started work on a FS to evaluate remedial alternatives and to support remedy selection. The full evaluation of clean up methods considered for this Site can be found in the Feasibility Study Report, Revision 02 (EA 2024)

In 2022, EPA was notified that trespassers were entering buildings at the Site, which was verified during a subsequent site visit. As a result, EPA conducted a Removal Site Evaluation in 2022, to determine the need for a Time-Critical Removal Action. This sampling event consisted of the collection of surface soil, air, surface wipes, paint, and bulk items (drywall, texture, and joint compounds). It also consisted of surveying the electroplating building and all its outside structures. The Removal Site Evaluation concluded there was an unacceptable risk to trespassers and led to conducting a Time-Critical Removal Action in 2022 – 2023.

The Time-Critical Removal Action focused on four main phases. A summary of the removal action activities is listed below.

1. Clearing and Grubbing – Removal of equipment, debris, and brush from the site. Over 360 cubic yards of trash and debris was removed.

2. Wet Demolition of All Site Structures – All of the site buildings including the Main Plating Building (MPB), the Hazardous Waste Treatment Building, all associated structures, and the building foundations were demolished. Water was used to limit migration of asbestos and other particulates during the demolition. Over 714,000 Lbs. of building material and 65,560 Lbs. of asbestos containing material was removed from the site and disposed of. Three plating vats/sumps located underground within the former building perimeter were found during the demolition. The sumps were removed, and 1050 gallons of liquid waste was disposed of.
3. Excavation – The Time-Critical Removal Action included the excavation and disposal of soils from the process area that exceeded site specific clean up levels. The soil excavation also occurred below the building footprints. Soil was excavated up to five feet below the ground surface or until groundwater was encountered. The excavated soils were disposed of at an approved landfill. Over 16,600 tons of contaminated soil was excavated during the removal.
4. Restoration – The excavated areas were backfilled with approximately 17,000 tons of clean fill dirt. The excavated area was planted with native grasses and wildflowers.

All four phases of the Time-Critical Removal Action have been completed. Information on the Time Critical Removal Action can be found in the Removal Site Evaluation Report for Lane Plating Works, Inc (Weston 2024).

A Pilot Test was started in 2023 to evaluate methods that may be used for groundwater cleanup at the Lane Plating Site. This study includes small scale pilot tests designed to evaluate the chemical mixtures that could be used for treatment of contaminated groundwater. The study will help optimize the dosage, and application of cleanup products, to minimize risks, and uncertainties prior to full scale cleanup of the Site. Field work on the Pilot Test has been completed. The data is being finalized and validated, but preliminary data has been used to evaluate the cleanup alternatives presented in this Proposed Plan. A Pilot Test Report will be released as soon as the study is complete.

Summary of Site Characteristics

Current and future land use

The site is located at 5322 Bonnie View Road, approximately 5 miles south of downtown Dallas, Dallas County, Texas (Figure 1). The property consists of approximately 4.6 acres and is surrounded by open or wooded land. The site previously consisted of the main facility building where most of the electroplating operations occurred, a storage shed known as the Hazardous Waste Treatment Building (HWTB), and a former wastewater treatment building with miscellaneous tractor trailers located south of the facility and the HWTB (Figure 2). These structures were removed as part of the Time-Critical Removal Action that was conducted during 2022-2023 (EA 2023). The wooded areas located to the east and south of where the facility was located contains old equipment and trash. A barbed wire fence and locked chain link fence also surround the property.

Bonnie View Road serves as a north-south connector road with convenient access to Interstate 45. There are several neighborhoods surrounding the site, including Arden Terrace, which is across the street. The forested corridor of Five Mile Creek, which includes Arden Terrace Park and College Park, borders the site to the south. Several schools are located nearby, including the Barack Obama Male Leadership Academy, Head Start at Sunnyview, J.N. Ervin Elementary School and Paul Quinn College. The city of Dallas owns several properties south of the site.

The site is currently zoned by the City of Dallas as commercial service. Properties directly adjacent to the site are zoned R-7.5(A)-residential single family (1 dwelling unit per 7,500 square feet). Properties to the northeast are zoned MF-2(A) multifamily. Additionally, some properties zoned MF-2(A) have specific permits for use as a school. The closest existing residences are located approximately 200 to 300 feet west of the facility along Bonnie View Road. A baseball field is located approximately 650 feet south of the facility.

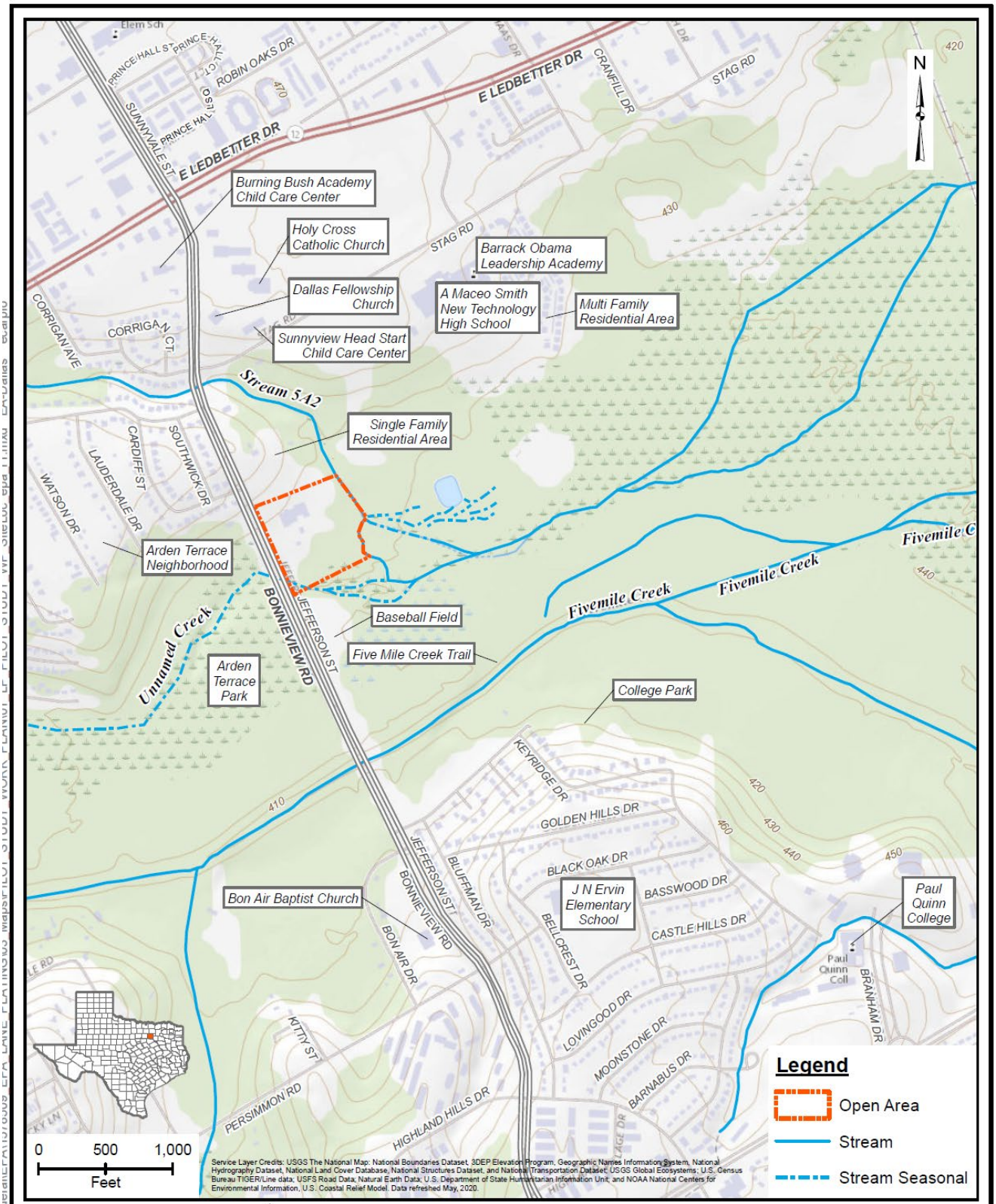
Future land use and reuses of the site are currently unknown. However, most of site property is located in the regulatory floodway or the 100-year floodplain. Development is restricted in the floodway and there are building standards for development in the 100-year floodplain. The northern part of the site property, where the electroplating facility was located, is outside the floodway and floodplain. The city owns several parcels south of the site that are also within the floodplain and this area is currently used as park or open space. EPA completed a Reuse Assessment Discussion Guide in December 2023 that can be found in the Administrative Record.

