

CITY OF HOUSTON



PUBLIC WORKS AND ENGINEERING PLANNING & DEVELOPMENT DIVISION

EXECUTIVE SUMMARY

Project Overview

InControl Technologies LLC was retained by Lone Star Heat Treating (Property Owner), to provide environmental consulting services for the above referenced subject property located at 5212 Clinton Drive in Houston, Harris County, Texas. The subject property (the Site) consists of one parcel totaling 1.40± acres of land located southeast of downtown Houston, Harris County, Texas (**Figure C1**). The property is currently undeveloped. The surrounding area is commercial/ industrial (**Figure B1**).

The Site is located within the Buffalo Bayou Watershed and is located primarily outside the 0.2% annual chance (500 year) floodplain (**Figures C2a and C2b**).

Volatile Organic Compounds (VOC) Protective Concentration Level Exceedance (PCLE) zones were identified on the southern portion of the subject property. The PCLE zones are depicted on **Figure C3a** through **Figure C3e**. The combined PCLE Zone in groundwater is depicted on **Figure C3f**.

Historical Environmental Condition

The Site is a vacant and unimproved property approximately 1.40± acres in size at 5212 Clinton Drive in Houston, Harris County, Texas. Property of The City of Houston borders the property to the south. The Site is in a primarily industrial area that includes railroad yards, bulk storage terminals, metals manufacturing and processing facilities, and a wastewater treatment plant (WWTP) for the City of Houston.

Lone Star Heat Treat, a commercial metal heat treating plant, was operating on a different property prior to 1977, when they moved to the current location due to the expansion of the business. Processes performed at the plant included metal heat treating, grinding, and copper electroplating. No products or goods were manufactured on the property. Heat treating refers to the heating and cooling operations performed on metal work pieces to change their mechanical properties, metallurgical structure, or residual stress state. The facility was demolished in the 1990s. The property is currently undeveloped.

The on-site operations included a series of natural gas fired furnaces/heaters and quench baths. During the heat-treating operation, metal parts were heated to a set temperature and removed from the ovens. The parts cooled under controlled conditions and then were dipped in the quench baths to temper the metal. Lone Star Heat Treating did not manufacture or mill parts at this facility. The only operations that occurred at the facility was the heat treating of metal parts. For a very short period (less than 3 months), the facility processed parts that required cleaning prior to heat treating. According to site personnel, these parts were

dipped into a vapor degreaser prior to heat treating. This operation only took place for a couple of months before it was discontinued. It is our understanding that the vapor degreaser was located near monitoring well MW-3 on the subject property.

During the time of plant operations, a variety of wastes common to the heat-treating industry were generated and managed at the site. The table below summarizes the waste generating processes typical of commercial heat-treating operations.

- Heat Treating Furnaces could produce waste refractory material.
- Case Hardening would produce spent salt baths.
- Quenching baths produced used oil and quench liquids.
- Descaling operations produced spent abrasive media and blasting grit.
- Cleaning and masking operations produced solvents and abrasives.
- Copper plating produced copper plating wastes.

The facility discontinued operations in the late 1970s and the buildings and structures associated with the former heat-treating plant were demolished and/or removed from the property in the mid-1990s. The buildings were then removed along with the former quench/oil baths.

The property remained vacant until 2001, when the property was leased to the Metals Supply Co. This company used the property for storing structural steel and truck parking. The metal products stored on the property were loaded onto commercial flatbed trailers for transport and distribution to their customers. Metals Supply Co. vacated the property in 2009. The property was also leased to a company that retrofits shipping containers. The business modifies the containers either for mini-homes or custom needs. The operations included mostly welding and sheet metal work. Most of the subject property was used to store empty shipping containers. The shipping container company vacated the property in early 2021.

The initial environmental site investigation was performed in response to the removal of several underground storage tanks associated with the former metal heat treating plant. Underground storage tanks containing quench oils from the metal heat treating operations were excavated and removed from the property in 1994. Following the removal of the underground storage tanks, a release determination investigation (RDI) was completed. Based on elevated levels of Total Petroleum Hydrocarbons (TPH) in soil detected in the sidewalls and floor samples (**Figure C4a**) of the excavation, the underground storage tank system was issued LPST No.108524. This led to the excavation of a significant volume of soil. The soil was stockpiled onsite, sampled and profiled, then hauled offsite. The analytical data from this event are summarized in **Table E1**.

A subsequent groundwater investigation was performed to assess potential impacts to groundwater from the former underground storage tanks. The investigation included the collection of soil and groundwater samples from three groundwater monitoring wells (MW-1, MW-2 and MW-3, **Figure C4a**). The samples

were analyzed for VOCs and TPH. TPH was not identified in groundwater; however, this investigation led to the discovery of Chlorinated Hydrocarbons (CHCs) in groundwater (**Table E4**). No onsite sources or historical releases of CHCs were identified. Based on the concentration and distribution of CHCs reported in groundwater samples collected from the temporary and permanent monitoring wells at the affected property, it was concluded that the CHCs originated from a potential offsite source located to the west of the site. It should be noted that CHCs were not identified in the soil samples collected from the sidewall samples from the quench bath tank removal. Extremely low levels of CHC were identified in soil samples collected at depth. It was then determined that these soil samples were likely influenced by impacted groundwater. Given the levels of CHCs found in groundwater, elevated levels of CHCs would be expected in the actual sidewall samples or the soil transported offsite if the site was a contributing source, but that was not the case.

At the request of the Texas Commission on Environmental Quality (TCEQ), Lone Star collected and analyzed groundwater samples from the uppermost groundwater bearing unit (GWBU) at both the subject property and the adjacent offsite property to the west. Three temporary groundwater monitoring wells (TMW-1, TMW-2, and TMW-3) were advanced on the adjacent property. The analytical results obtained from groundwater samples collected during this investigation identified increasing concentrations of the contaminant of concern (COCs) in groundwater off-site to the west (**Figure C4a, Table E4**). To date, this has been the highest reported concentration of CHCs found in groundwater at or near the subject site.

An investigation was also conducted on the neighboring property to the east. Several temporary groundwater monitoring wells were installed on the adjacent property (**Figure C4a**). The results of a soil and groundwater investigation performed on the adjacent property to the east also identified the presence of CHCs in groundwater (**Table E4**). The concentration continues from west to east with the highest overall concentration on the property to the west.

Additionally, CHCs and petroleum hydrocarbons were documented in groundwater on the 5311 Clinton Drive property to the north of the subject site (Former Earl M Jorgensen Facility) which is in the TCEQ Voluntary Cleanup Program (VCP). The subject property lies among a group of sites which have CHC plumes present within the upper-most groundwater bearing unit. The presence of CHCs in groundwater on the subject property is expected given the proximity of the property to these other sites.

Groundwater sampling results reported for monitoring wells installed by adjacent property owners to the east (5306 Clinton Drive, Griffin Dewatering Southwest, LLC), and to the north, (5311 Clinton Drive, former Earle M. Jorgensen Steel Company) have also identified these halogenated hydrocarbon COCs in the uppermost GWBU at concentrations greater than their respective groundwater PCLs (**Table E4**). The groundwater monitoring data clearly define a concentration gradient from west (highest) to east (lowest). This follows the expected groundwater gradient (southeast). The highest reported concentration of TCE in 2006/2007 groundwater monitoring data occurred in TMW-2 (11.0 mg/L) and decreases at MW-2 (9.6 mg/L) with the lowest reported concentration in GW-2 (2.49 mg/L). GW-4 also reported a significantly lower concentration of TCE (1.23 mg/L). The groundwater gradient is also expected to travel from TMW-2 to MW-2 to GW-2 and GW-4. This would support the conclusion that TCE is migrating from northwest to southeast.

If the source of TCE were located on the Lone Star Heat Treat property, there should be a source in soil at the southern end of the property. Soil samples collected in the southern portion of the property from MW-2 do not support a localized source in this area of the site. In 2011, the TCEQ requested that Lone Star Heat Treat collect an additional soil sample near the location of MW-2 to help dispute allegations by Griffin Dewatering that the source of TCE in soil originated from an area near MW-2. As requested, Lone Star Heat Treat advanced a shallow soil boring (SB-1) adjacent to MW-2 (**Figure C4a**). The soil sample was analyzed for VOCs. No CHCs were detected in the soil sample collected from 2.5- to 3.5-feet bgs (**Table E1**).

InControl Technologies conducted a supplemental affected property assessment including the collection and analysis of both soil and groundwater samples. In December 2018, InControl Technologies advanced twelve (12) shallow soil borings (ICT-01 to ICT-12) to a depth of 16-feet below ground surface (**Figure C4b**). Three soil samples were collected from each of the soil borings from within three different sampling intervals; 0- to 5-feet bgs, 5 to 10-feet bgs; and 10- to 16-feet bgs. The soil samples were analyzed for a target list of CHCs. At the request of the TCEQ, InControl Technologies remobilized the site and advanced an additional sixteen (16) soil borings (ICT-13 to ICT-28) to a depth of 10-feet below ground surface (**Figure C4b**). Again, soil samples were collected from three different sampling intervals: 0- to 4-feet, 4- to 8-feet and 8- to 10-feet bgs. The soil samples were selected based on field observations and or elevated organic vapor readings. These soil samples were also analyzed for the target list of CHCs (**Table E1**).

The TCEQ requested a supplemental groundwater assessment as part of the affected property assessment. On June 30-31, 2019, InControl Technologies installed five shallow groundwater monitoring wells (**Figure C5**) to a target depth of 30-feet below ground surface and completed into the top of the lower confining unit. Monitoring wells MW-1, MW-2 and MW-3 were installed near the former locations of MW-1, MW-2 and MW-3 from the historical investigations to provide consistency in the number and to provide an extended data set for these points. Groundwater samples were collected from each of the groundwater monitoring wells and analyzed for the target list of CHCs.

InControl Technologies conducted a site-wide groundwater monitoring and sampling event on June 3, 2019. Prior to sampling the groundwater monitoring wells, the depth to water relative to the top of casing was measured to determine a groundwater gradient. The depth to groundwater ranged from 10.54- to 11.79-feet bgs. During the May 2021 sampling event, the groundwater flowed to the northwest at a gradient of 0.0005 ft/ft. The groundwater gradient is depicted on **Figure C6**.

Historical groundwater flow has been variable since 1995. The direction of groundwater flow on the subject property has fluctuated from primarily west and east directions. Since the installation of groundwater monitoring wells in 2019, the groundwater flow has been to the northwest.

Based on the TCEQ letter from May 3, 2018, InControl Technologies prepared a proposed supplemental site investigation work plan to collect supplemental data to help support the conclusion that the source of TCE in groundwater is not from the former Lone Star Heat Treat operations previously conducted on the subject property. The lack of TCE in near surface soil samples collected on the Lone Star Heat Treat property clearly supports the conclusion that there was no release on the subject property. The groundwater data collected across the subject property combined with the groundwater data collected from offsite

properties to the east and west, clearly indicate a source to the west of the subject property. To date, the highest concentration of TCE found in groundwater was collected to the west of the subject site. In addition, the groundwater samples collected from the property to the west also report PCE, while this compound was not detected in any material concentration on the subject property. Therefore, a likely source of PCE/TCE and their breakdown products in groundwater is the property to the west. Therefore, the soil data do not indicate a historical solvent release on the subject property. This conclusion combined with the groundwater concentration gradient indicate the most likely source of TCE in groundwater originated from an offsite source. At the request of the TCEQ, the subject property owner is pursuing an MSD to address the groundwater contamination to close out the issue on the subject property.

Eight (8) water well records were identified within a ½-mile radius of the proposed Municipal Setting Designation (MSD) boundary. Three of the wells are listed as plugged and abandoned. One of the wells is listed as proposed for domestic use and is located approximately 0.38-miles west of the subject property. All other wells are listed as for industrial use. Within a 5-mile radius of the proposed MSD boundary, typical completion depths are greater than 100-ft bgs with the median completion depth of 670-ft bgs.

Buffalo Bayou is located approximately 0.5-miles south and southwest of the proposed MSD boundary. Buffalo Bayou generally trends in an east-west fashion with a slight bend to the northwest in the vicinity of the subject property. Buffalo Bayou is not threatened by the groundwater plume as groundwater on the property flows to the northwest, and not toward Buffalo Bayou (**Figure C2a, C2b, and C6**).

Appendix A

Provide a legal description of the boundaries of the designated property, including metes and bounds, and a copy of the deed for the property. A professional surveyor currently registered with the Texas Board of Professional Surveying must certify that all property descriptions with metes and bounds are accurate.

The legal description plus a metes and bounds description for the designated property is included in this section. Also included is a copy of the deed for the property. The proposed Municipal Setting Designation (MSD) boundary encompasses 1.40± acres.

A legal description of the boundaries of the designated property, including metes and bounds, and a copy of the deed for the property are included in this section. The proposed Municipal Setting Designation (MSD) boundary encompasses 1.40± acres.

Figure A1 depicts the proposed MSD boundary.



LEGEND

 Property Boundary



Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

MSD Boundary Map

CLIENT: Lone Star Heat Treating		PM: JMS	
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG	
DETAILED: 12/01/2020	DESIGNED: JMS	PROJECT NO: E18035-101	FIGURE: A1

County: Harris
Project: 5212 Clinton Dr. (MSD)
Job No.: 175567
MBS No.: 17-146

FIELD NOTES FOR 1.40 ACRES

Being a tract containing 1.40 acres of land located in the Harris and Wilson Two League Grant, Abstract No. 32, City of Houston, Harris County, Texas. Said 1.40 acres being those two (2) tracts of land described in Deed of Trust recorded under Harris County Clerk's File (H.C.C.F.) No. B633613. Said 1.40 acres being more particularly described by metes and bounds as follows:

NOTE: BEARINGS ARE REFERENCED TO THE SOUTHWEST RIGHT-OF-WAY (R.O.W.) LINE OF CLINTON DRIVE (WIDTH VARIES) AS DESCRIBED IN THAT CERTAIN DEED RECORDED IN THE NAME OF DH2OING ENTERPRISES, LTD. UNDER H.C.C.F. NO. Y327898.