Geological and Hydrological Characteristics

The site is situated on a slight slope and is downhill from the area to the north and northwest. To the east of the site is stream 5A2 and to the south is an unnamed stream. Stream 5A2 contains water most of the time but can go dry during periods of drought. Stream 5A2 may be contributing surface water to shallow groundwater. These two streams merge southeast of the site in a forested wetland area with dense vegetation. This forested wetland area also has two intermittent ponds. On the other side of the forested area is Fivemile Creek. The primary surface water drainage pattern across the site is to the south and southeast toward the unnamed stream. Three old, unused hand dug water wells/cisterns were located on the north side of the facility building; one was dry when it was discovered during the Phase 2 field event. These wells were plugged and abandoned during the 2023 removal action.

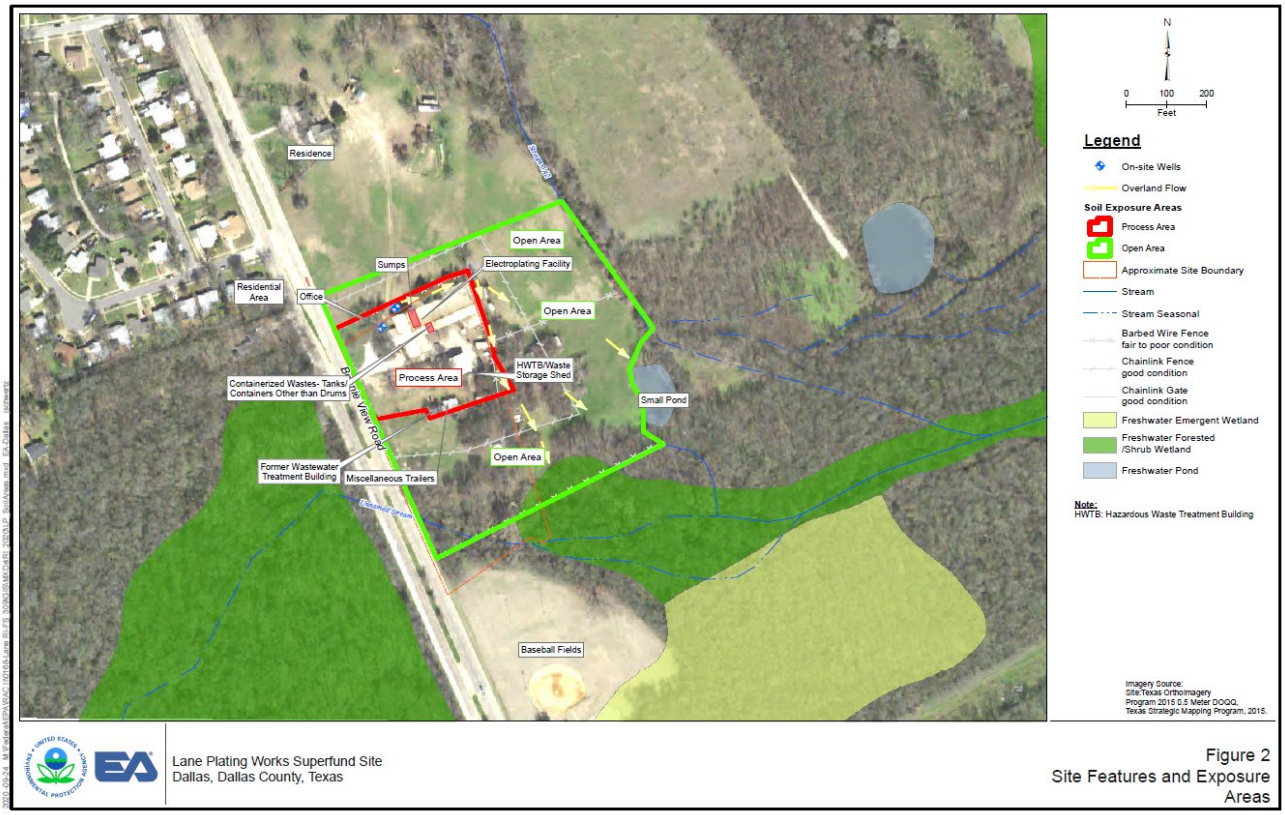
Based on data collected during the RI, the site is located above a rock layer called the Austin Chalk. The depth to encountering the Austin Chalk ranges from 2 ft below ground surface (bgs) on the northwest edge of the site to 17.5 ft bgs in the central part of the site where the front office of the electroplating building was located. The average depth to encounter the Austin Chalk is approximately 11 ft bgs across much of the site. The Austin Chalk was not encountered in the vicinity of two monitoring wells which were installed to 25 and 20 ft bgs on the east portion of the site, near Stream 5A2. This indicates the Austin chalk is further below the surface in this area. The Austin Chalk has a thickness of approximately 300 to 500 ft and limits the flow of water in a downward direction. The soil on top of the Austin Chalk rock layer consists primarily of clay, silty clay, and small areas with sandy/silty clay soil.

There are two zones where shallow groundwater is found at the site. The first groundwater zone is named the perched groundwater zone as this is groundwater that sits on top of the Austin Chalk rock layer. The shallow perched groundwater zone is class 2B “Not currently, but potentially a source of drinking water” according to the EPA groundwater classification system. Drinking water in this area is provided by Dallas Water Utilities and EPA did not identify anyone near the site using Groundwater as drinking water. Groundwater at the site flows primarily to the south/southwest and appears to be controlled by the slope of the Austin Chalk rock layer. The perched groundwater zone begins at the northern most portion of the site and becomes thicker on the southern side of the site. The second shallow groundwater zone is called the Austin chalk zone and is the groundwater that has soaked into the top layers of the Austin Chalk rock layer. Groundwater samples collected in the Austin Chalk zone show that some site related COCs are found in the top of the Austin Chalk zone, but the majority of the groundwater contamination is in the perched groundwater zone that is on top of the Austin Chalk.