BEGINNING at the common north corner between said 1.40 acres and said DH2OING Enterprises, Ltd. tract and being on said southwest R.O.W. line of Clinton Drive;

THENCE, with the common line between said 1.40 acres and said DH2OING Enterprises, Ltd. tract, South 00 degrees 02 minutes 30 second East, a distance of 688.68 feet to the southeast corner of said 1.40 acres and northeast corner of a call 24.55 acre tract of land recorded in the name of City of Houston in Volume 348, Page 363 of the Harris County Deed Records (H.C.D.R.);

THENCE, with the common line between said 1.40 acres and said 24.55 acres, West, a distance of 105.65 feet to the southwest corner of said 1.40 acres and southeast corner of a tract of land styled "Tract Two" (in Exhibit "A") recorded in the name of Emanon Facilities, Ltd. under H.C.C.F. No. X137682;

THENCE, with the west line of said 1.40 acres and east line of said "Tract Two" and a tract of land styled "Tract One" (in Exhibit "A") recorded under said H.C.C.F. No. X137682, North 00 degrees 48 minutes 59 seconds East, a distance of 427.34 feet to the lower northwest corner of said 1.40 acres, the lower northeast corner of said "Tract One" and being on the south line of a call 58,980 square feet tract of land (in Exhibit "B") recorded under said H.C.C.F. No. X137682;

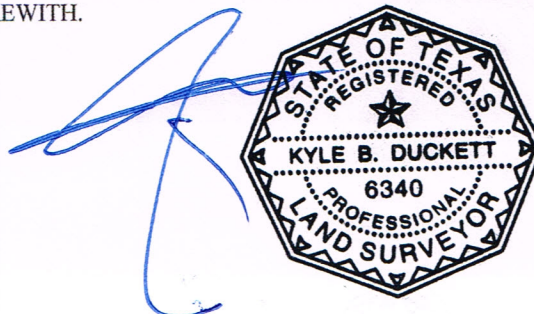
THENCE, with the common lines between said 1.40 acres and said 58,980 square feet, the following two (2) courses:

- 1.) East, a distance of 35.85 feet;
- 2.) North 00 degrees 02 minutes 30 seconds West, a distance of 283.00 feet to the upper northwest corner of said 1.40 acres, the northeast corner of said 58,980 square feet and being on the aforesaid southwest R.O.W line of Clinton Drive;

THENCE, with said R.O.W., South 71 degrees 10 minutes 30 seconds East, a distance of 67.00 feet to the **POINT OF BEGINNING** and containing 1.40 acres of land, more or less.

THIS DESCRIPTION WAS PREPARED BASED ON MAPPING THE DEEDS AS DESCRIBED HEREIN; DOES NOT REFLECT THE RESULTS OF AN ON THE GROUND SURVEY; AND IS NOT TO BE USED TO CONVEY OR ESTABLISH INTERESTS IN REAL PROPERTY. SEE MUNICIPAL SETTING DESIGNATION BOUNDARY EXHIBIT PREPARED OF EVEN DATE HERewith.

GBI Partners
TBPELS Firm # 10130300
Ph: 281.499.4539
April 13, 2021



CLINTON DRIVE

(R.O.W. WIDTH VARIES)

S71°10'30"E
67.00'

P.O.B.

CALL 58,980 SQ.FT.
(EXHIBIT "B")
EMANON
FACILITIES, LTD.
H.C.C.F. NO.
X137682

N00°02'30"W 283.00'

EAST 35.85'

HARRIS & WILSON
TWO LEAGUE GRANT,
A-32**1.40
ACRES**(EXHIBIT "A")
EMANON FACILITIES, LTD.
H.C.C.F. NO. X137682

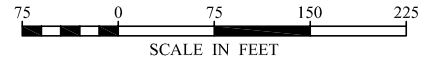
N00°48'59"E 427.34'

CALL 55,250
SQ.FT.
("TRACT ONE")
H.C.C.F. NO.
B633613

S00°02'30"E 688.68'

DH20ING
ENTERPRISES, LTD.
H.C.C.F. NO.
Y327898("TRACT TWO")
H.C.C.F. NO.
B633613

WEST 105.65'

CALL 24.55 ACRES
CITY OF HOUSTON
VOL. 348, PG. 363 H.C.D.R.**LEGEND**

H.C.C.F. HARRIS COUNTY CLERKS FILE
H.C.D.R. HARRIS COUNTY DEED RECORDS
PG. PAGE
P.O.B. POINT OF BEGINNING
R.O.W. RIGHT-OF-WAY
VOL. VOLUME

NOTES:

- 1.) ALL BOUNDARY INFORMATION IS SHOWN BASED ON MAPPING THE DEEDS OF RECORD FOR THE SUBJECT 1.40 ACRE TRACT AND ADJOINING TRACTS, AS DESCRIBED HEREIN; DOES NOT REFLECT THE RESULTS OF AN ON THE GROUND SURVEY; AND IS NOT TO BE USED TO CONVEY OR ESTABLISH INTERESTS IN REAL PROPERTY.
- 2.) EXCEPT AS SHOWN, ALL IMPROVEMENTS, EASEMENTS, BUILDING LINES, RESTRICTIONS AND RIGHTS-OF-WAY HAVE BEEN INTENTIONALLY OMITTED FROM THIS EXHIBIT PER REQUEST OF THE CLIENT.
- 3.) SEE SEPARATE METES AND BOUNDS PREPARED OF EVEN DATE HEREWITH.

ADDRESS:

5212 CLINTON DRIVE
HOUSTON, TEXAS 77020

MUNICIPAL SETTING DESIGNATION BOUNDARY EXHIBIT

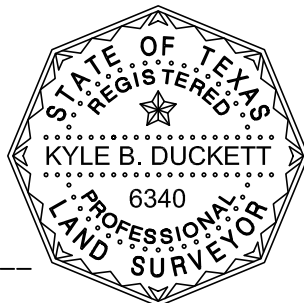
1.40 ACRES

BEING THOSE TWO (2) TRACTS OF LAND
DESCRIBED IN DEED OF TRUST
RECORDED UNDER HARRIS COUNTY
CLERK'S FILE NO. B633613

LOCATED IN THE
HARRIS & WILSON TWO
LEAGUE GRANT, A-32
CITY OF HOUSTON
HARRIS COUNTY, TEXAS

I CERTIFY THAT THIS PLAT REPRESENTS THE BOUNDARY OF A PROPOSED MUNICIPAL SETTING DESIGNATION TRACT OF LAND AS DESCRIBED HEREIN BASED ON RECORD BOUNDARY INFORMATION RECORDED UNDER H.C.C.F. NOS. B633613, X137682 & Y327898.

GBI PARTNERS



KYLE B. DUCKETT
REGISTERED PROFESSIONAL LAND SURVEYOR
TEXAS REGISTRATION NO. 6340

**GBI PARTNERS****LAND SURVEYING CONSULTANTS**

4724 VISTA ROAD • PASADENA, TX 77505

PHONE: 281-499-4539 • GBIsurvey@GBIsurvey.com

TBPELS FIRM #10130300 • www.GBIsurvey.com

SCALE: 1"= 150'

JOB NO. 215532

DATE: 04/13/2021

CREW CHIEF: N/A

FIELD BOOK: N/A

DWG.: 21-137EX

B633613

Rev. June '58--1M

JAN-29-63

152670

B633613

B PD

6.55

THE STATE OF TEXAS

COUNTY OF HARRIS

KNOW ALL MEN BY THESE PRESENTS:

MORTGAGE RECORDS

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THAT LONE STAR HEAT TREATING CORPORATION, a corporation acting herein by and through its duly authorized officers, of the County of Harris and State of Texas, hereinafter called Grantors (whether one or or more), for purpose of securing the indebtedness hereinafter mentioned, and in consideration of the sum of TEN DOLLARS, paid by the Trustee hereinafter named, the receipt whereof is hereby acknowledged, and of the further consideration, uses, purposes and trusts hereinafter set forth and declared, do Grant, Sell, and Convey unto

ARTHUR E. HOEHN

as Trustee,

and also to the Substitute Trustee, as hereinafter provided, all of the following described real estate situated in Harris County, Texas, to-wit:

083-09-0584

FILM CODES

UNOFFICIAL

COPY

TRACT ONE:

55,250 square feet of land out of the South end of Lot 8, of the Second Tier North of Buffalo Bayou, in the Harris and Wilson Two League Grant, in the City of Houston, Harris County, Texas, and particularly described by metes and bounds as follows, to-wit:

BEGINNING on the South line of Clinton Drive at the Northeast corner of the tract of land conveyed by P. Harvey to Universal Packing & Gasket Co., by Deed dated August 18, 1944, recorded in Volume 1343, Page 275 et seq., of the Deed Records of Harris County, Texas, File No. 204,622 in the County Clerk's Office of Harris County, Texas;

THENCE South along the East line of the said Universal Packing & Gasket Co., Tract 283 feet to the Southeast corner of said tract, iron stake for corner;

THENCE West along the South line of said Universal Packing & Gasket Company Tract 35.85 feet to iron stake and concrete monument, same being the lower Northwest corner of the tract of land allotted to P. Harvey, in partition deed between Mrs. S. S. Ludtke, et al, and said P. Harvey, dated September 6, 1943, recorded in Volume 1307, Page 522 of the Deed Records of Harris County, Texas;

THENCE South along the West line of the tract allotted to said P. Harvey in the above mentioned partition deed, 365.5 feet to stake for corner;

THENCE East 105.65 feet to stake for corner;

THENCE North 14.5 feet to the Southwest corner of the tract of land conveyed by P. Harvey to Baash-Ross Tool Company by Deed dated February 5, 1945, recorded in Volume 1357, Page 299 of the Deed Records of Harris County, Texas, and continuing North along the West line of said tract conveyed by P. Harvey to Baash-Ross Tool Company by said last mentioned deed 611.54 feet, making this East line a total length of 626.04 feet in all, to the Northeast corner of this tract, on the South line of Clinton Drive, same being the Northwest corner of the tract conveyed by P. Harvey to said Baash-Ross Tool Company by Deed recorded in Volume 1357, Page 289 aforesaid;

THENCE North 71 degrees 10 minutes West along the South line of Clinton Drive, 67 feet to the Northeast corner of the Universal Gasket & Packing Company Tract, and Place of Beginning, containing 55,250 feet of land.

TRACT TWO:

Beginning at a point described as the Southwest corner of the above described tract of land and being a point 365.5 feet from the iron stake and concrete monument being the lower Northwest corner of the tract of land allotted to P. Harvey, in partition deed between Mrs. S. S. Ludtke, et al, and said P. Harvey, dated September 6, 1943, recorded in Volume 1307, Page 522 of the Deed Records of Harris County, Texas, said Southwest corner of the above described tract of land being the beginning of Tract Two;

THENCE South along a continuation of the West line of the tract allotted to said P. Harvey in the above mentioned partition deed, 64 feet to a 3/4 inch iron post for the Southwest corner of Tract Two;

THENCE East 105.65 feet to a 3/4 inch iron post stake for corner;

THENCE North 64 feet to the Southeast corner of Tract One hereinabove described, being a corner 14.5 feet South of a 3/4 inch iron pipe denoting the Southwest corner of the tract of land conveyed by P. Harvey to Baash-Ross Tool Company by Deed dated February 5, 1945, recorded in Volume 1357, Page 299 of the Deed Records of Harris County, Texas;

THENCE West 105.65 feet to the Place of Beginning.

1963 JAN 29 AM 10 50

FILED
HARRIS COUNTY, TEXAS
CLERK

MORTGAGE RECORD

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FILM CODE

083-09-0536

TO HAVE AND TO HOLD the above described property, together with all rights, hereditaments and appurtenances thereto belonging, including but not limited to all heating, plumbing, refrigeration equipment, venetian blinds, air conditioning, lighting fixtures, attic or ventilating fans and equipment now or hereafter connected with or attached to the property and premises, all of which shall be deemed and considered a part of the realty, unto the said Trustee and unto his Substitutes, successors and assigns forever, hereby covenanting and agreeing to FOREVER WARRANT AND DEFEND the premises aforesaid, and every part thereof, unto the said Trustee, hereinbefore named, and to the Substitute Trustee, and to the assigns of any Trustee hereunder, against all persons whomsoever lawfully claiming or to claim the same or any part thereof.

This conveyance, however, is made in trust to secure the payment of one certain promissory note of even date herewith, executed by the Grantors, for the sum of FIFTY-FIVE THOUSAND AND NO/100-----
(\$ 55,000.00) DOLLARS, payable to the order of

LOCKWOOD NATIONAL BANK OF HOUSTON

hereinafter called Beneficiary (whether one or more), in the City of Houston, State of Texas, which note is due and payable as follows:

Said note shall become due and payable in monthly installments of Seven Hundred Fifty and No/100 Dollars (\$750.00) each, including principal and interest, the first one of said installments being due and payable on or before March 1, 1963, and a like installment being due and payable on or before the same day of each and every month thereafter until said note is fully and finally paid, both principal and interest; as said payments are made, they are to be applied first to the payment of all interest accrued, and the balance to the reduction of the principal;

and said note bearing interest as therein provided, unpaid principal and interest to bear 10% interest per annum from maturity until paid, and containing the usual provision for 10% attorney's fees.

And this conveyance is made for the security and enforcement of the payment of said indebtedness and also to secure the payment of any and all other sums of money which may be advanced for or loaned to Grantors by the Beneficiary, his heirs or assigns.

Grantors covenant and agree as follows:

1. To make prompt payment of the aforementioned indebtedness, both principal and interest, as the same shall become due and payable.
2. To pay, as the same shall become due and payable, all taxes and special assessments, now chargeable to or assessed against or hereafter chargeable to or assessed against the above described property.
3. At all times to keep the improvements on said property insured against fire, windstorm, hurricane and hail, in favor of the Beneficiary (who shall hold the policies of insurance), in the full insurable value of such improvements in insurance companies acceptable to the Beneficiary.
4. Grantors shall keep said improvements in good condition and repair, and they shall not permit waste on said property or do or permit to be done any act or thing that would tend to depreciate the value of the above described property.
5. Grantors shall in no manner impair any lien securing the aforementioned indebtedness.
6. Grantors shall pay, as the same shall become due and payable, all taxes that shall be chargeable to or assessed against this mortgage and the note or notes hereby secured, which tax payments on this mortgage and the note or notes hereby secured, together with the interest payments, are not to exceed 10% per annum on the principal amount of the indebtedness hereby secured.
7. That if the premises covered hereby or any part thereof shall be condemned and taken for public use under the power of eminent domain, the Beneficiary or other holder of the note secured hereby shall have the right to demand that all damages awarded for the taking of or injury to said premises shall be paid to him to the amount then unpaid on the indebtedness secured hereby and may be applied upon the payment or payments last payable thereunder.
8. If the hereinabove described land, or any part thereof, is now or shall become subject to any lien or liens superior to the lien of this Deed of Trust, Grantors covenant and agree to discharge the obligations secured by such prior lien or liens strictly in accordance with the terms thereof, and to comply strictly with the terms of all instruments by which such liens were created, extended or renewed. In the event of a default in the performance of any of the terms and conditions of such prior note and lien, the same continuing for a period of thirty days, the Beneficiary, or other holder of the note secured hereby, may at his option: (1) mature the entire unpaid balance of principal and interest owing on the note hereby secured, authorizing foreclosure hereunder; or (2) correct such default, whereupon any sums of money paid thereon shall become payable by Grantors upon demand of the Beneficiary, or other holder of said note, shall bear interest at the rate of eight per cent (8%) per annum from date of advance by Beneficiary, or other holder of said note, until paid, and shall be secured by this Deed of Trust; and if not paid on demand, Grantors expressly authorize foreclosure hereunder, the same as if default occurred under any other provision hereof. Failure to exercise such options on any such default or breach shall not waive the right of Beneficiary, or other holder of said note, to exercise them or either of them upon the occurrence of any subsequent default.

Now, should Grantors perform all of the covenants herein contained, and make prompt payment of said indebtedness, both principal and interest, as the same shall become due and payable, then this conveyance shall become null and void and of no further force and effect, and the lien created hereby shall be released by the Beneficiary, or other holder of the indebtedness, at the expense of Grantors. But should Grantors make default in the punctual payment of said indebtedness or any part thereof, principal or interest, as the same shall become due and payable, or should Grantors breach any of the covenants herein contained to be performed by Grantors, then and in any of such events the entire indebtedness hereby secured with all interest and all other sums hereby secured may, at the option of the Beneficiary, or other holder thereof, be immediately matured and become due and payable, without demand or notice of any character, and it shall thereupon, or at any time thereafter, be the duty of the Trustee, and of his successor or substitute as hereinafter provided, on the request of the Beneficiary, or other holder of the indebtedness hereby secured or any part thereof, (which request is hereby presumed), to enforce this Trust and make sale of said real property as provided in Article 3810, Revised Statutes of Texas for 1925, after notice as provided in said article (but without any other notice than is required by said Article 3810) selling all the property above conveyed as an entirety or in parcels, as the Trustee acting may elect, and make due conveyance to the purchaser or purchasers, with general warranty, binding the Grantors, their heirs and assigns; and out of the money arising from such sale, the Trustee acting shall pay, first, all the expenses of advertising, sale and conveyance, including a commission of 5% to himself, and then to the Beneficiary, or any other holder thereof, the full amount of principal, accrued interest and attorney's fees due and unpaid on said indebtedness as hereinabove set out, rendering the balance of the purchase money, if any, to the Grantors, their heirs or assigns; and said sale shall forever be a perpetual bar against Grantors, their heirs and assigns. And the Beneficiary, or other holder of the indebtedness, shall have the right to purchase at such sale, being the highest bidder.

It is expressly understood and agreed that the recitals in the conveyance to the purchaser at said sale shall be full evidence of the truth of the matters therein stated, and all prerequisites to said sale shall be conclusively presumed to have been performed, and such sale and conveyance shall be conclusive against Grantors, their heirs and assigns whether such prerequisites shall have been performed or shall not have been performed.

In case of the absence, death, inability, refusal or failure of the Trustee herein named to act, a successor and substitute may be named, constituted and appointed by the Beneficiary herein or the president, or other officer performing his functions, of any corporation holding said indebtedness or any part thereof, or other holder of said indebtedness, or any part thereof, without other formality than an appointment and designation in writing, and this conveyance shall vest in him, as Trustee, the estate and title in all said premises, and he shall thereupon hold, possess and execute all the title, rights, powers and duties herein conferred on said Trustee herein named; and such right to appoint a successor or substitute Trustee shall exist as often and whenever from any of said causes any Trustee, original or substitute, cannot or will not act. The exercise or attempted exercise of the power of sale contained herein shall not exhaust said power of sale and shall not prevent any subsequent exercise thereof.

It is further expressly stipulated and understood that the lien hereby created shall take precedence over and be a prior lien to any other lien of any character, whether materialman's or mechanic's lien, hereafter incurred on the above described property.

It is further expressly stipulated and agreed that the lien of this deed of trust shall not affect, nor be affected by any other or further security taken or to be taken for the same indebtedness, or any part thereof; and Grantors hereby declare that the above described property forms no part of any property owned, used or claimed by Grantors as exempted from forced sale under the laws of the State of Texas, and disclaim and renounce all and every claim thereto under any such law or laws.

In the event of any default in payment, all rents from said property are hereby assigned to the Trustee herein or the Substitute Trustee hereinbefore provided for, who may (at the request of the Beneficiary or other holder of the indebtedness) take possession of said property and rent same for such rental as he deems proper, and all sums collected as rental, less all proper and reasonable costs and expenses of collection, shall be applied as a credit on the indebtedness hereby secured.

If any portion of said indebtedness is not secured by a valid lien or is not secured by a valid lien covering all of the hereinbefore described property, it is agreed that all payments of principal made on the note evidencing said indebtedness shall be applied first toward the complete liquidation of the unsecured portion of said indebtedness and next toward the complete liquidation of that portion of said indebtedness which is not secured by a valid lien covering all of the hereinbefore described property.

The Beneficiary, or any holder of said indebtedness, shall have the option of paying taxes and insurance premiums hereunder, and in such event the sums so expended shall be secured by lien against the above described property and be secured hereby and shall bear interest at the rate of 10% per annum from date of payment.

All moneys actually collected from fire, windstorm, hurricane and hail insurance policies covering improvements on the above described property may, at the option of the Beneficiary, be applied as a credit on the indebtedness hereby secured.

In no event shall a greater rate of interest than ten per cent (10%) per annum be charged or collected for the use of the money hereby secured, and should a greater amount be collected, it shall be construed as a mutual mistake of the parties, and the excess shall be refunded by the Beneficiary to Grantors.

It is agreed that the Beneficiary may at any time, without notice, release portions of the above described property from the lien of this deed of trust, without affecting the personal liability of any person for the payment of the full amount of said indebtedness then remaining unpaid and without affecting the lien of this deed of trust upon the remainder of the above described property.

Grantors specifically agree that after any sale under this deed of trust, they or their heirs or assigns, shall be mere tenants at sufferance of the purchaser of said property, or any part thereof, at such Trustee's sale, and that such purchaser shall be entitled to immediate possession thereof; and upon failure to surrender possession, the purchaser, as landlord, shall have the right to file an action for forcible detainer in any Justice of the Peace Court in the Precinct and County in which said property is located, which action shall lie against Grantors, their heirs and assigns, as tenants of such purchaser. This remedy is cumulative of any and all other remedies that the purchaser may have hereunder, or otherwise.

The term "Grantors" includes all grantors hereinabove named and all endorser, sureties, guarantors, or other persons now or hereafter becoming liable, primarily, secondarily, or in any manner, for the indebtedness hereby secured, or any part thereof. "Beneficiary" includes not only the beneficiary hereinabove named but all persons who may hereafter acquire the indebtedness hereby secured or any part or parts thereof. As used herein, the masculine gender shall include the feminine and neuter; the singular and plural number shall include the other unless otherwise expressly provided; and the word "person" and the words "grantors" and "beneficiary" shall include corporations, partnerships, associations and other entities or groups as well as natural persons, and the phrase "their heirs and assigns" shall also include the successors and assigns of any such corporation, partnership, association, or other entity or group. The words "grantors", "beneficiary", "trustee", and "person", whether singular or plural, shall also include the assignees, vendees, heirs, successors, and assigns of such grantor, beneficiary, trustee, or person, whether natural or artificial.

The note herein secured represents monies advanced by LOCKWOOD NATIONAL BANK OF HOUSTON at Grantor's request to take up, renew and extend the hereinafter set forth indebtedness, which said indebtedness so taken up, renewed and extended at Grantor's request, Grantor does warrant to be just, valid and unpaid; and Grantor does hereby waive any defense, offset or right of reduction that it might have to the indebtedness so taken up, renewed and extended, and agrees that LOCKWOOD NATIONAL BANK OF HOUSTON shall be subrogated to and shall have all rights, titles, liens or equities at any time held or had by the owner of said indebtedness so taken up, renewed and extended, and same are hereby extended and renewed in favor of said LOCKWOOD NATIONAL BANK OF HOUSTON:

The unpaid balance of principal and interest on that one certain Promissory Note dated March 24, 1955, executed by Grantor, payable to the order of THE SECOND NATIONAL BANK OF HOUSTON, TRUSTEE, (now known as Bank of the Southwest National Association, Houston, Trustee) for the original principal sum of Thirty Thousand and No/100 Dollars (\$30,000.00), secured by a Deed of Trust of even date therewith to HOMER E. HENDERSON, Trustee, recorded in Volume 2528, Page 251 of the Mortgage Records of Harris County, Texas, and additionally secured by Assignment of all rental and lease monies by Assignment dated April 12, 1955 and recorded in Volume 2528, Page 255 of the Mortgage Records of Harris County, Texas.

EXECUTED this the 28th day of January, A. D. 1963.

ATTEST

Secretary
STATE OF TEXAS

LONE STAR HEAT TREATING CORPORATION

By

President

COUNTY OF HARRIS

Before me, the undersigned authority, on this day personally appeared L. J. VAN DORFY, President of LONE STAR HEAT TREATING CORPORATION, a corporation,

known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that he executed the same for the purposes and consideration therein expressed, in the capacity therein stated, and as the act and deed of said corporation.

Given under my hand and seal of office, this

28th day of January, A. D. 1963.

Notary Public in and for

Harris

County, Texas

W. L. TAYLOR

Notary Public in and for Harris County, Texas

STATE OF TEXAS

COUNTY OF

Before me, the undersigned authority, on this day personally appeared and

wife of the said, personally known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged to me that they executed the same for the purposes and consideration therein expressed. And the said

having been examined by me privily and apart from her husband, and having the same fully explained to her, she, the said acknowledged such instrument to be her act and deed, and declared that she had willingly signed the same for the purposes and consideration therein expressed, and that she did not wish to retract it.

Given under my hand and seal of office, this

day of

Notary Public in and for

County, Texas

STATE OF TEXAS
COUNTY OF HARRIS

I hereby certify that this instrument was FILED on the
date and at the time stamped hereon by me; and was duly
RECORDED, in the Volume and Page of the named RECORDS
of Harris County, Texas, as stamped hereon by me, on

JAN 29 1963



Peter J. ...
COUNTY CLERK
HARRIS COUNTY, TEXAS

COPY

UNOFFICIAL

DEED OF TRUST

LONE STAR HEATREATING CORPORATION

TO

ARTHUR F. HOEHN

TRUSTEE FOR

LOCKWOOD NATIONAL BANK OF HOUSTON

~~STEEGER, DOHONEY, JONES & CALDWELL~~

~~ATTORNEYS AT LAW~~

~~HOUSTON TRUST BUILDING~~

~~HOUSTON 2, TEXAS~~

Mr. Bauer

P. O. Box 1415

Houston 1, Texas

Return to

CR#102560

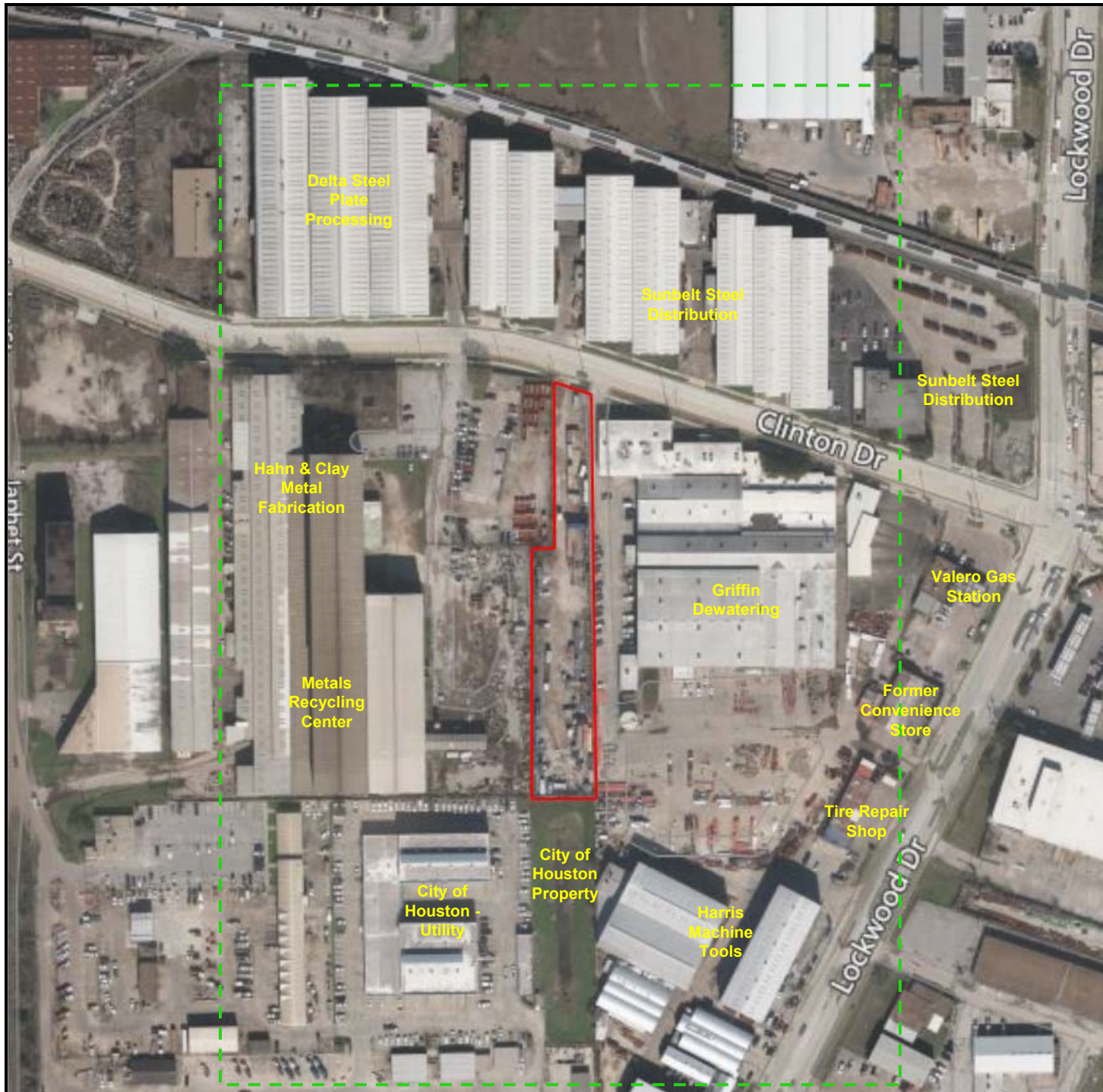
Appendix B

A description of the current use, and, to the extent known, the anticipated use(s), of the designated property and properties within 500 feet of the boundary of the designated property.

The proposed MSD area is approximately 1.40± acres of land located east of downtown Houston, Harris County, Texas. The affected property is in a commercial and industrial land use area of Houston (**Figure B1**). **Figure B1** provides a description of the surrounding land use within 500-feet of the site.

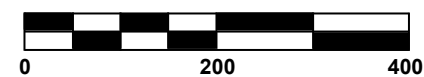
The tract is currently undeveloped and unoccupied. The City of Houston owns property directly south of the subject property. The surrounding land use is described as:

- North – bounded by Clinton Drive followed by Sunbelt Steel Distribution;
- East – bounded by an industrial development (former Griffin Dewatering) followed by a Valero Gas Station;
- South – bounded by a City of Houston wastewater treatment plant;
- West – bounded by Hahn & Clay Metal Fabrication and metals recycling center.