Lane Plating Works, Inc. Superfund Site
Dallas, Dallas County, Texas

Figure 1
Site Location

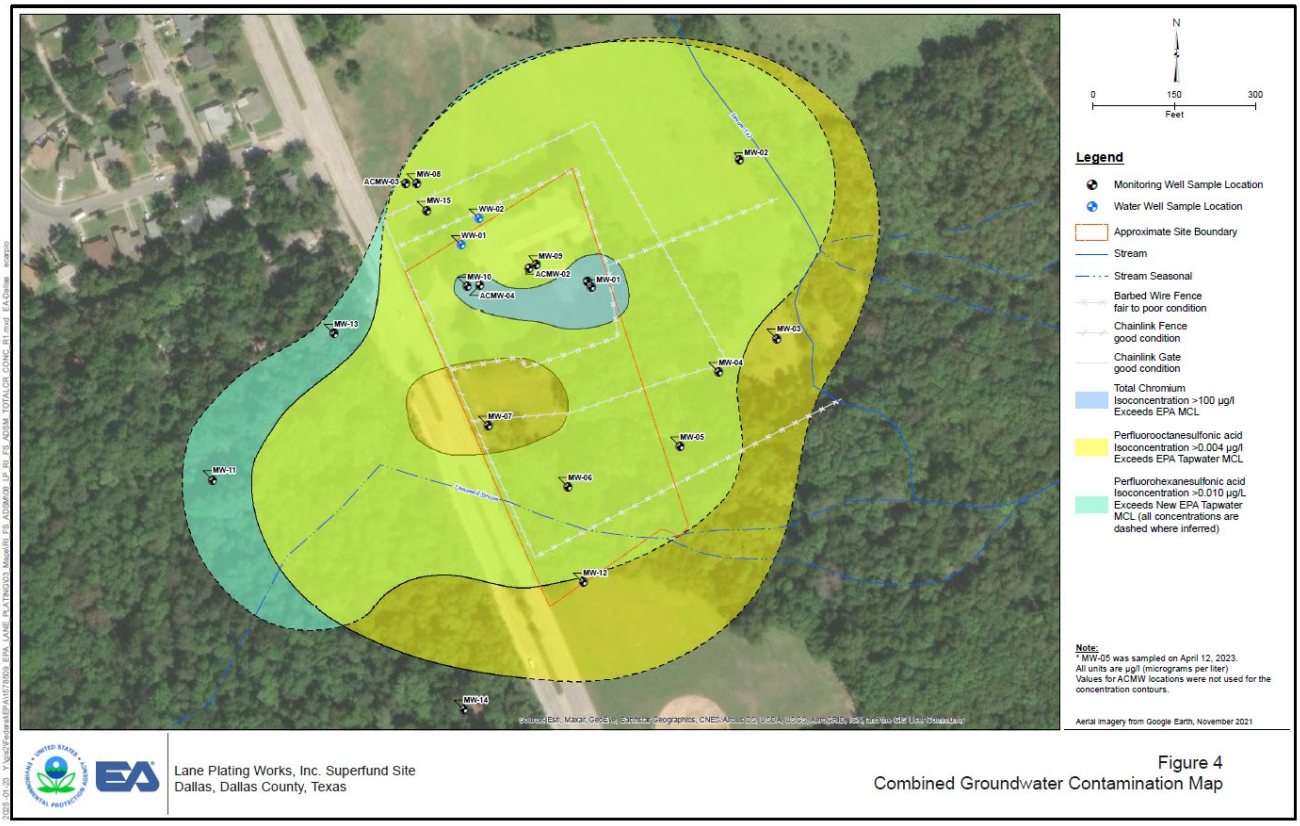


Lane Plating Works Superfund Site
Dallas, Dallas County, Texas

Figure 2
Site Features and Exposure Areas

Lane Plating Works Superfund Site
Dallas, Dallas County, Texas

Figure 3
Map of the Area with Lead, Mercury, Arsenic, and Hexavalent Chromium Levels Above PRGs in Soil


N
0
150
300
Feet
Legend
Monitoring Well Sample Location
Water Well Sample Location
Approximate Site Boundary
Stream
Stream Seasonal
Barbed Wire Fence
fair to poor condition
Chainlink Fence
good condition
Chainlink Gate
good condition
Total Chromium
Isoconcentration >100 µg/l
Exceeds EPA MCL
Perfluorooctanesulfonic acid
Isoconcentration >0.004 µg/l
Exceeds EPA Tapwater MCL
Perfluorohexanesulfonic acid
Isoconcentration >0.010 µg/L
Exceeds New EPA Tapwater
MCL (all concentrations are
dashed where inferred)
Note:
* MW-05 was sampled on April 12, 2023.
All units are µg/l (micrograms per liter)
Values for ACMW locations were not used for the
concentration contours.
Aerial Imagery from Google Earth, November 2021
ACMW-03
MW-08
MW-15
WW-02
WW-01
MW-09
ACMW-02
MW-10
ACMW-04
MW-01
MW-02
MW-13
MW-03
MW-04
MW-07
MW-05
MW-11
MW-06
MW-12
MW-14
Lane Plating Works, Inc. Superfund Site
Dallas, Dallas County, Texas
Figure 4
Combined Groundwater Contamination Map

Nature and Extent of Contamination

The RI results indicate that soils and groundwater have been impacted by metal plating activities. Figure 3 shows area where soil contamination exceeds the preliminary remediation goals (PRGs) for lead, mercury, hexavalent chromium, and arsenic. This figure also shows the square gridded area where soil was removed during the 2022-2023 Time-Critical Removal Action. Only 2 samples exceeded the PRG for PFOS in soil and both locations are in the area where soil was excavated during the 2022-2023 Time-Critical Removal Action. Figure 4 shows the areas where groundwater concentrations exceed PRGs. During the RI surface water and sediment were sampled. The RI results for surface water and sediment sampling did not show unacceptable risk to human health or the environment.

Summary of Site Risks

A Human Health Risk Assessment (HHRA) was conducted to evaluate the risk to human health from exposure to contaminants associated with the site. A Superfund HHRA is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these releases; it estimates the "baseline risk" in the absence of any remedial actions at the site, under current and future land uses.

Contaminants of Concern (COCs)

COCs are hazardous substances or chemicals found at the site at a concentration deemed to pose an unacceptable risk to human health or the environment. When determining if a chemical is a COC, the acceptable level of risk, land-use (i.e., current, and reasonable potential future), and exposure scenarios (i.e., completed pathways) are considered. The Site was evaluated for commercial use and using the more stringent residential use exposure scenarios.

One form of significant risk is the risk of causing cancer, also called carcinogenic risk. Excess cancer risk is described in terms of the probability that an exposed individual will develop cancer because of that exposure by age 70. At a Superfund site, excess cancer risks are summed across all contaminants of concern, or COCs, and exposure pathways that contribute to exposure. In general, EPA considers excess cancer risks that are below about 1 chance in 1,000,000 (1×10-6 or 1E-06) to be so small as to be negligible. This is because at this low level, it is difficult to distinguish risk posed by site contamination and risk from natural conditions. If cancer risks are above 1 person in 10,000 (1×10-4 or 1E-04) this is sufficiently large that some sort of action is warranted in most cases. If the excess cancer risks are between 1 person out of a million (1E-06) and one person out of 10,000 (1E-04) then a response action is generally not warranted, unless there are special circumstances.

Harmful health effects other than cancer can also result from exposure to chemicals from a contaminated site, and these effects are called noncancer risk. Noncancer risk is calculated by dividing the amount of chemical to which a person is exposed by the lowest concentration that has been shown to have no harmful effects. This value is called a hazard quotient. Adding together the hazard quotients for all chemicals with the same type of risk is called a hazard index (HI). If the HI is greater than one, then a response action may be needed.

The following contaminants were determined to be in surface soil, subsurface soil, and groundwater with risk levels that warrant action:

- Hexavalent chromium
- Mercury
- Lead
- Arsenic
- Perfluorooctane sulfonate (PFOS)
- Perfluorohexanesulfonic acid (PFHxS)

Exposure Areas

Based upon the past uses of the site and sample results, the site was divided into separate exposure areas for evaluation in the HHRA. The boundary for these exposure areas is shown in figure 2. For soil, the two site exposure areas are as follows:

- **Process Area** – This exposure area is the developed portion of the site directly surrounding the buildings and other associated structures. It is enclosed by a barbed wire fence.
- **Open Area** – This exposure area is the remaining, mostly undeveloped, portion of the site outside of the barbed wire fence. It is bounded by the unnamed stream to the south, Stream 5A2 to the east, undeveloped land to the north, and Bonnie View Road to the west.

Surface soil is defined as the top 2 feet (ft) below ground surface (bgs) and subsurface soil is everything below 2 feet.

Impacted Surface Soil

Process Area – Antimony, arsenic, cadmium, lead, manganese, nickel, thallium, and hexavalent chromium were present in surface soil in the Process Area. The HHRA determined that hexavalent chromium and mercury were identified as noncarcinogenic hazards for a child resident. Hexavalent chromium was identified as a potential risk for the combined adult and child resident scenario. Lead was determined to be a concern in Process Area surface soil and is present at levels that could cause health impacts to children through elevated levels of lead in blood.

The Time Critical Removal Action started in 2022 resulted in the excavation of all surface soil that exceeded remedial goals in the process area. This soil was replaced with clean fill. Because of this, surface soil in the Process area no longer presents an unacceptable risk to human and ecological receptors. Information on the Time Critical Removal Action can be found in the Removal Site Evaluation Report for Lane Plating Works, Inc (Weston 2024).