LEGEND

- Property Boundary
- 500-Foot Radius



Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

Surrounding Property Use Map

CLIENT: Lone Star Heat Treating		PM: JMS	
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG	
DETAILED: 12/01/2020	DESIGNED: JMS	PROJECT NO: E18035-101	FIGURE: B1

Appendix C

A site map showing:

- a. The location of the designated property.
- b. The topography of the designated property as indicated on publicly available sources, which must note the watershed including the nearest surface water body and whether the designated property is located in a floodplain or floodway, as those terms are defined in Chapter 19 of the Code of Ordinances.
- c. The detected area of groundwater contamination.
- d. The location of all soil sampling locations and all groundwater monitoring wells.
- e. Groundwater gradients, to the extent known, and direction of groundwater flow.
- f. The ingestion protective concentration level exceedance zone for each contaminant of concern, to the extent known.
- g. Depth to groundwater for each affected zone.

The following is a listing of figures included in **Appendix C**.

Figure C1 – Topographic Map

Figure C2a – Watershed Map

Figure C2b – FEMA Flood Plain Map

Figure C3a – TCE Concentrations in Groundwater – May 2021

Figure C3b – Cis-1,2-DCE Concentrations in Groundwater – May 2021

Figure C3c – Trans-1,2-DCE Concentrations in Groundwater – May 2021

Figure C3d – Vinyl Chloride Concentrations in Groundwater – May 2021

Figure C3e – 1,1-DCE Concentrations in Groundwater – May 2021

Figure C3f – Combined PCLE Zone in Groundwater – May 2021

Figure C4a – Historical Sampling Location Map

Figure C4b – Soil Boring Location Map

Figure C5 – Groundwater Monitoring Well Location Map

Figure C6 – Groundwater Gradient Map – May 2021

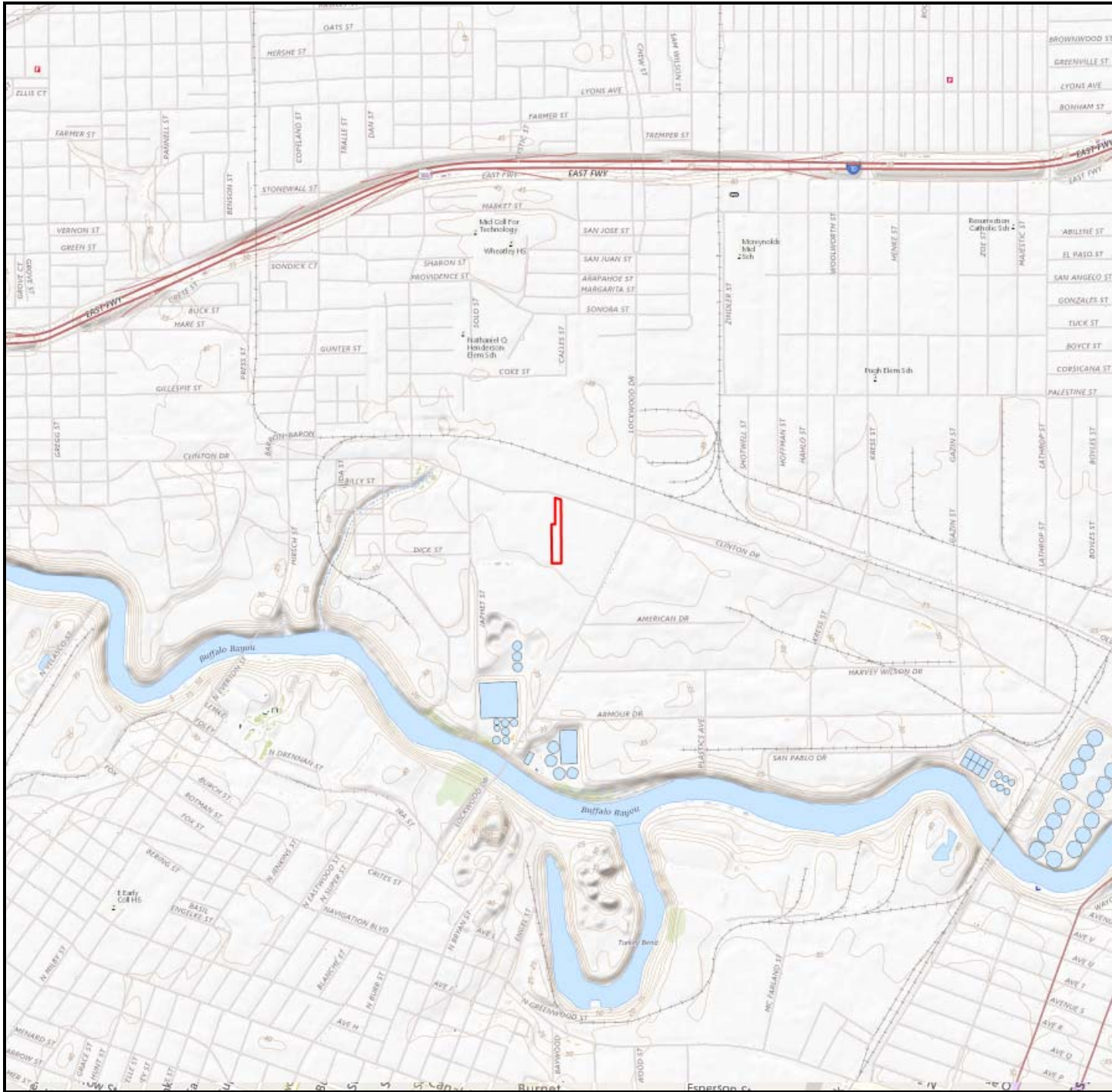
The Site is located in Houston, Texas at approximately 37-feet above mean sea level (MSL) (**Figure C1**). The Site is located within the Buffalo Bayou Watershed and is located outside the 0.2% annual chance (500 year) floodplain (**Figure C2a and C2b**).

The primary chemicals of concern (COCs) are chlorinated hydrocarbons trichloroethene (TCE), 1,1-dichloroethane (1,1-DCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), and vinyl chloride (VC) (**Figures C3a through C3e**). The combined groundwater PCLE zone for the Site can be seen on **Figure C3f**.

Figure C3a through **Figure C3e** depicts the groundwater PCLE zones during the most recent sampling event in May 2021. The combined groundwater PCLE zone for the Site from the May 2021 sampling event can be seen on **Figure C3f**. **Figure C4a and C4b** and **Figure C5** depict the locations of the soil and groundwater samples, respectively. The groundwater gradient generally flows to the northwest at 0.005 ft/ft (**Figure C6**).

Historical groundwater flow has been variable since 1995. The direction of groundwater flow on the subject property has fluctuated from primarily west and east directions. Since the installation of groundwater monitoring wells in 2019, the groundwater flow has been to the northwest.

The first groundwater bearing unit is comprised of sand and is encountered at a depth of approximately 22-feet below ground surface (ft bgs) during drilling. The base of the first groundwater bearing unit is encountered at a depth of approximately 30-ft bgs and is underlain by a stiff sandy clay. The average static depth to groundwater in the monitoring wells is 10- to 11-ft bgs.



LEGEND

 Property Boundary



Approximate Scale (miles)

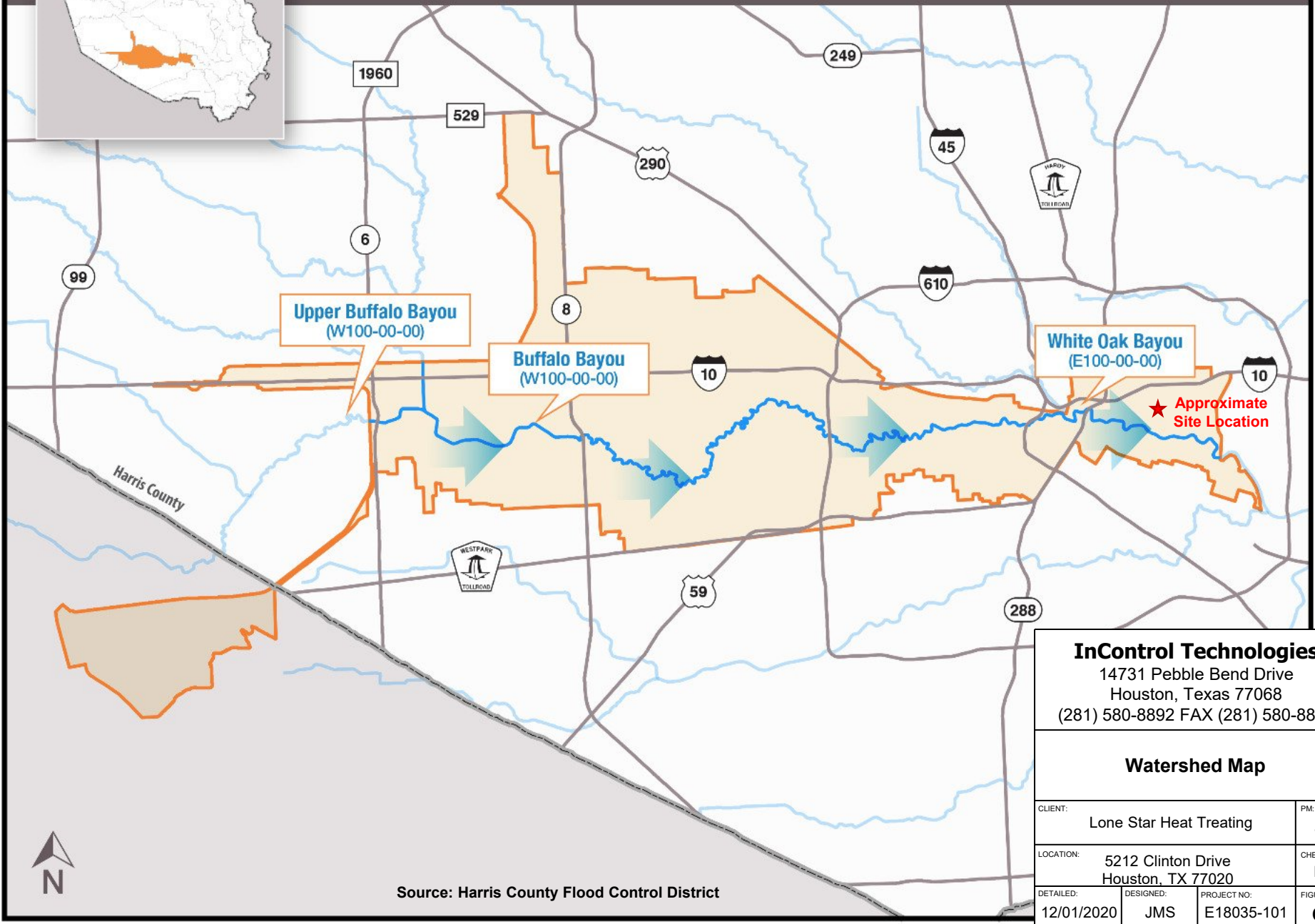
InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

Topographic Map

CLIENT: Lone Star Heat Treating		PM: JMS	
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG	
DETAILED: 12/01/2020	DESIGNED: JMS	PROJECT NO: E18035-101	FIGURE: C1

BUFFALO BAYOU WATERSHED

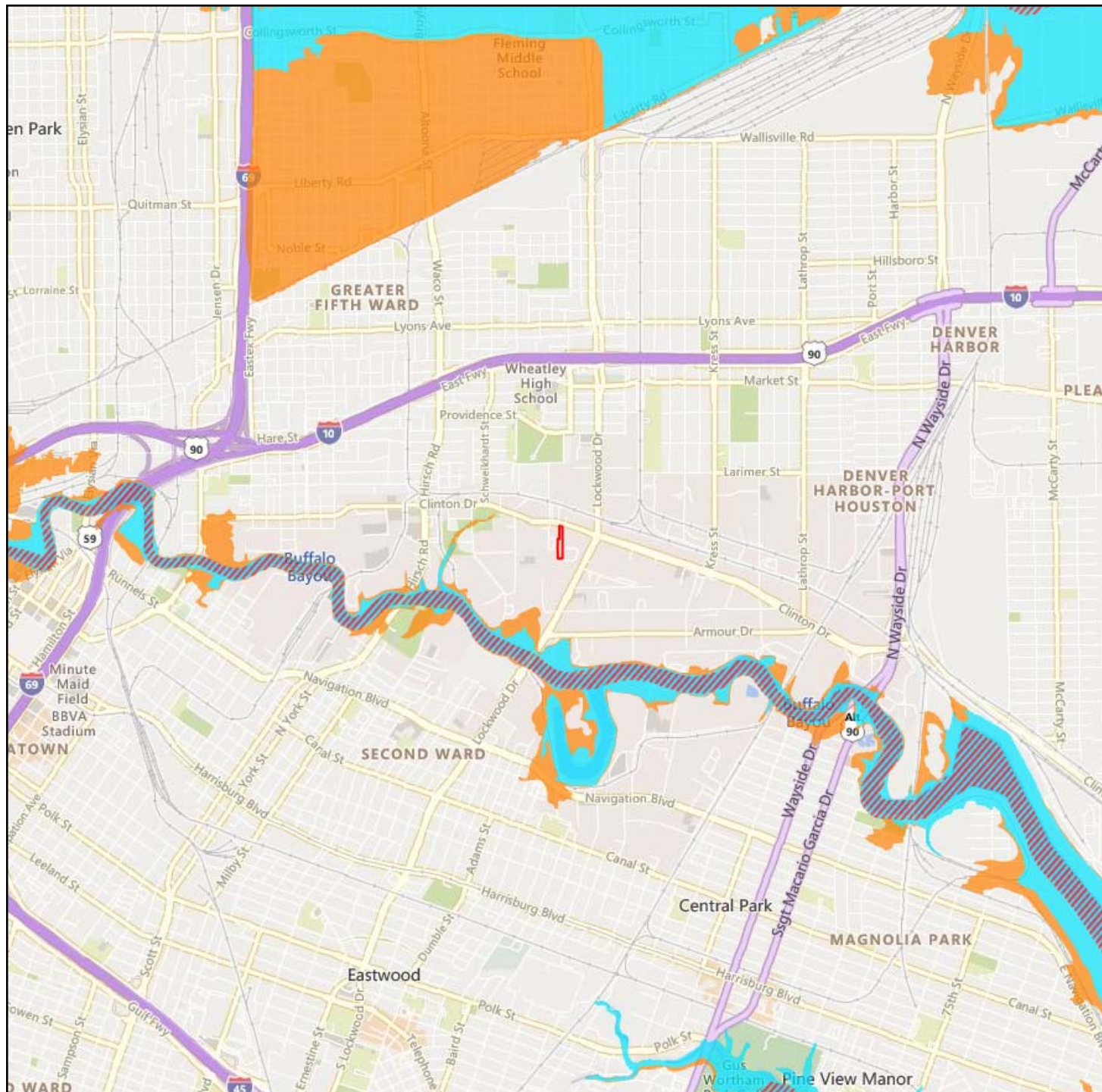


InControl Technologies

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Watershed Map

CLIENT:	Lone Star Heat Treating	PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020	CHECKED:	LMG
DETAILED:	DESIGNED:	PROJECT NO:	FIGURE:
12/01/2020	JMS	E18035-101	C2a