Open Area – Arsenic, lead, mercury, and hexavalent chromium are present in surface soil in the Open Area. The HHRA determined carcinogenic risks are within the EPA cancer risk range for adult residents, child residents, commercial-industrial workers, and adolescent trespassers. The noncarcinogenic hazards are below the level of concern for exposure to soil within the Open Area. Lead is a concern in the open area based on blood lead calculations and lead levels exceeding levels based on the Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities (EPA 2024)

Impacted Subsurface Soil **–** Arsenic and hexavalent chromium exceeded Residential Soil RSLs for subsurface soils for both the Process Area and the Open Area. The Time Critical Removal Action started in 2022 resulted in the excavation of subsurface soil in the Process Area up to 5 feet bgs, or until removal goals were achieved, or until groundwater was encountered. The HHRA determined carcinogenic risks are within the EPA cancer risk range for adult/child residents, and commercial/Industrial workers. Noncarcinogenic hazards are below the level of concern for exposure to subsurface soil in the Open Area.

Impacted Groundwater **–** Most groundwater samples that were collected during the RI came from the area of the perched groundwater zone that lies above the Austin Chalk. Chromium exceeded the Maximum Contaminant Level (MCL). The MCL value is the maximum concentration of a chemical that is allowed in public drinking water systems. Chromium has been included in the nature and extent discussions in the following sections due to concentrations in groundwater exceeding the MCL of 100 micrograms per liter.

MCL values were not available for PFHxS and PFOS at the time the RI and FS were completed, as these contaminants were only recently found to be harmful. As such, detections of these compounds were screened against TCEQ Texas Risk Reduction Program Tier 1 $^{GW}GW_{Ing}$ Protective Concentration Levels, with detections of PFHxS and PFOS exceeding these criteria. These exceedances were carried forward for further evaluation under the HHRA (EA 2020b), which identified hexavalent chromium, PFHxS, and PFOS as site COCs for groundwater. On April 10, 2024, EPA announced new final MCL values for six PFAS chemicals including PFHxS, and PFOS. The new MCL values will be used as PRGs in this proposed plan. The size of the PFAS groundwater plume changed because the new MCL based clean up value is much lower than the value that was previously used during the RI/FS. The PFAS groundwater plume will need to be further evaluated with additional groundwater sampling during the remedial design (RD). This will be done to make sure the full area that exceeds the new PFAS clean up standard is known and addressed during the groundwater cleanup.

Surface Water and Sediment- Surface water and sediment were sampled during the risk assessment. There was no unacceptable risk for human health or unacceptable ecological risk due to exposure to surface water and sediment at the Site.

Land Use Assumptions

Currently, the city of Dallas has the western half of the site along Bonnie View Road zoned for Commercial and Business Service uses. The eastern part of the site is zoned for Single-Family Residential, which is similar to most of the surrounding area to the west. The area directly east of the site is zoned for Multi-Family Residential. The city of Dallas recently approved a comprehensive future land use plan called Forward Dallas. In this plan the future land use designation for the site is anticipated to be "Community Residential". The Five Mile Creek corridor adjacent the site is anticipated

to be "Regional Open Space", which could include park, open space and natural areas. Due to information from the City of Dallas the future use of the Site is assumed to be residential.

Potentially Exposed Populations in Current and Future Risk Scenarios

The Baseline HHRA for the site identified primary contaminant sources, contaminant release mechanisms, exposure pathways, and receptors for the COCs. The potential for exposure of human beings was evaluated based on current and reasonable future land use. Exposures evaluated in the HHRA focus on surface soil, subsurface soil, and groundwater. The following potential receptors were evaluated for exposure to chemicals found at the site:

- Residents (adults/children)
- Construction workers
- Commercial/industrial workers
- Trespassers (adolescents)

Exposure Pathways Affecting Each Population Group

Potential concerns were identified for surface soil within the Process Area and parts of the Open Area exposure areas. There are also potential concerns about groundwater used as a drinking water supply. The primary contributors to risk concerns were hexavalent chromium, mercury, PFOS, and PFHxS.

The following exposure pathways and routes are considered complete or potentially complete (meaning people very likely would or could be exposed to certain contaminants in certain situations):

- Incidental ingestion of and dermal contact with soil, surface water, and sediment
- Inhalation of chemicals adsorbed to windblown soil released to outdoor air
- Ingestion of and dermal contact with groundwater used a tap water supply.

Surface soil within the Process Area exposure area revealed carcinogenic risks above the EPA cancer risk range for residents (adults/children). Additionally, carcinogenic risks for all other receptors (i.e., construction worker, commercial/industrial worker, adolescent trespasser) due to exposure to surface soil was above a cancer risk level of 10-5. Non-carcinogenic hazards for the resident child exceeded an acceptable level of 1 for hexavalent chromium and mercury within the Process Area. Soils in the Process Area were addressed by the Time-Critical Removal Action (2022-2023) and no longer pose an unacceptable risk.

Within the Open Area exposure area, carcinogenic risks for all receptors except the construction worker were within the EPA's cancer risk range for exposure to surface soil. Lead is a concern in the open area soil based on blood lead calculations and lead levels exceeding levels based on the Updated Residential Soil Lead Guidance. PRGs were established for hexavalent chromium, PFOS and PFHxS in Open Area soil to prevent the migration of contamination from soil to groundwater.

Concentrations of hexavalent chromium revealed significant risk concerns for groundwater if it is used as a tap water supply. PFOS and PFHxS in groundwater revealed non-carcinogenic hazards above the acceptable level of 1 for the resident child, resident adult, and commercial/industrial worker.

Ecological Risk Assessment (ERA)

The ERA noted potential risks to plants and invertebrates in soil associated with concentrations of antimony, chromium, hexavalent chromium, copper, lead, mercury, nickel, and zinc. However, due to lack of toxicity data in scientific literature, low weight of evidence is given to potential risk of these receptors. Instead, the assessment of risk focuses on the upper-level tropic receptors (birds and mammals). The ERA did note that antimony, cadmium, and lead were found to cause potential risk to upper-level tropic receptors for surface soil in the Process Area. Surface soil in the process area was excavated and replaced with clean fill during the Time Critical Removal Action started in 2022. Therefore, the risk to birds and mammals from surface soil in the process area has already been addressed.

The Open Area is covered with native grasses, trees, and shrubs. This area also includes wetland habitat to the south of the facility building. As such, the area provides quality habitat for ecological receptors. The ERA found that chromium, hexavalent chromium, and mercury concentrations in open area surface soil could pose risks to terrestrial plants, and soil invertebrates. Due to the lack of toxicity data in scientific literature for terrestrial plants, and soil invertebrates no PRG was established for these receptors. The potential risk to terrestrial plants, and soil invertebrates from contaminants in Open Area surface soil should be addressed by the proposed action to address surface soil due to the risk to human receptors. No COCs were identified as posing an unacceptable risk to mammals or birds. No unacceptable risk to ecological

receptors from exposure to surface water and sediment was found at the Site.

Basis for Action

It is EPA's current judgment that one or more of the remedial measures considered in the Proposed Plan are necessary to protect public health or welfare from actual or threatened releases of hazardous substances.

Remedial Action Objectives (RAOs) and Preliminary Remediation Goals (PRGs)

For groundwater, the RAOs for the site are to:

- Prevent human exposure to COCs at concentrations above PRGs.
- Restore the groundwater to its expected beneficial use by reducing concentrations of COCs to levels equal to or less than the PRGs.
- Limit further migration of COCs in shallow groundwater at concentrations exceeding the PRGs.

For soil the RAOs for the site are to:

- Prevent potential unacceptable exposure to the future resident (adult/child) through ingestion, direct exposure, and/or inhalation of soil up to 2 ft below ground surface at levels exceeding PRGs.
- Prevent or minimize further migration of COCs from the Open Area soil to groundwater, surface water, and other site soil.

The site-specific PRGs are as follows:

Groundwater

Contaminant of Concern	Groundwater PRG (ug/L)[1]
Total Chromium	100
PFOS	0.004
PFHxS	0.01

Notes:
[1] *Groundwater PRGs were derived from National Primary Drinking Water Regulation (NPDWR), Maximum Contaminant Levels (MCLs)*
PFOS = Perfluorooctane sulfonic acid
PFHxS = Perfluorohexane sulfonate
µg/L=Microgram per liter

Soil

Contaminant of Concern	Soil PRG (mg/kg)[1]
Hexavalent Chromium[1]	26
Mercury[2]	11
Lead[3]	200
Arsenic[4]	35
PFOS[1]	0.05
PFHxS[1]	0.002

Notes:
[1] *EPA calculated site specific soil concentration for protection of groundwater.*
[2] *EPA Resident Noncarcinogenic Child RSL)*
[3] *Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*
[4] *(EPA Resident Noncarcinogenic Child RSL)*
ERA, and Federal Regulations.
PFOS = Perfluorooctane sulfonic acid
mg/kg = Milligrams per kilogram

Summary of Remedial Alternatives

EPA is considering the following alternatives to address the potential risks at the site:

Groundwater

- Alternative GW-1: No Further Action (NFA)
- Alternative GW-2: Pump and Treat with Ion Exchange
    - Alternative GW-2a: Ion Exchange Only
    - Alternative GW-2b: Ion Exchange and Granular Activated Carbon (GAC)
- Alternative GW-3: Enhanced in place (In Situ) Treatment and in place (In Situ) Carbon Sorption
    - Alternative GW-3a: In Situ Bioremediation (ISB)
    - Alternative GW-3b: In Situ Chemical Reduction (ISCR)

Soil

- Alternative S-1: NFA
- Alternative S-2: Soil Excavation and Offsite Disposal

Common Components for All Alternatives

This section describes the components that are common to all groundwater and soil alternatives, except for the NFA alternative. The common components include institutional controls (ICs), monitoring, and five-year reviews.

Institutional Controls (ICs)

ICs are administrative and/or legal controls that minimize the potential for human exposure to contamination by limiting land or resource use; ICs are generally to be used in conjunction with engineering measures and can be used to accomplish various remedial objectives. Implementation of ICs is not a viable, stand-alone remedy at this site because the ICs will not meet the RAOs. As a result, ICs are not included as a stand-alone groundwater or soil remedy. The following ICs may be considered and implemented at the site:

At the site, ICs will be required for all alternatives except the NFA alternative to protect against exposures to contaminated soil below 2ft depth and by restricting the use of groundwater as drinking water. The appropriate IC is not known at this time but may include restrictive covenants and/or deed notices for soil and groundwater. A restrictive covenant is an instrument filed in the real property records of the county where the affected property is located, which ensures that the restrictions will be legally enforceable. The covenant can only be executed by the property owner and is binding on current and future owners and lessees even if they are innocent owners or operators. A deed notice is an instrument filed in the real property records of the county where the affected property is located and is intended to provide notice regarding the conditions of affected property.

Five-Year Reviews

Five-year reviews are required if a remedial action results in hazardous substances, pollutants, or contaminants remaining at levels that do not allow for unlimited use and unrestricted exposure. Under the groundwater remedial alternatives, contaminants may remain at concentrations above the site PRGs until the RAOs are met. Under the soil remedial alternative, contaminants below 2ft bgs may remain at concentrations above the site PRGs. In each of the groundwater and soil remedial alternatives, contaminants may remain at concentrations above the site PRGs until they are found otherwise. Therefore, five-year reviews will be required components of each alternative.

The following sections detail the alternatives EPA is considering to address the potential risks at the site:

Groundwater Alternative GW-1: No Further Action

- Estimated Capital Cost: $0
- Annual Operation and Maintenance (O&M) Cost: $0
- Estimated Total Present Worth (2023): $0
- Estimated Time to Meet RAOs: No Action Taken

NFA is a retained alternative as required by the National Contingency Plan (NCP) and is used as a baseline for comparison with other technologies. Under this alternative, no remedial actions would be conducted at the site. All contaminants would remain in place and would be subject to environmental influences.

Groundwater Alternative GW-2: Pump and Treat with Ion Exchange

Alternative GW-2 involves installing extraction wells to remove/extract contaminated groundwater from the chromium and PFOS/PFHxS plumes. The extracted groundwater will be treated with ion exchange resins to remove contaminants, and the treated water will be injected back into the ground. Two different resins may be used to treat chromium and PFOS/PFHxS separately in the treatment trains because the resin that treats chromium may not work for PFOS/PFHxS, or vice versa. Main components of this alternative include the following: installation of extraction wells, installation of injection wells, installation of a treatment system, installation of a conveyance system connecting the treatment system to the extraction and injection wells, implementation of ICs to restrict the use of groundwater, monitoring and evaluation of the groundwater plumes, and five-year reviews.

Through the use of treatment, hydraulic containment and ICs, the remedial alternative will meet the RAOs by preventing human exposure to contaminated ground water exceeding the PRGs and mitigating contaminated plume migration.

This alternative will meet the RAOs to restore ground water to its beneficial use as a drinking water resource by meeting the MCLs for the COCs. After remedy construction, the EPA will operate the remedy as a long-term response action which will last no more than 10 years or until the RAO is met, whichever comes first. If after the LTRA, if the RAO is not met, the state of Texas, under the TCEQ, will take over operation of the system under continued Operation and Maintenance until the RAO is met.

Sub-Alternative GW-2a: Ion Exchange Only

- Estimated Capital Cost: $2,230,011
- Annual O&M Cost: $832,810
- Estimated Total Present Worth (2024): $21,767,840
- Estimated Time to Meet RAOs: 30 years

Sub-Alternative GW-2a includes ion exchange as the only treatment medium for both PFOS/PFHxS and hexavalent chromium.

Sub-Alternative GW-2b: Ion Exchange and GAC

- Estimated Capital Cost: $2,230,011
- Annual O&M Cost: $812,398
- Estimated Total Present Worth (2024): $21,290,272
- Estimated Time to Meet RAOs: 30 years

Sub-Alternative GW-2b is the same as GW-2a with the exception that the treatment system will consist of two different treatment media: GAC for PFOS/PFHxS and Ion Exchange for chromium.

Groundwater Alternative GW-3: Enhanced in Place (In Situ) Treatment and Carbon Sorption

Alternative GW-3 includes the injection of substrates/ amendments to promote microbial activities/abiotic reactions that in return can create a reducing condition to promote reduction of hexavalent chromium to its less mobile and less toxic form. In addition, colloidal activated carbon (CAC) would be injected as passive sorbents to retard and sequester PFOS/PFHxS plume migration. Main components of this alternative include the following: 1) installation of permanent injection wells and performance monitoring wells for ISB/ISCR and CAC injection 2) amendments for ISB/ISCR to be injected into the plume and downgradient of the chromium plume area in a transect pattern perpendicular to groundwater flow (see Sub-Alternatives GW-3a and 3b below), 3) injection of CAC into the plume and downgradient of the plume in a transect pattern perpendicular to groundwater flow for the PFOS/PFHxS plume, 4) monitoring of groundwater concentrations of the COCs, 5) implementation of ICs to restrict groundwater use, and 6) five-year reviews.

Through the use of treatment and ICs, the remedial alternative will meet the RAOs by preventing human exposure to contaminated ground water exceeding the PRGs and mitigating contaminated plume migration.

This alternative will meet the RAOs to restore ground water to its beneficial use as a drinking water resource by meeting the MCLs for the COCs. After remedy construction, the EPA will operate the remedy as a long-term response action which will last no more than 10 years or until the RAO is met, whichever comes first. If after the LTRA, the RAO is not met, the state of Texas, under the TCEQ, will take over operation of the system under continued Operation and Maintenance until the RAO is met as well as continued monitoring to ensure protectiveness.