LEGEND

Property Boundary

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Regulatory Floodway
- Special Floodway
- Area of Undetermined Flood Hazard
- 0.2% Annual Chance Flood Hazard
- Future Conditions 1% Annual Chance Flood Hazard
- Area with Reduced Risk Due to Levee



Approximate Scale (miles)

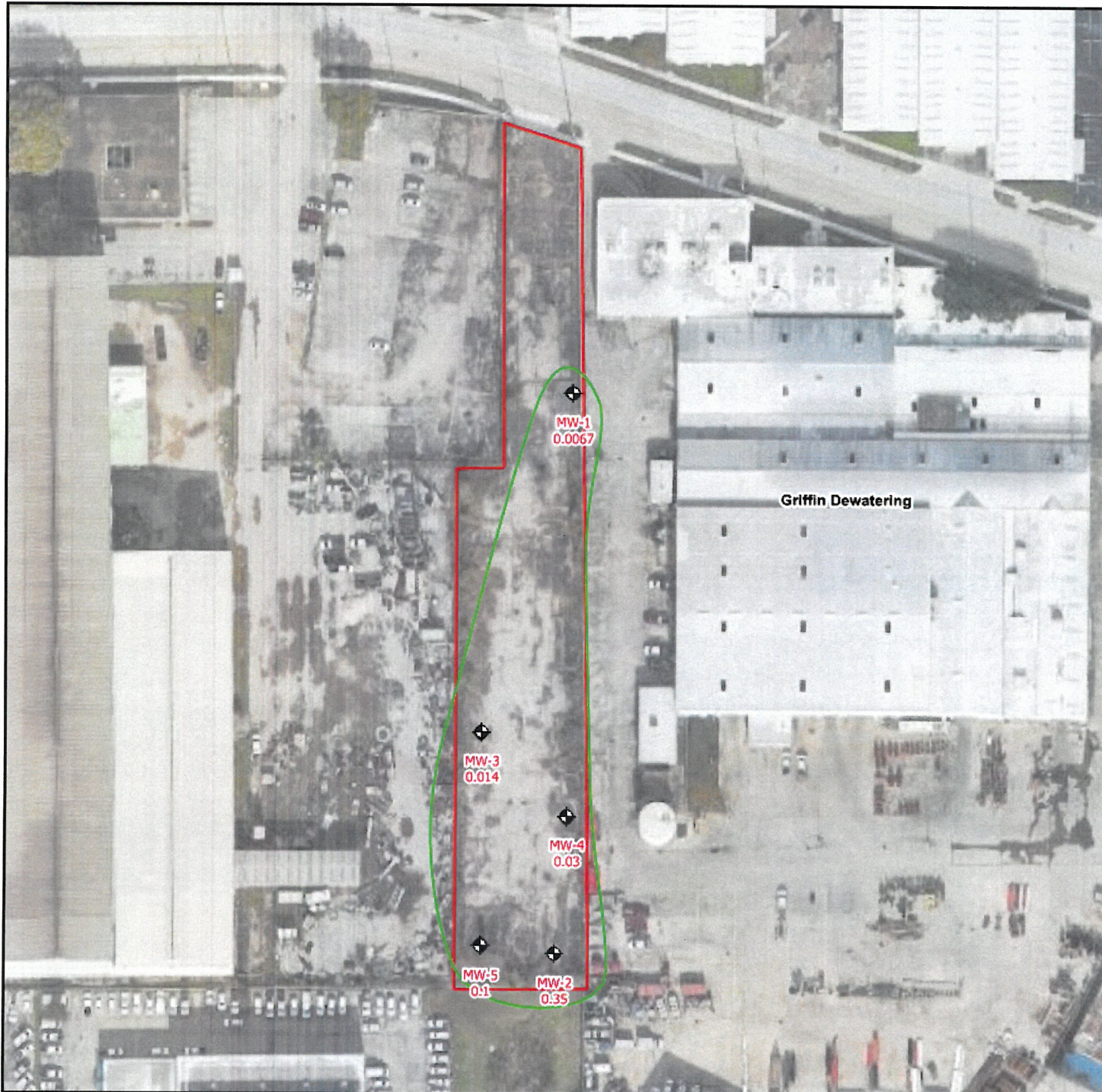
InControl Technologies

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Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

FEMA Floodplain Map

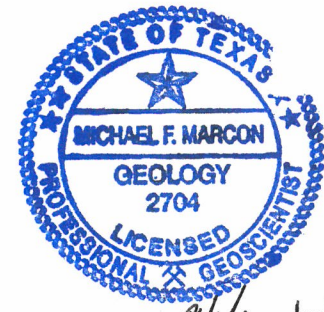
FIRM Panel No. 48201C0690N

CLIENT:	Lone Star Heat Treating	PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020	CHECKED:	LMG
DETAILED:	DESIGNED:	PROJECT NO:	FIGURE:
12/01/2020	JMS	E18035-101	C2b



LEGEND

- Property Boundary
- Monitoring Well
- PCLE Zone



N *5/17/2021*



0 120 240

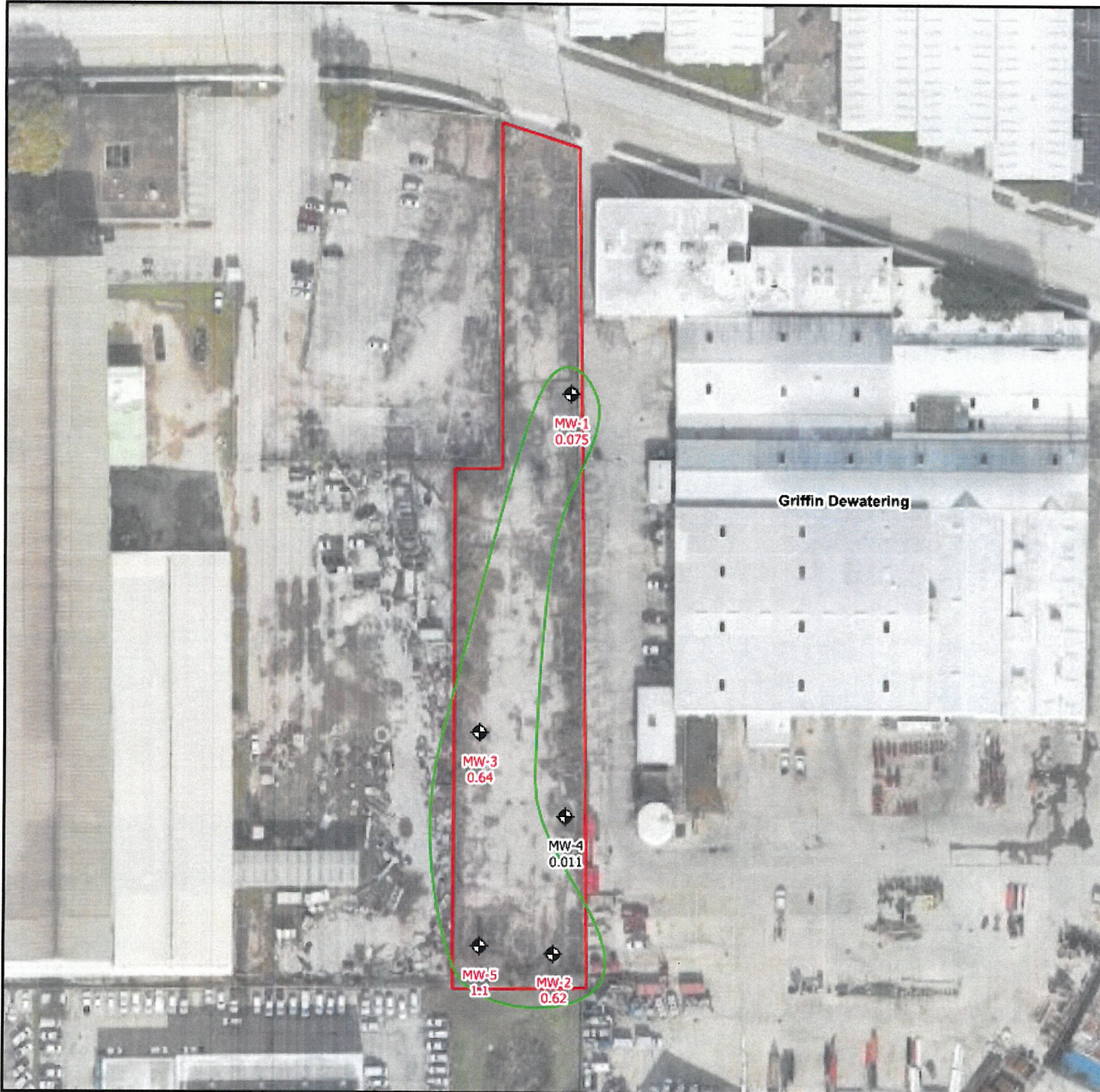
Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

TCE Concentrations in Groundwater – May 2021

CLIENT: Lone Star Heat Treating		PM: JMS
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG
DETAILED: 05/14/2021	DESIGNED: JMS	PROJECT NO: E18035-101
		FIGURE: C3a



LEGEND

- Property Boundary
- Monitoring Well
- PCLE Zone



MF 5/17/2021
N



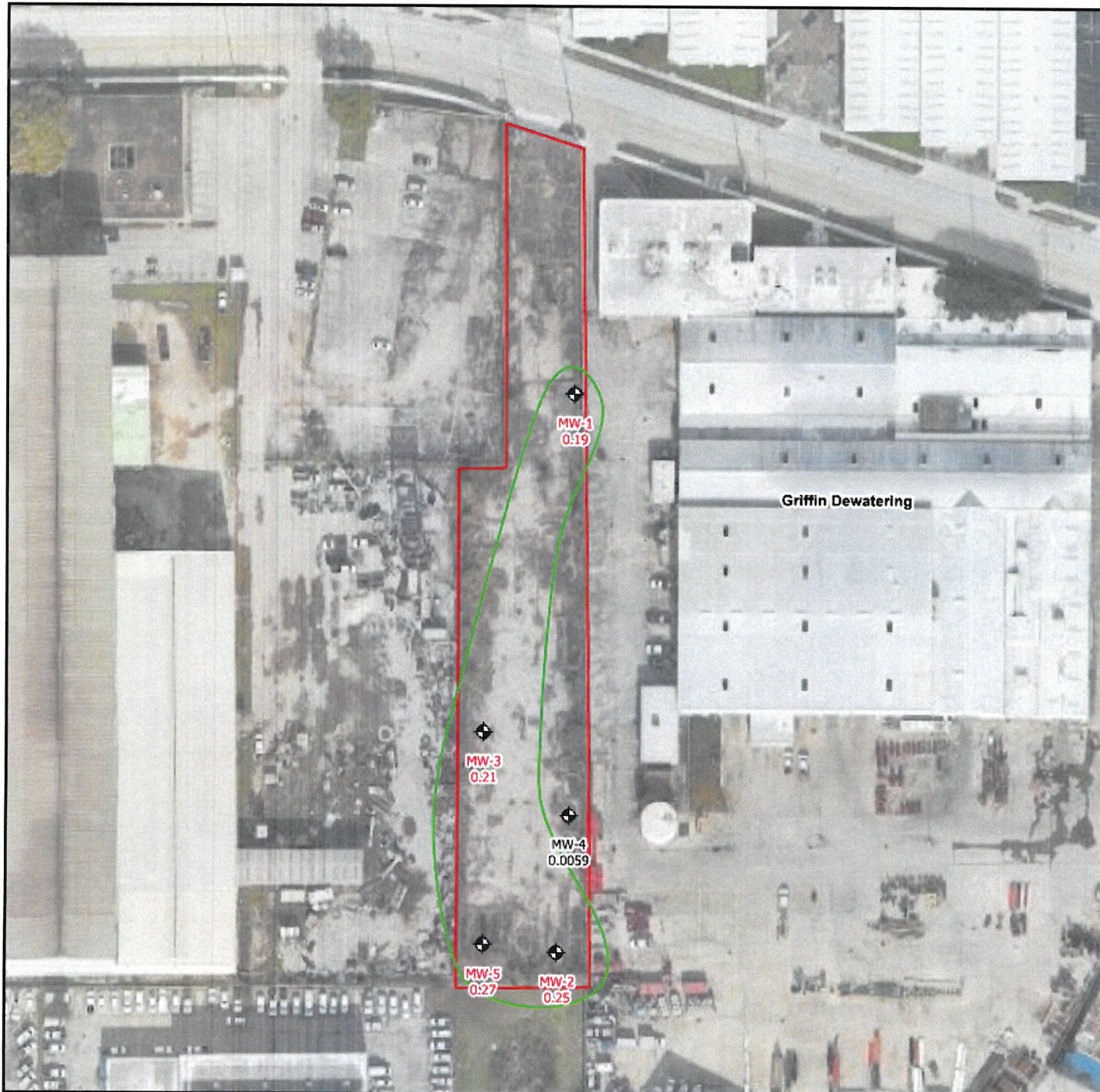
Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

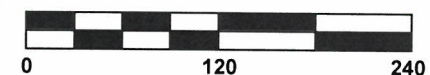
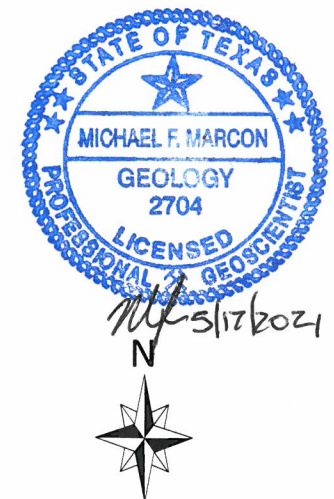
Cis-1,2-DCE Concentrations in Groundwater – May 2021

CLIENT:	Lone Star Heat Treating	PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020	CHECKED:	LMG
DETAILED:	DESIGNED:	PROJECT NO:	FIGURE:
05/14/2021	JMS	E18035-101	C3b



LEGEND

- Property Boundary
- Monitoring Well
- PCLE Zone



Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

Trans-1,2-DCE Concentrations in Groundwater – May 2021

CLIENT:	Lone Star Heat Treating		PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020		CHECKED:	LMG
DETAILED:	05/14/2021	DESIGNED:	JMS	PROJECT NO:
				E18035-101
				FIGURE:
				C3c