Sub-Alternative GW-3a: In Situ Bioremediation (ISB)

- Estimated Capital Cost: $4,048,573
- Annual O&M Cost: $181,116
- Estimated Total Present Worth (2024): $22,049,456
- Estimated Time to Meet RAOs: 30 years

Sub-Alternative GW-3a will involve the use of ISB to treat the chromium plume. Reagents injected in the plume encourage microbial reduction of hexavalent chromium to trivalent chromium, a less toxic form. Commercially available reagents for ISB include Regenesis 3DME™ and MRC® (electron donor and metals remediation compound, respectively), Terra Systems SRS-M® (emulsified vegetable oil), and Adventus EHC-F® (fermentable carbon substrate blended with micro-sized zero-valent iron).

Sub-Alternative GW-3b: In Situ Chemical Reduction ISCR

- Estimated Capital Cost: $3,577,804
- Annual O&M Cost: $181,116
- Estimated Total Present Worth (2024): $20,045,074
- Estimated Time to Meet RAOs: 30 years

Sub-Alternative GW-3b is the same as GW-3a with the exception that the chromium plume will be treated with ISCR instead of ISB. Under this alternative, reagents will be injected in the chromium plume to reduce hexavalent chromium to trivalent chromium in an abiotic reaction, which forms precipitates and absorbs onto the soil particles to become less mobile. Commercially available ISCR reagents include zero-valent iron (ZVI) and calcium polysulfide. Various ZVI compositions have been developed to improve ZVI performance, i.e., activated carbon as a carrier is combined with ZVI to increase the longevity of ZVI, and emulsified-ZVI to promote both biotic and abiotic reduction of the contaminants.

- Pilot tests to evaluate reagents that could be used with alternative GW-3b (ISCR) have been conducted. The first phase of the pilot test used a mixture composed of powdered activated carbon, zero-valence iron, and water. This mixture was injected into 10 locations, at up to 4 depth intervals at each point, and between 10-15 feet below the ground surface. Results show a 98% reduction of hexavalent chromium concentrations in the groundwater immediately downgradient from the pilot test area. The results also show that total chromium and hexavalent chromium concentrations in groundwater dropped below cleanup goals in the test area. This mixture did not appear to be effective for PFHxS and PFOS.
- The second pilot test used a mixture composed of colloidal activated carbon, sodium dithionite, caustic, and water. This mixture resulted in a 99% reduction of PFOS in one well and a 94% reduction in the second test well. The treatment resulted in a 98% reduction of PFHxS and concentrations below the 10 ng/L clean up goal. The PFHxS and PFOS levels in one test well did rebound to higher concentrations after 60 days, but this rebound is likely due to an influx of groundwater or may indicate the amount of product injected needs to be increased. The PFHxS and PFOS levels remained below the clean up goal in the second test well. Results show that total chromium and hexavalent chromium concentrations in groundwater were reduced by over 75%, but concentrations only reached cleanup goals in one well of the test area before rebounding.
- Combining zero-valence iron with colloidal activated carbon should result in a mixture that is effective for the treatment of hexavalent chromium, PFOS, and PFHxS.

Soil Alternative S-1*:* NFA

- Estimated Capital Cost: $0
- Annual O&M Cost: $0
- Estimated Total Present Worth (2023): $0
- Estimated Time to Meet RAOs: No Action Taken

Alternative S-1 is considered as a baseline for comparison to other remedial alternatives in accordance with the NCP. This alternative does not include any active measures to prevent or minimize further migration of COCs and/or risk beyond what occurred under the Time Critical Removal Action for soils in the Process Area.

Soil Alternative S-2*:* Soil Excavation and Offsite Disposal

- Estimated Capital Cost: $2,243,923
- Estimated Total Present Worth (2023): $2,797,424

- Estimated Time to Meet RAOs:

Alternative S-2 includes the excavation of the affected Open Area soils down to 2 feet bgs, and transport to a permitted off-site facility for subsequent treatment and/or disposal. The excavated areas would be backfilled with clean soil and planted with appropriate types of grass and trees. Soil in the Process Area was previously addressed during the November 2022 Time Critical Removal Action.
The area where soil excavation is planned currently has large trees, thick brush, and a large amount of site debris. Large trees will be evaluated to determine if they need to be removed. Trees, brush, and debris that are removed will be taken off site for disposal at an appropriate disposal facility. After site clearance, pre-excavation soil samples will be collected to further delineate the areas requiring excavation and for waste profiling. Based on soil sampling results, soil will be directly loaded into trucks for disposal at the appropriate facility. After excavation, confirmation samples will be collected to determine if the residual soil concentrations at the site remain above the listed PRGs. This remedial alternative requires the implementation of ICs to restrict uses of soil below 2ft depth and five-year reviews.

This alternative meets the soil RAO through the excavation of contaminated soils within the upper 2ft that exceeds the PRGS and the implementation of ICs restricting uses of deeper contaminated soil that exceeds the PRGs.

Evaluation of Alternatives

EPA uses the following nine criteria to evaluate remedial alternatives for the cleanup of a release: (1) overall protection of human health and the environment; (2) compliance with Applicable, Relevant and Appropriate Requirements (ARARs); (3) long-term effectiveness and permanence; 4) reduction in toxicity, mobility, or volume through treatment; 5) short-term effectiveness; 6) implementability; 7) cost; 8) state acceptance; and 9) community acceptance. These nine criteria are categorized into the following three groups: threshold, balancing, and modifying. The threshold criteria must be met for an alternative to be eligible for selection. The threshold criteria are overall protection of human health and the environment and compliance with ARARs. The balancing criteria are used to weigh major tradeoffs among the alternatives. The five balancing criteria are long-term effectiveness and permanence; reduction of toxicity, mobility, or volume through treatment; short-term effectiveness; implementability; and cost. The modifying criteria are state acceptance and community acceptance, which are evaluated once the Proposed Plan public comment period is complete.

Comparative Analysis of Alternatives

The comparative analysis of technologies, or combinations thereof, for each alternative relative to the nine evaluation criteria is presented as follows:

1. Overall Protection of Human Health and the Environment

This criterion is used to determine whether each alternative provides adequate protection of human health and the environment. The evaluation of protection focuses on the reduction, control, or elimination of site risks through the use of institutional controls, engineering controls, or treatment.

Groundwater – Alternative GW-1 (NFA) does not provide protection of human health and the environment. Alternatives GW-2 and GW-3 are protective of human health and the environment by reducing the COC concentrations in groundwater to below the MCL values. ICs will be used with alternatives GW-2 and GW-3 to restrict the use of groundwater until RAOs are met. Additional groundwater sampling will be done over time to make sure the remedy is protective.

Soil – Alternative S-1 does not reduce risk, leaving contaminants within the soil and allowing for exposure to contaminated soil. Alternative S-2 is protective of human health and the environment through the excavation and offsite disposal of contaminated soil and the implementation of ICs to restrict exposure to contaminated soil at depth.

2. Compliance with ARARs

This criterion is used to evaluate whether each alternative will meet all ARARs. ARARs are substantive remediation levels or performance standards drawn from federal and state environmental laws and regulations for use at CERCLA sites. Section 121(d) of CERCLA, as amended by Superfund Amendments and Reauthorization Act, states that remedial actions must attain ARARs. ARARs may include regulations, standards, criteria, or limitations promulgated under federal or state laws. An ARAR may be either "applicable" or "relevant and appropriate," but not both. The NCP, in Title 40 of the Code for Federal Regulations, Part 300, defines ARARs. This criterion is used to evaluate whether each alternative will meet all

the federal and state ARARs. The applicable ARARs for each alternative are presented in detail within the FS Report (EA 2023). For this evaluation, an alternative either complies with ARARs or does not comply with ARARs.

Groundwater – Alternative GW-1 will not comply with ARARs as it does not meet state and federal requirements. Alternatives GW-2 and GW-3 meet ARARs, specifically the Safe Drinking Water Act MCLs for drinking water.

Soil – Alternative S-1 will not comply with ARARs while Alternative S-2 will comply with state and federal ARARs.

3. Long-Term Effectiveness and Permanence

Groundwater – Alternative GW-1 is not effective in the long-term as the COCs are persistent in the environment and will not be reduced below human health and the environmental risk values. Alternative GW-2 is effective in the long-term as COC impacted groundwater is removed and treated at the site before reinjection. Alternative GW-2 is ranked higher in long-term effectiveness than Alternative GW-3 due to the removal and treatment of PFOS and PFHxS. With Alternative GW-3 PFOS and PFHxS will remain adsorbed to the CACs resulting in the need for continued monitoring and potential re-treatment.

Soil – Alternative S-1 is not effective in the long-term as COCs will remain in the soil and thus the possibility for exposure remains. Alternative S-2 is an effective long-term solution as the contaminated soil is removed and taken off-site, reducing site risks and meeting RAOs.

4. Reduction of Toxicity, Mobility, and Volume (TMV) of Contaminants Through Treatment

This evaluation criterion addresses the CERCLA statutory preference for treatment options that permanently and significantly reduce the TMV of contaminants. The preference is satisfied when treatment reduces the principal threats through the following:

- Destruction of toxic contaminants
- Reduction in contaminant mobility
- Reduction in total mass of toxic contaminants
- Reduction in total volume of contaminated media

Although CERCLA includes a statutory preference for treatment, this criterion is not a threshold that must be met. For this evaluation, an alternative may be considered to have: (1) no reduction on TMV, (2) moderate reduction on TMV over time, or (3) complete reduction on TMV over time.

Groundwater – For Alternative GW-1, no hazardous substances will be treated or destroyed. The contaminants would remain on-site and potentially continue to migrate through the groundwater, thus this alternative will not reduce TMV. Alternatives GW-2 and GW-3 address TMV through treatment. GW-2 reduces TMV through groundwater extraction and treatment. Contaminants are permanently removed from the groundwater through the use of extraction and treatment prior to re-injection of ground water that meets the MCLs. Alternative GW-3 would reduce the TMV of groundwater contaminants through the use of injection media that treats the contaminants to meet MCLs.

Soil – Alternative S-1 does not treat contaminated soil, providing no expected reduction of toxicity, mobility, and volume of COCs in soils. Alternative S-2 does not meet the reduction in TMV through treatment, as soil is excavated and disposed of at an offsite facility. Although not through treatment, the overall mobility toxicity and volume of contaminated soils is reduced through excavation and offsite disposal.

5. Short-Term Effectiveness

This evaluation criterion addresses the effects of the alternative during the construction and implementation phase until the RAO is met. Under this criterion, alternatives are evaluated for their effects on human health and the environment during implementation of the remedial action. The following factors are to be considered:

- Exposure of the community during implementation
- Exposure of workers during construction
- Environmental impacts
- Time to achieve RAOs

Groundwater – Alternative GW-1 does not treat any contamination, thus there is no change in risk in the short-term. The other alternatives pose little increased risk to the public during implementation as site access will be restricted. Alternative GW-2 has slight increased risk during installation from potential contact with contaminated media during construction and from operations, maintenance, and monitoring. Alternative GW-3 has less short-term risk than Alternative GW-2 as impacted media is not transported to the surface and there is no risk from O&M activities. Results from the

pilot test conducted November 2023 to February 2025 show that Alternative GW-3b was effective in reducing contaminants to levels below PRG values in 60-90 days. The time required to achieve similar results with Alternative GW-2 is not known and could take from a few years to several decades.

Soil – Alternative S-1 does not cause any additional impacts to the environment, community, or workers. Alternative S-2 poses little risk to the community, as site access is restricted to the public. Impacts to the community include construction traffic, noise, and dust. The impact of dust will be minimized by wetting soil and monitoring air as was done during the Time-Critical Removal Action (2022-2023). Brief exposure of workers to contaminated soil may occur during soil removal. Engineering controls and personal protective equipment are proven techniques for mitigating short-term risks. The time required to achieve RAOs is estimated to be 6-12 months from the start of construction for Alternative S-2.

6. Implementability

This criterion addresses the technical and organizational feasibility of implementing an alternative and the availability of various services and materials that may be required during its implementation. The following factors were considered:

- Ability to construct the technology
- Monitoring requirements
- Availability of equipment and specialists

Groundwater – Alternative GW-1 is the easiest to implement. Alternative GW-2 and GW-3 use methods that have been widely implemented at other sites, are established technologies, and use readily available equipment and materials. However, Alternative GW-2 may have implementability issues with building the pump and treat facilities in a floodplain and securing the facilities from trespassers. After construction, Alternative GW-2 would require a period of continuous operation. During the continuous operation period, the perched and shallow groundwater zones may recharge slowly which would result in operational difficulties. Alternative GW-3 uses existing technology that has been used for treating other contaminants, however injecting CAC into a groundwater plume for the treatment of PFOS/PFHxS is still an evolving science. A pilot test was recently conducted to address some of the uncertainties. Alternative GW-3 would not require a period of operation as does Alternative GW-2, but GW-3 will require additional monitoring and possibly additional injection of treatment material. Each of the alternative's face challenges due to the lithology of the subsurface that may minimize the zone of influence of the injection and extraction wells. Due to the ability to inject Alternative GW-3 at pressure to increase the zone of influence for the remedy, it is ranked higher for implementability.

Soil – Alternative S-1 requires no action to implement. Alternative S-2 removes contaminated soil from the site with equipment and personnel that are readily available. Soil excavation and offsite disposal was used during the Time-Critical Removal Action (2022-2023) to address soil in the Process Area, proving that Alternative S-2 is able to be implemented.

7. Cost

Costs include estimated one-time capital costs and O&M costs. Present worth cost is the total cost of an alternative over time in terms of today's dollar value. Cost estimates are expected to be accurate within a range of 50% above estimated costs to 30% below estimated costs. Due to the change in the MCL values for PFOS and PFHxS in groundwater it was necessary to update the cost estimate presented in the Feasibility Study Revision 02 (2024). Updated costs are presented in a letter titled *Updated Remedial Alternative Costing Package* from EA Engineering to Kenneth Shewmake dated December 9, 2024.

The O&M costs are estimated based on a 30 year operation cycle in order to compare present worth costs for each alternative. It is understood that 30 years is only used for this purpose, and operation and maintenance will continue until RAOs are met.

Groundwater – Alternative GW-1 (NFA) is the least expensive alternative followed by Alternative GW-3b. Alternative GW-2a is the most expensive alternative.

Soil – There are no costs associated with Alternative S-1, making it the least expensive remedial alternative for soil.

The table below displays a summary of the costs for each alternative, including sub-alternatives.

Estimated Cost Summary							
	Groundwater					Soil	
	GW-1	GW-2a	GW-2b	GW-3a	GW-3b	S-1	S-2
Capital Cost	0	$2,230,011	$2,230,011	$4,048,573	$3,577,804	$0	$2,243,923
Annual O&M Cost	0	$832,810	$812,989	$181,116	$181,116	$0	---
Net Present Worth	0	$21,767,840	$21,290,272	$22,049,456	$20,045,074	$0	$2,797,424

8. State Acceptance

EPA consulted with TCEQ during preparation of the Proposed Plan. The state has reviewed and provided comments on the HHRA, the RI, FS Report, and this Proposed Plan. EPA will request support from TCEQ upon completion of the public comment period and prior to the issuance of the ROD, which describes EPA's final remedy.

9. Community Acceptance

Community acceptance of the Preferred Alternative will be evaluated after the public comment period ends and will be described in the ROD for the site.