LEGEND

- Property Boundary
- Monitoring Well
- PCLE Zone



Signature 5/17/2021

N



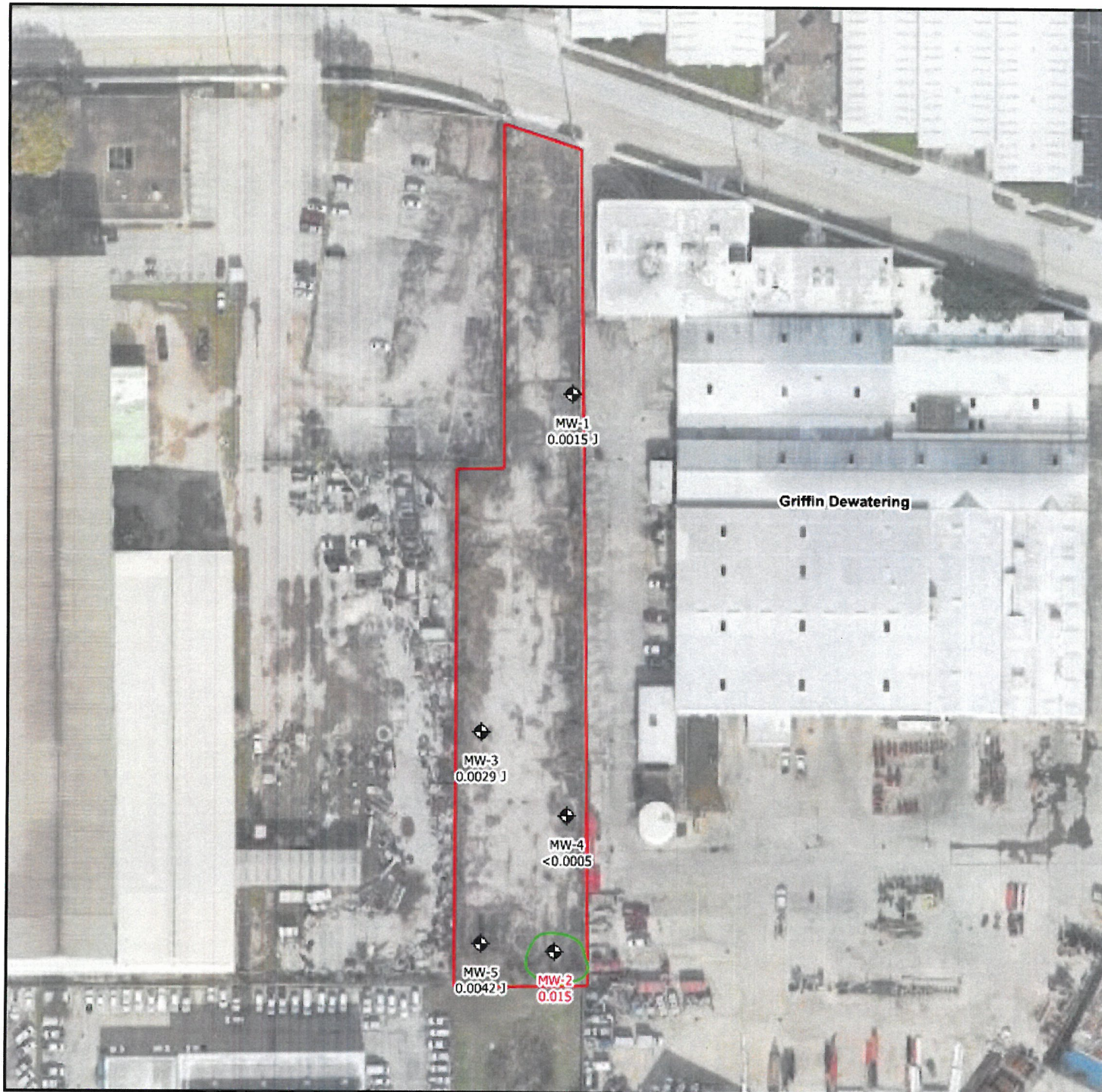
Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
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Vinyl Chloride Concentrations in Groundwater – May 2021

CLIENT:	Lone Star Heat Treating		PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020		CHECKED:	LMG
DETAILED:	05/14/2021	DESIGNED:	JMS	PROJECT NO:
				E18035-101
				FIGURE:
				C3d



LEGEND

- Property Boundary
- Monitoring Well
- PCLE Zone



MF 5/17/2021
N

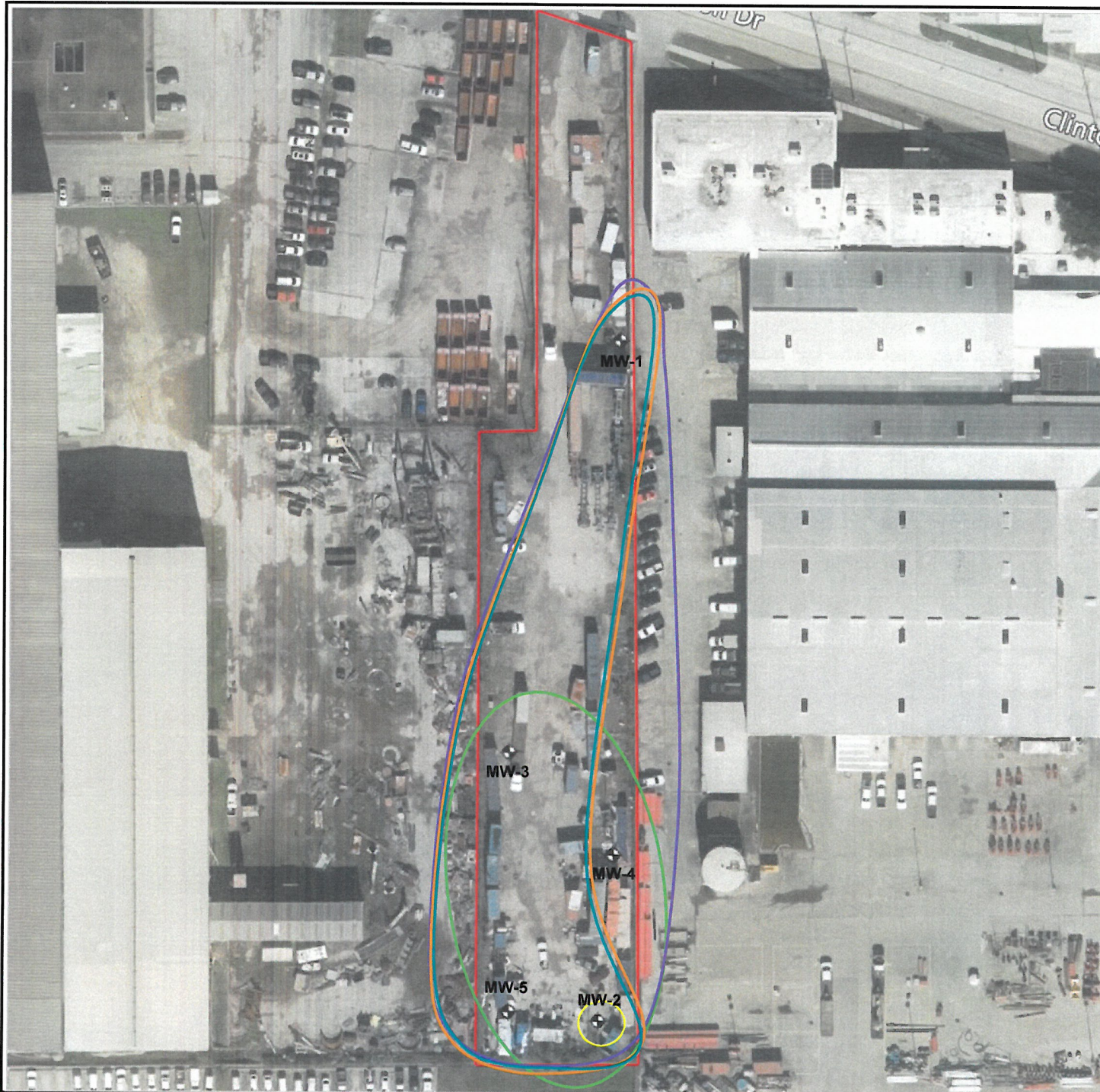


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14731 Pebble Bend Drive
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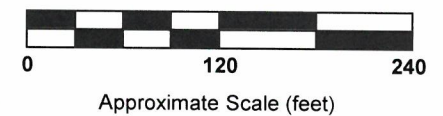
1,1-DCE Concentrations in Groundwater – May 2021

CLIENT: Lone Star Heat Treating		PM: JMS
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG
DETAILED: 05/14/2021	DESIGNED: JMS	PROJECT NO: E18035-101
		FIGURE: C3e



LEGEND

- Property Boundary
- Monitoring Well
- PCLE Zone – TCE
- PCLE Zone – cis-1,2-DCE
- PCLE Zone – trans-1,2-DCE
- PCLE Zone – VC
- PCLE Zone – 1,1-DCE



InControl Technologies

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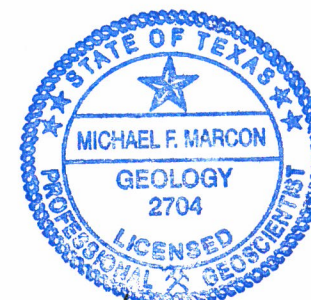
Combined PCLE Zone in Groundwater – May 2021

CLIENT: Lone Star Heat Treating		PM: JMS
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG
DETAILED: 05/14/2021	DESIGNED: JMS	PROJECT NO: E18035-101
		FIGURE: C3f



LEGEND

- Property Boundary
- Former Oil Baths
- ◆ Historical Soil Boring OR Monitoring Well



MF 5/17/2021
N



Approximate Scale (feet)

InControl Technologies

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Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

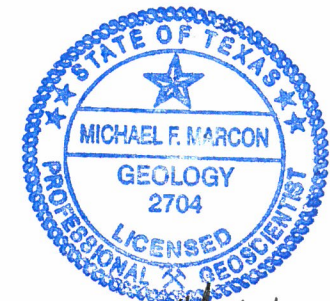
Historical Sampling Location Map

CLIENT:	Lone Star Heat Treating		PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020		CHECKED:	LMG
DETAILED:	DESIGNED:	PROJECT NO:	FIGURE:	
12/01/2020	JMS	E18035-101	C4a	

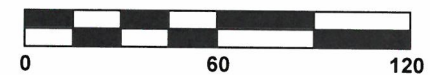


LEGEND

- Property Boundary
- ◆ Soil Boring



2/15/2021



Approximate Scale (feet)

InControl Technologies
 14731 Pebble Bend Drive
 Houston, Texas 77068
 (281) 580-8892 FAX (281) 580-8853

Soil Boring Location Map

CLIENT: Lone Star Heat Treating		PM: JMS
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG
DETAILED: 12/01/2020	DESIGNED: JMS	PROJECT NO: E18035-101
		FIGURE: C4b



LEGEND

 Property Boundary

 Monitoring Well



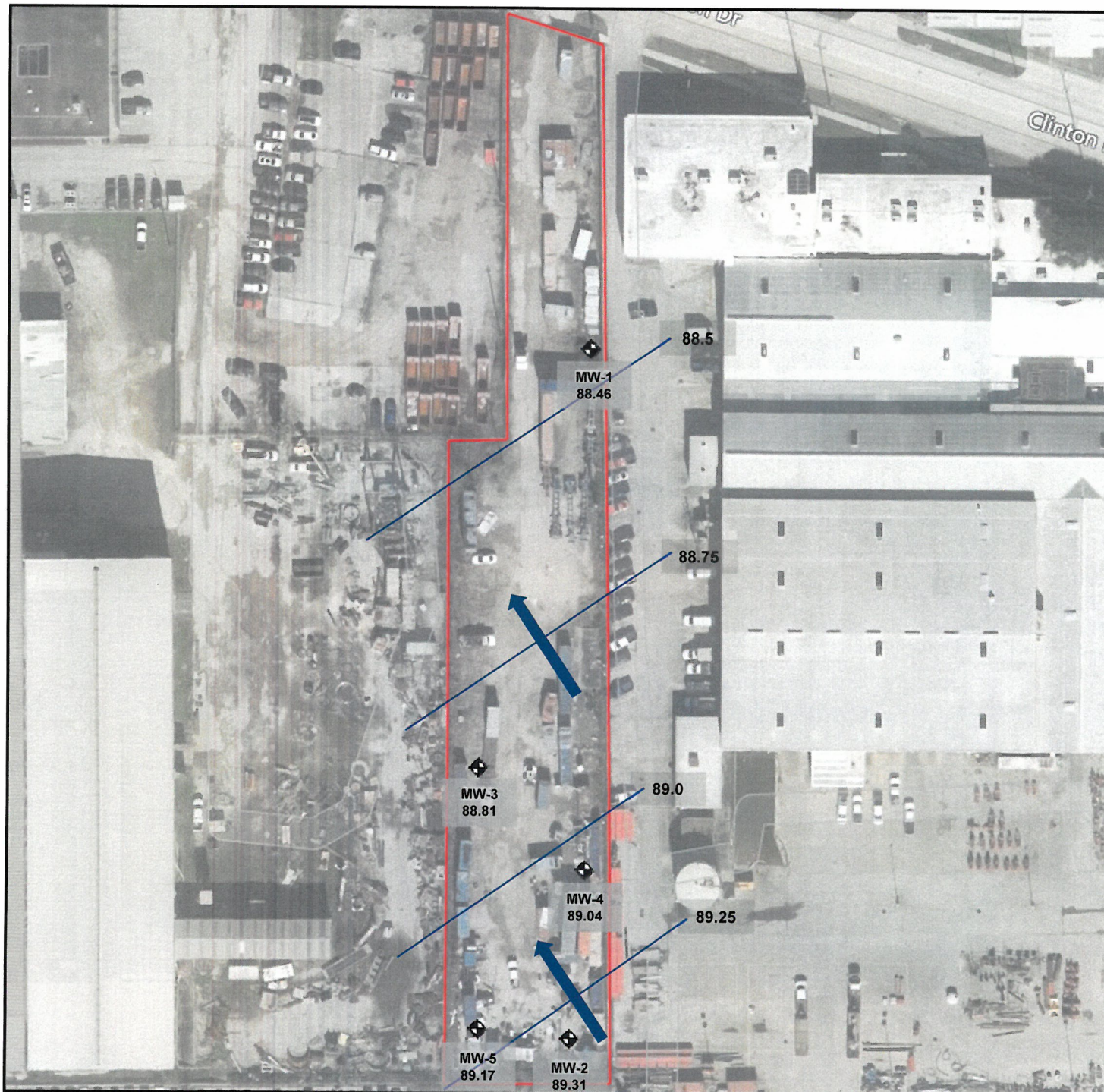
Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

Groundwater Monitoring Well Location Map

CLIENT: Lone Star Heat Treating		PM: JMS	
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG	
DETAILED: 12/01/2020	DESIGNED: JMS	PROJECT NO: E18035-101	FIGURE: C5



LEGEND

- Property Boundary
- Monitoring Well
- Groundwater Flow Direction
- Groundwater Contour Line



N *MF* 5/17/2021



Approximate Scale (feet)

InControl Technologies

14731 Pebble Bend Drive
Houston, Texas 77068
(281) 580-8892 FAX (281) 580-8853

Groundwater Gradient Map – May 2021

CLIENT:	Lone Star Heat Treating		PM:	JMS
LOCATION:	5212 Clinton Drive Houston, TX 77020		CHECKED:	LMG
DETAILED:	05/14/2021	DESIGNED:	JMS	PROJECT NO:
				E18035-101
			FIGURE:	C6

Appendix D

For each contaminant of concern within the designated groundwater:

- a. A description of the ingestion protective concentration level exceedance zone and the non-ingestion protective concentration level exceedance zone, including a specification of the horizontal area and the minimum and maximum depth below ground surface.
- b. The level of contamination, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/L units.
- c. Its basic geochemical properties (e.g., whether the contaminant of concern migrates with groundwater, floats, or is soluble in water).