Summary of EPA's Preferred Remedy

The following remedy components combine to form EPA's preferred remedy for remediation of this site:

- **Alternative GW-3b: Enhanced In Situ treatment with Chemical Reduction (ISCR) and In Situ Carbon Sorption**
- **Alternative S-2: Soil Excavation and Offsite Disposal**

Based on the current data and information available at this time, EPA judges the preferred remedy to be protective of human health and the environment, as summarized below:

- Alternative S-2 (soil excavation and offsite disposal) will continue the work on surface soil completed under the 2022-2023 EPA Time-Critical Removal Action. The Time-Critical Removal Action resulted in the excavation and offsite disposal of 16,510 tons of contaminated soil and other material. Alternative S-2 will address an estimated 4,280 tons of surface soil that exceeds preliminary remedial goals that remain in the Open Area.
- Alternative GW-3b includes the injection of reagents into shallow groundwater to promote the chemical reduction of hexavalent chromium. Colloidal activated carbon (CAC) will be used to sequester PFOS/PFHxS and limit migration of the plume.
- The treatment reagents that will be used with alternative GW-3b (ISCR) were evaluated during the Pilot Test was started November 2023. Data from pilot tests will be used to determine the injection method and the amount of product needed to cleanup groundwater at the Site.
- The completed field portion of the pilot tests provided evidence for the implementability of injecting reagents into a shallow perched groundwater zone with clay soil. The colloidal variation of activated carbon was more easily injected and had more consistent injection pressures.

Remedy alternatives GW-3b and S-2, which combine to form the preferred remedy, meet risk-based protectiveness standards, and comply with ARARs. EPA anticipates successful implementation of the preferred remedy will prevent human exposure to COCs at concentrations above PRGs and restore the groundwater to its expected beneficial use.

EPA may modify its position regarding site remediation based upon its assessment of community acceptance and state acceptance. Community and state acceptance will be described in the ROD after comments are received.

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Information Repositores:

Hidden Hills Branch Library
6200 Bonnie View Road
Dallas, Texas 75241
https://dallaslibrary2.org/branch/highland.php
214-670-1740

Texas Commission on Environmental Quality

The TCEQ Central File Room viewing area is currently closed due to renovations at the TCEQ Austin campus. Requests to obtain copies of TCEQ's public records concerning the site may be submitted to the Central File Room through e-mail, at cfrreq@tceq.texas.gov.

TCEQ Central File Room electronic records are also accessible online, at https://www.tceq.texas.gov/agency/data/records-services.

Superfund Toll-Free Line
800-633-9363

EPA Region 6 Library
1201 Elm Street, Suite 500
Dallas, Texas 75270-2102
214-665-6424

EPA on the Internet:

EPA Headquarters
www.epa.gov

EPA Region 6
www.epa.gov/region6

EPA Region 6 Superfund, Lane Plating Works., Inc. Site
http://www.epa.gov/superfund/lane-plating-works

Glossary

Applicable, Relevant and Appropriate Requirements (ARARs) – Generally, any federal, state, or local requirements or regulations that would apply to a remedial action if it were not being conducted under the Comprehensive Environmental Response, Compensation, and Liability Act, or that while not strictly applicable, are relevant in the sense that they regulate similar situations or actions and are appropriate to be followed in implementing a particular remedial action.

Baseline Human Health Risk Assessment (HHRA) – A formal risk assessment conducted as part of the RI according to EPA-prescribed procedures. The need for remedial action at a site is established in part on the results of the baseline risk assessment.

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) – Also known as Superfund. CERCLA is a federal law passed in 1980 and modified in 1986 by the Superfund Amendments and Reauthorization Act (SARA). The Acts created a special tax that went into a Trust Fund, commonly known as Superfund, to pay for investigation and cleanup of abandoned or uncontrolled hazardous waste sites.

Colloidal Active Carbon CAC - an activated carbon colloid consisting of low micron size particles (2 um) that flow easily through the pore spaces within the subsurface soil. The high surface area of CAC particles provides a greater ability to adsorb contaminants that are captured within activated carbon pores, where their concentrations are reduced through sequestration.

Ecological Risk Assessment (ERA) – A formal risk assessment conducted as part of the RI according to EPA-prescribed procedures. It's an assessment that evaluates the likelihood that adverse ecological effects may occur or are occurring as a result of exposure to one or more stressors.

Hazard Index (HI) – In the baseline risk assessment, the ratio of the dose of a chemical calculated for a receptor divided by the reference dose. When the HI exceeds 1.0 (i.e., the expected dose exceeds EPA's reference dose), a health risk is assumed to exist.

In Situ Treatment - To directly treat contaminated soil or groundwater in the ground.

Institutional Controls (IC) – Institutional Controls are non-engineered instruments such as administrative and legal controls that help minimize the potential for human exposure to contamination and/or protect the integrity of the remedy.

Integrated Exposure Uptake Biokinetic (IEUBK)- A computer model developed by the EPA to support assessments of health risks from exposures to lead.

Maximum Containment Levels (MCLs) – Set under the Safe Drinking Water Act, a contaminant level that may not be exceeded in a drinking water source.

National Contingency Plan (NCP) – The National Oil and Hazardous Substances Pollution Contingency Plan is composed of the federal regulations that guide the Superfund program.

National Priorities List (NPL) – EPA's list of the most serious uncontrolled or abandoned hazardous waste sites currently identified for possible long-term remedial response where money from the Trust Fund or other sources may be used. The list is based, primarily, on the score a site receives on the Hazard Ranking System. EPA is required to update the NPL at least once a year.

No Further Action (NFA) – A No Further Action decision generally means that the Site will not require additional remedial action, based on the agency's knowledge of site conditions when it issues the NFA.

Polyfluoroalkyl substances (PFAS) - A class of man-made chemicals that contain multiple fluorine atoms attached to a carbon chain. **Perfluorooctanoic acid (PFOA)** and **Perfluorohexanesulfonic Acid (PFHxS)** are chemicals that are included in the category of PFAS. PFAS chemicals have been used in a variety of consumer and industrial products since the 1940s. They can be found in many everyday products, including paints, textiles, outdoor clothing, food packaging, and fire-fighting foam. Some PFAS do not break down in the environment and can accumulate in living things, including humans and animals. There is evidence that exposure to PFAS can lead to adverse health outcomes, such as liver disease, kidney disease, and cancer.

Preliminary Remediation Goals (PRGs) – Concentration levels set for individual chemicals that, for carcinogens corresponds to a specific cancer risk level of 1 in 1 million and for non-carcinogens corresponds to a Hazard Quotient of 1.

Remedial Action Objective (RAO) – An objective established for a CERCLA remedial action that defines the extent to which sites require cleanup to meet the

objective of protecting human health and the environment.

References

EA Engineering, Science and Technology, Inc., PBC (EA). 2020a. *Remedial Investigation Report, Lane Plating Works, Inc. Superfund Site, Dallas, Dallas County, Texas.* Revision 03. November.

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———. 2024. *Feasibility Study Report, Lane Plating Works, Inc. Superfund Site, Dallas, Dallas County, Texas. Revision 2* February.

U.S. Environmental Protection Agency (EPA). 2018. *HRS Documentation Record, Lane Plating Works, Inc., EPA id No. TXN0000605240.*

Weston Solutions, Inc. 2024. *Removal Site Evaluation Report for Lane Plating Works, Inc 5322 Bonnie View Road Dallas, Dallas County, Texas.* September

EPA, 2024. *Updated Residential Soil Lead Guidance for CERCLA Sites and RCRA Corrective Action Facilities*- January 17, 2024

EA Engineering, Science and Technology, Inc., PBC (EA). 2024a. *Updated Remedial Alternative Costing Package, Lane Plating Works, Inc. Superfund Site, Dallas, Dallas County, Texas.* December 9, 2024.

USE THIS SPACE TO WRITE YOUR COMMENTS

Your input on the Proposed Plan for the Lane Plating Works, Inc. Superfund Site is important to EPA. Comments provided by the public are valuable in helping EPA select a final cleanup remedy for the Site.

You may use the space below to write your comments, then fold and mail to

Kenneth Shewmake
Remedial Project Manager
U.S. EPA Region 6
1201 Elm Street, Suite 500 (SEDRA)
Dallas, TX 75270-2102

Comments must be postmarked by April 14, 2025. If you have any questions about the comment period, please contact:

Kenneth Shewmake at 214-665-3198 or through EPA's toll-free number at 1-800-533-3508.

Those with electronic communications capabilities may submit their comments to EPA via email at the following email address: shewmake.kenneth@epa.gov

Name _____

Address _____

City _____

State _____ **Zip** _____

Email _____