Protective Concentration Level Exceedance (PCLE) Zone – A review of recent groundwater sampling data from the groundwater bearing unit indicates that the COCs that exceed the Tier 1 $^{GW}_{ing}$ PCLs are trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE), vinyl chloride (VC), and 1,1-dichloroethene (1,1-DCE).

The PCLE zones are depicted on **Figure C3a** through **Figure C3e** and are discussed in more detail below. The area of affected groundwater was delineated horizontally in all directions and the plume is stable. The current overall PCLE zone is approximately 530-feet long by 168-ft wide (**Figure C3f**). A comparison of the groundwater sampling results with applicable non-ingestion PCLs ($^{AirGW}_{inh-v}$) indicates that none of the groundwater samples reported a COC concentration above the $^{AirGW}_{inh-v}$ PCL. Therefore, based on the recent groundwater monitoring results, there is no non-ingestion protective concentration level exceedance zone within the proposed MSD boundary.

The target COCs were only detected at depth in the transition area between the capillary fringe and the vadose zone. The concentration of COCs in soil decrease as one moves from the capillary fringe to surface of the property. Soil borings were completed on a tight grid across the property and did not identify a source in shallow soils. Therefore, the most probable source of the contaminants in groundwater is from an offsite source.

A comparison of the groundwater sampling results with applicable non-ingestion protective concentration levels ($^{AirGW}_{inh-v}$) indicates that none of the groundwater samples reported any COC above a $^{AirGW}_{inh-v}$ PCL. Therefore, based on the recent groundwater monitoring results, besides the $^{GW}_{ing}$ exceedances, there are no other protective concentration level exceedance zones within the proposed MSD boundary.

The first groundwater bearing unit is comprised of sand and is encountered at a depth of approximately 22- to 24-feet below ground surface (ft bgs) during drilling. The base of the first groundwater bearing unit is encountered at a depth of approximately 22- to 29.5-ft bgs and is underlain by a stiff sandy clay. The average static depth to groundwater in the monitoring wells is 10.5- to 12-ft bgs.

COC: Trichloroethene (TCE)	
Maximum Concentration from analytical data	<i>Historic Well:</i> 11 mg/L (MW-2; September 2009) <i>New Well:</i> 0.9 mg/L (MW-4; April 2020)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.005 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 526 ft Width: 132 ft Vertical Extent: 22ft – 29ft below ground surface (bgs)
Non-Ingestion-Based PCL (^{Air} GW _{Inh-v})	24 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemical/ Physical Properties	
Molecular Weight	131.39
Specific Gravity	1.463
Solubility in Water	soluble
Groundwater Migration	along groundwater gradient

COC: Tetrachloroethene (PCE)	
Maximum Concentration from analytical data	<i>Historic Well:</i> 2.97 mg/L (MW-3; October 1996) <i>New Well:</i> 0.16 mg/L (MW-3; June 2019)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.005 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 0 ft Width: 0 ft Vertical Extent: <i>No Current Exceedance</i>
Non-Ingestion-Based PCL (^{Air} GW _{Inh-v})	500 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemical/ Physical Properties	
Molecular Weight	165.83
Specific Gravity	1.623
Solubility in Water	Insoluble
Groundwater Migration	along groundwater gradient

COC: cis-1,2-dichloroethene (cis-1,2-DCE)	
Maximum Concentration from analytical data	<i>Historic Well:</i> 13 mg/L (MW-2; September 2009) <i>New Well:</i> 1.4 mg/L (MW-3; October 2020)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.07 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 526 ft Width: 130 ft Vertical Extent: 22ft – 29ft below ground surface (bgs)
Non-Ingestion-Based PCL (^{Air} GW _{Inh-v})	1,200 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemical/ Physical Properties	
Molecular Weight	96.946
Specific Gravity	1.26
Solubility in Water	Soluble @ 3.5 g/L @ 25°C
Groundwater Migration	along groundwater gradient

COC: trans-1,2-dichloroethene (trans-1,2-DCE)	
Maximum Concentration from analytical data	<i>Historic Well:</i> 0.91 mg/L (MW-1; March 2007) <i>New Well:</i> 0.36 mg/L (MW-5; June 2019)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.1 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 526 ft Width: 130 ft Vertical Extent: 22ft – 29ft below ground surface (bgs)
Non-Ingestion-Based PCL (^{Air} GW _{Inh-v})	770 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemical/ Physical Properties	
Molecular Weight	96.94
Specific Gravity	1.28
Solubility in Water	Soluble @ 6.3 g/L @ 25°C
Groundwater Migration	along groundwater gradient

COC: Vinyl Chloride (VC)	
Maximum Concentration from analytical data	<i>Historic Well:</i> 0.48 mg/L (MW-3; March 2010) <i>New Well:</i> 0.43 mg/L (MW-3; October 2020)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.002 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 285 ft Width: 148 ft Vertical Extent: 22ft – 29ft below ground surface (bgs)
Non-Ingestion-Based PCL (^{Air} GW _{Inh-v})	3.8 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemical/ Physical Properties	
Molecular Weight	62.5
Specific Gravity	0.9106
Solubility in Water	2763 mg/L @ 25°C
Groundwater Migration	along groundwater gradient

COC: 1,1-dichloroethene (1,1-DCE)	
Maximum Concentration from analytical data	<i>Historic Well:</i> 0.053 mg/L (MW-3; June 2009) <i>New Well:</i> 0.019 mg/L (MW-2; October 2020)
Ingestion-Based PCL (Residential ^{GW} GW _{Ing})	0.007 mg/L
Ingestion-Based PCLE Zone (approximate)	Length: 40 ft Width: 40 ft Vertical Extent: 22ft – 29ft below ground surface (bgs)
Non-Ingestion-Based PCL (^{Air} GW _{Inh-v})	1,700 mg/L
Non-Ingestion-Based PCLE Zone	NONE
Geochemical/ Physical Properties	
Molecular Weight	96.946
Specific Gravity	1.3
Solubility in Water	2500 mg/L @ 25°C
Groundwater Migration	along groundwater gradient

Appendix E

A table displaying the following information for each contaminant of concern, to the extent known:

- a. The maximum concentration level for soil and groundwater, the ingestion protective concentration level, and the non-ingestion protective concentration level, all expressed as mg/L units.
- b. The critical protective concentration level without the municipal setting designation, highlighting any exceedances.

Appendix E contains tables summarizing the concentration levels for the primary chemicals of concern in soil and groundwater. The tables include the concentration level, the ingestion protective concentration limits ($^{GW}Soil_{Ing}$ for soil and $^{GW}GW_{Ing}$ for groundwater), the non-ingestion protective concentration limits for soil ($^{Tot}Soil_{Comb}$ and $^{Air}Soil_{Inh-V}$) and groundwater ($^{Air}GW_{Inh-V}$), the critical protective concentration limits assuming no MSD is in place ($^{GW}Soil_{Ing}$ for soil and $^{GW}GW_{Ing}$ for groundwater), and the critical PCLs assuming that an MSD is in place ($^{Tot}Soil_{Comb}$ for soil and $^{Air}GW_{Inh-V}$ for groundwater). The following is a list of the tables in **Appendix E**.

Table E1	Volatile Organic Compounds (VOCs) in Soil
Table E2	Total Petroleum Hydrocarbons (TPH) in Soil
Table E3	Polynuclear Aromatic Hydrocarbons (PAH) in Soil
Table E4	Volatile Organic Compounds (VOCs) in Groundwater

Table E1
Summary of Volatile Organic Compounds in Soil
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Depth	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	TotSoil _{Comb}		18	710	140	590	3.7	2300
Residential	GWSoil _{Ing}		0.034	0.05	0.25	0.49	0.022	0.05
Residential	AirSoil _{In-V}		31	940	920	920	43	5200
N-1	1-2	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	13-15	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
E-1	1-2	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	13-15	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
S-1	1-2	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	13-15	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
W-1	1-2	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
C-1	1-2	1994	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
ICT-1	0-2	12/18/2018	<0.0013	<0.00089	<0.00093	<0.001	<0.0026	<0.0013
	8-10	12/18/2018	0.0074	<0.00096	0.0151	0.0059	<0.0029	<0.0014
	10-12	12/18/2018	0.0145	<0.00098	0.0655	0.0201	0.0038	0.0015 J
ICT-2	0-2	12/18/2018	0.0027 J	<0.00099	0.0017 J	<0.0011	<0.0029	<0.0014
	8-10	12/18/2018	0.0022 J	<0.0011	0.0091	0.015	0.0034 J	<0.0016
	14-16	12/18/2018	<0.0014	<0.00093	0.0523	0.0691	0.0082	0.0029 J
ICT-3	3-4	12/18/2018	<0.0015	<0.001	0.0018 J	0.0027 J	<0.003	<0.0015
	8-10	12/18/2018	<0.0016	<0.0011	0.0158	0.0102	<0.0031	<0.0015
	14-16	12/18/2018	0.0372	<0.00099	0.164	0.0808	0.0056	<0.0015
ICT-4	3-4	12/18/2018	<0.0017	<0.0011	<0.0011	<0.0013	<0.0032	<0.0016
	8-10	12/18/2018	0.0091	<0.0011	0.0489	0.0452	0.013	<0.0016
	14-15	12/18/2018	0.035	<0.001	0.371	0.128	0.0376	0.0023 J
ICT-5	2-4	12/18/2018	<0.0016	<0.0011	<0.0011	<0.0013	<0.0032	<0.0016
	8-10	12/18/2018	<0.0015	<0.00095	<0.001	<0.0011	<0.0028	<0.0014
	10-12	12/18/2018	<0.0015	<0.001	0.004	0.0036	<0.003	<0.0015
ICT-6	3-4	12/18/2018	<0.0017	<0.0011	<0.0012	<0.0013	<0.0033	<0.0016
	8-10	12/18/2018	0.0049	<0.0011	0.0312	0.0109	<0.0034	<0.0017
	14-15	12/18/2018	0.0615	<0.001	0.187 J	0.104	0.0115	<0.0015
ICT-7	3-4	12/18/2018	<0.0014	<0.00094	0.0015 J	<0.0011	<0.0028	<0.0014
	8-10	12/18/2018	0.0019 J	<0.001	0.013	0.0064	<0.003	<0.0015
	14-16	12/18/2018	0.0565	<0.0011	0.129	0.0744	0.0043	<0.0016
ICT-8	2-4	12/18/2018	<0.0018	<0.0012	<0.0012	0.0036 J	<0.0034	<0.0017
	8-10	12/18/2018	0.0419	<0.001	0.0634	0.0231	0.0056	<0.0015
	14-16	12/18/2018	0.105	<0.001	0.45	0.133	0.0092	0.0016 J

Table E1
Summary of Volatile Organic Compounds in Soil
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Depth	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	TotSoil _{Comb}		18	710	140	590	3.7	2300
Residential	GWSoil _{Ing}		0.034	0.05	0.25	0.49	0.022	0.05
Residential	AirSoil _{In-V}		31	940	920	920	43	5200
ICT-9	3-4	12/18/2018	<0.0017	<0.0011	<0.0012	<0.0013	<0.0033	<0.0017
	8-10	12/18/2018	<0.0016	<0.001	<0.0011	<0.0012	<0.003	<0.0015
	14-15	12/18/2018	0.0018 J	<0.00098	0.0023 J	<0.0011	<0.0029	<0.0014
ICT-10	3-4	12/18/2018	<0.0019	<0.0012	0.0446	<0.0014	0.0712	<0.0018
	8-10	12/18/2018	0.772	<0.069	0.84	<0.08	0.277	<0.1
	14-15	12/18/2018	0.47	<0.0012	0.47	0.143	0.363	0.0087
ICT-11	3-4	12/18/2018	<0.0019	<0.0012	<0.0013	<0.0014	<0.0036	<0.0018
	8-10	12/18/2018	0.0072	<0.0011	0.0258	0.0056	<0.0033	<0.0016
	14-15	12/18/2018	0.0155	<0.0012	0.0444	0.0199	<0.0035	<0.0017
ICT-12	3-4	12/18/2018	<0.0018	<0.0012	<0.0013	<0.0014	<0.0036	<0.0018
	8-10	12/18/2018	<0.0015	<0.00099	0.0027 J	<0.0012	<0.0029	<0.0015
	10-12	12/18/2018	<0.0016	<0.001	0.0018 J	<0.0012	<0.0031	<0.0015
ICT-13	3-4	5/23/2019	<0.0006	<0.0007	<0.0008	<0.0005	<0.0008	<0.0005
	5-6	5/23/2019	<0.00056	<0.00065	<0.00075	<0.00047	<0.00075	<0.00047
	8-10	5/23/2019	<0.00054	<0.00063	<0.00071	<0.00045	<0.00071	<0.00045
ICT-14	2-3	5/23/2019	<0.0005	<0.00059	<0.00067	<0.00042	<0.00067	<0.00042
	5-6	5/23/2019	0.0062	<0.00062	0.025	0.0022 J	0.012	<0.00044
	8-10	5/23/2019	<0.00054	<0.00063	<0.00072	<0.00045	<0.00072	<0.00045
ICT-15	1-2	5/23/2019	<0.00063	<0.00074	<0.00084	<0.00053	<0.00084	<0.00053
	5-6	5/23/2019	<0.00071	<0.00083	<0.00095	<0.00059	<0.00095	<0.00059
	8-10	5/23/2019	<0.00051	<0.0006	<0.00068	<0.00043	<0.00068	<0.00043
ICT-16	3-4	5/23/2019	<0.00056	<0.00065	<0.00074	<0.00046	<0.00074	<0.00046
	5-6	5/23/2019	<0.00054	<0.00063	<0.00072	<0.00045	<0.00072	<0.00045
	8-10	5/23/2019	<0.00053	<0.00062	<0.00071	<0.00044	<0.00071	<0.00044
ICT-17	2-3	5/23/2019	0.0017 J	0.0017 J	0.0029 J	<0.00043	<0.00069	<0.00043
	5-6	5/23/2019	<0.00056	<0.00065	<0.00075	<0.00047	0.012	<0.00047
	8-10	5/23/2019	4.8	6.3	7.4	0.059	3.3	0.012
ICT-18	2-3	5/23/2019	0.07	0.032	0.14	0.0021 J	0.072	<0.00045
	5-6	5/23/2019	0.0031 J	<0.00066	0.02	0.0085	0.023	<0.00047
	8-10	5/23/2019	0.055	0.007	0.33	0.028	0.45	<0.00041
ICT-19	2-3	5/23/2019	<0.00053	<0.00062	<0.00071	<0.00044	<0.00071	<0.00044
	5-6	5/23/2019	1.1	<0.00061	1.2	0.38	1.2	<0.00044
	8-10	5/23/2019	0.96	0.009	1.3	0.16	0.97	<0.00045

Table E1
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Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Depth	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	TotSoil _{Comb}		18	710	140	590	3.7	2300
Residential	GWSoil _{Ing}		0.034	0.05	0.25	0.49	0.022	0.05
Residential	AirSoil _{In-V}		31	940	920	920	43	5200
ICT-20	3-4	5/23/2019	0.015	<0.00068	0.019	0.0068	0.033	<0.00048
	5-6	5/23/2019	0.0098	<0.00065	0.0074	0.0042 J	0.013	<0.00046
	8-10	5/23/2019	0.066	0.0012 J	0.035	0.016	0.013	<0.00041
ICT-21	2-3	5/23/2019	<0.00057	<0.00067	<0.00076	<0.00048	<0.00076	<0.00048
	5-6	5/23/2019	<0.0006	<0.0007	<0.0008	<0.0005	<0.0008	<0.0005
	8-10	5/23/2019	<0.00051	<0.00059	<0.00068	<0.00042	<0.00068	<0.00042
ICT-22	3-4	5/23/2019	<0.00054	<0.00063	<0.00072	<0.00045	<0.00072	<0.00045
	5-6	5/23/2019	<0.00054	<0.00064	<0.00073	<0.00045	<0.00073	<0.00045
	8-10	5/23/2019	<0.0005	<0.00058	<0.00067	<0.00042	<0.00067	<0.00042
ICT-23	3-4	5/23/2019	<0.00052	<0.00061	<0.0007	<0.00043	<0.0007	<0.00043
	5-6	5/23/2019	<0.00054	<0.00063	<0.00072	<0.00045	<0.00072	<0.00045
	8-10	5/23/2019	<0.00052	<0.0006	<0.00069	<0.00043	<0.00069	<0.00043
ICT-24	2-3	5/23/2019	<0.00059	<0.00068	<0.00078	<0.00049	<0.00078	<0.00049
	4-5	5/23/2019	<0.00055	<0.00065	<0.00074	<0.00046	<0.00074	<0.00046
	8-10	5/23/2019	0.0014 J	<0.00068	0.0032 J	<0.00049	<0.00078	<0.00049
ICT-25	3-4	5/23/2019	<0.00054	<0.00063	<0.00072	<0.00045	0.0075	<0.00045
	5-6	5/23/2019	<0.00056	<0.00065	<0.00075	0.0021 J	0.02	<0.00047
	8-10	5/23/2019	0.48	0.0045 J	0.14	0.12	0.17	0.0027 J
ICT-26	3-4	5/23/2019	<0.00058	<0.00068	<0.00077	<0.00048	<0.00077	<0.00048
	5-6	5/23/2019	<0.00055	<0.00065	<0.00074	<0.00046	<0.00074	<0.00046
	8-10	5/23/2019	<0.00052	<0.00061	<0.0007	<0.00044	<0.0007	<0.00044
ICT-27	3-4	5/23/2019	<0.00063	<0.00074	<0.00084	<0.00053	<0.00084	<0.00053
	5-6	5/23/2019	<0.00059	<0.00069	<0.00079	<0.00049	<0.00079	<0.00049
	8-10	5/23/2019	<0.00057	<0.00066	<0.00076	<0.00047	<0.00076	<0.00047
ICT-28	3-4	5/23/2019	<0.00057	<0.00067	<0.00076	<0.00048	<0.00076	<0.00048
	5-6	5/23/2019	<0.00056	<0.00066	<0.00075	<0.00047	<0.00075	<0.00047
	8-10	5/23/2019	<0.00052	<0.00061	<0.00069	<0.00043	<0.00069	<0.00043
ICT-29	2-4	6/26/2019	<0.00054	<0.00062	<0.00071	<0.00045	<0.00071	<0.00045
	4-6	6/26/2019	<0.00055	<0.00064	0.0059	0.0029 J	<0.00073	<0.00046
	8-10	6/26/2019	0.0027 J	<0.00064	0.0077	0.0044 J	<0.00073	<0.00045
	14-15	6/26/2019	<0.00059	<0.00068	<0.00078	<0.00049	<0.00078	<0.00049

Table E1
Summary of Volatile Organic Compounds in Soil
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Depth	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	TotSoil _{Comb}		18	710	140	590	3.7	2300
Residential	GWSoil _{Ing}		0.034	0.05	0.25	0.49	0.022	0.05
Residential	AirSoil _{In-V}		31	940	920	920	43	5200
ICT-30	0-4	6/26/2019	<0.0006	<0.0007	<0.0008	<0.0005	<0.0008	<0.0005
	4-6	6/26/2019	<0.00059	<0.00069	<0.00079	<0.0005	<0.00079	<0.0005
	8-10	6/26/2019	<0.00053	<0.00062	<0.00071	<0.00044	<0.00071	<0.00044
	14-15	6/26/2019	<0.00058	<0.00068	<0.00077	<0.00048	<0.00077	<0.00048
ICT-31	2-4	6/26/2019	<0.00056	<0.00065	<0.00075	<0.00047	<0.00075	<0.00047
	4-6	6/26/2019	<0.00055	<0.00064	<0.00074	<0.00046	<0.00074	<0.00046
	8-10	6/26/2019	<0.00061	<0.00072	<0.00082	<0.00051	<0.00082	<0.00051
	14-15	6/26/2019	<0.0006	<0.0007	<0.00079	<0.0005	<0.00079	<0.0005
ICT-32	14-15	6/26/2019	3	0.6	100	0.27	5.3	0.046
MW-1	1-2	7/20/1995	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	16.5-17.5	7/20/1995	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	29-30	7/20/1995	<0.005	0.008	<0.005	<0.005	<0.005	<0.005
	3-5	5/30/2019	<0.00058	<0.00068	<0.00078	<0.00049	<0.00078	<0.00049
	8-10	5/30/2019	<0.0006	<0.0007	<0.0008	<0.0005	<0.0008	<0.0005
MW-2	1-2	7/20/1995	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	16.5-17.5	7/20/1995	<0.005	0.024	<0.005	<0.005	<0.005	<0.005
	30-31	7/20/1995	<0.005	0.009	<0.005	<0.005	<0.005	<0.005
MW-3	1-2	7/21/1995	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
	22.5-23.5	7/21/1995	<0.600	0.9	<0.600	<0.600	<0.600	<0.600
	33.5-34.5	7/21/1995	<0.600	0.6	<0.600	<0.600	<0.600	<0.600
SB-1	2.5-3.5	3/14/2011	<0.00074	<0.00062	<0.00074	<0.00062	<0.0012	<0.00099

Table E2
Summary of Total Petroleum Hydrocarbons in Soil
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Depth	Date	C6 to C12	>C12 to C28	>C28 to C35	C6 to C35 (Total)
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg
Residential	^{Tot} Soil _{Comb}		1600	2300	2300	
Residential	^{GW} Soil _{Ing}		65	200	200	
Residential	^{Air} Soil _{In-V}		3100	15000	15000	
ICT-2	0-2	5/30/2019	<8	290	52 J	342
ICT-3	0-2	5/30/2019	<37	3400	650	4050
HA-1	1-2	6/26/2019	<7.4	50	14 J	64

Table E3
Summary of PAH in Soil
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Depth	Date	Naphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	Tot Soil _{Comb}		220	3000	3800	18000	41	4.1	42	1800
Residential	GW Soil _{Ing}		31	240	410	6900	130	7.6	440	46000
Residential	Air Soil _{In-V}		270				5500	64	9000	
HA-1	1-2	6/26/2019	<0.00068	<0.00057	<0.0011	<0.00057	0.0027 J	0.0026 J	0.0054	0.0024 J

Sample ID	Depth	Date	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)pyrene	Phenanthrene	Pyrene
	(ft)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Residential	Tot Soil _{Comb}		420	4100	4	2300	2300	42	1700	1700
Residential	GW Soil _{Ing}		4500	11000	15	1900	300	1300	420	1100
Residential	Air Soil _{In-V}		220000	870000	2900			37000		
HA-1	1-2	6/26/2019	0.0026 J	0.0043	<0.0018	0.006	<0.0012	<0.00091	<0.0017	0.017

Notes: <: Analyte was not detected at or above the reported sample detection limit
 J: Analyte was detected at the concentration less than the method detection limit

Table E4
Summary of Volatile Organic Compounds in Groundwater
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential		0.005	0.005	0.07	0.1	0.002	0.007
Residential		24	500	1200	770	3.8	1700
MW-1	7/26/1995	0.158	<0.025	-	0.026	<0.025	<0.025
	9/2/1996	1.18	<0.05	0.43	0.47	<0.05	<0.05
	8/16/2001	1.88	0.033	0.531	0.604	0.004	0.008
	4/28/2006	1.4	0.028	0.23	0.47	<0.0006	0.0081
	3/8/2007	1.22	0.00766	0.353	0.91	0.00208	0.00653
	6/16/2009	1.5	0.046	0.16	0.42	<0.0005	0.0024 J
	9/17/2009	1.5	0.064	0.21	0.36	<0.0005	0.0065
	12/3/2009	1.4	0.06	0.16	0.23	0.00092 J	0.0048 J
	3/4/2010	1.1	0.026	0.18	0.31	0.00079 J	0.0049 J
	6/3/2019	0.16	0.0024 J	0.093	0.16	<0.0004	0.0022 J
	4/2/2020	0.014	<0.0006	0.15	0.3	<0.0004	0.0029 J
	10/22/2020	0.0037 J	<0.0006	0.058	0.16	0.00091 J	0.0015 J
	2/8/2021	0.0037 J	<0.0006	0.061	0.18	<0.0004	0.0024 J
	5/3/2021	0.0067	<0.0006	0.075	0.19	0.00089 J	0.0015 J
MW-2	7/26/1995	0.527	<0.025	-	0.177	0.036	<0.025
	9/2/1996	0.434	<0.025	0.598	0.246	0.033	<0.25
	8/16/2001	0.695	<0.005	0.867	0.445	0.045	0.007
	4/28/2006	9.6	0.00038 J	6.6	0.43	0.22	0.019
	3/8/2007	10.3	0.00301	7.12	0.533	0.371	0.0161
	6/16/2009	9.5	0.0082 J	7.4	0.67	0.3	<0.005
	9/17/2009	11	<0.006	13	0.76	0.32	0.026 J
	12/3/2009	10	<0.006	11	0.64	0.4	0.02 J
	3/4/2010	9.8	0.003	10	0.65	0.36	0.022 J
	6/3/2019	0.46	0.0013 J	0.63	0.22	0.0097	0.017
	4/2/2020	0.3	<0.0006	0.63	0.24	0.0072	0.018
	10/22/2020	0.3	<0.0006	0.61	0.23	0.0057	0.019
	2/8/2021	0.31	<0.0006	0.54	0.18	0.0032	0.014
	5/3/2021	0.35	<0.0006	0.62	0.25	0.0045	0.015

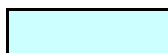
Table E4
Summary of Volatile Organic Compounds in Groundwater
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential		0.005	0.005	0.07	0.1	0.002	0.007
Residential		24	500	1200	770	3.8	1700
MW-3	7/26/1995	5.7	1.7	-	<0.5	<0.5	<0.5
	9/2/1996	9.9	2.81	5.18	0.1	0.25	<0.1
	10/3/1996	9.2	2.97	4.38	0.11	0.24	<0.1
	8/16/2001	10.3	1.67	2.8	0.193	0.288	0.022
	4/28/2006	2.1	0.074	2	0.14	0.11	0.016
	5/22/2007	5.19	0.232	2.67	0.248	0.149	0.0241
	6/16/2009	7	0.54	3.9	0.66	0.46	0.053
	9/17/2009	4.6	0.33	4.6	0.53	0.36	0.052
	12/3/2009	4.3	0.25	4.3	0.55	0.5	0.032 J
	3/4/2010	5.8	0.33	3.6	0.56	0.48	0.038 J
	6/3/2019	0.83	0.16	0.67	0.23	0.1	0.0062
	6/9/2020	0.16	0.11	0.2	0.08	0.012	0.0018 J
	10/22/2020	0.021	0.00079 J	1.4	0.28	0.43	0.005 J
	2/8/2021	0.0013 J	<0.0006	0.37	0.16	0.27	0.0027 J
	5/3/2021	0.014	<0.0006	0.64	0.21	0.22	0.0029 J
MW-4	6/3/2019	0.48	0.0039 J	0.16	0.15	0.0041	0.0023 J
	4/2/2020	0.9	0.0025 J	0.28	0.18	0.004	0.0034 J
	10/22/2020	0.82	0.003 J	0.28	0.19	0.0052	0.0049 J
	2/8/2021	0.87	0.0027 J	0.31	0.17	0.0056	0.0053
	5/5/2021	0.03	<0.0006	0.011	0.0059	<0.0004	<0.0005
MW-5	6/3/2019	0.69	0.0013 J	0.94	0.36	0.012	0.0062
	4/2/2020	0.14	<0.0006	1.2	0.34	0.0082	0.0054
	10/22/2020	0.23	<0.0006	0.97	0.22	0.0077	0.0048 J
	2/8/2021	0.1	<0.003	1.1	0.26	0.0085 J	0.0059 J
	5/3/2021	0.1	<0.003	1.1	0.27	0.0063 J	0.0042 J

Table E4
Summary of Volatile Organic Compounds in Groundwater
Lone Star Heat Treating
5212 Clinton Drive, Houston, Texas 77020
SWR No. 30290

Sample ID	Date	TCE	PCE	cis-1,2-DCE	trans-1,2-DCE	Vinyl chloride	1,1-DCE
		mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Residential		0.005	0.005	0.07	0.1	0.002	0.007
Residential		24	500	1200	770	3.8	1700
MW-13	3/8/2007	0.415	0.0272	0.0393	0.021	<0.00034	0.00218
GW-1	3/8/2007	0.154	0.00212	0.468	1.11	0.00414	0.00654
GW-2	3/8/2007	2.49	0.00697	1.09	0.548	0.177	0.0113
GW-3	3/8/2007	0.358	0.0148	0.0311	0.0058	0.00288	0.00131
GW-4	3/8/2007	1.23	0.0282	0.464	0.0318	0.0193	0.00611
GW-5	3/8/2007	0.0834	0.0222	0.0169	0.00095 J	0.00014 J	0.00066 J
TMW-1	4/28/2006	4.3	0.3	1.9	0.18	0.17	0.026
TMW-2	4/28/2006	11	0.16	5.6	0.28	0.88	0.03
TMW-3	4/28/2006	0.36	<0.0005	1	0.91	0.012	0.0099

Notes:



Exceeds ^{GW}GW_{ing}

Appendix F

If the plume extends beyond the limits of property owners listed in this application, list the owners of the additional property beneath which the plume(s) extend(s), and a summary of the interactions with those property owners about the plume(s) and this MSD application. *Please Note: You are not required under this item to notify affected property owners, only to provide a summary of who affected property owners are, and if there have been any communications. "No contact" can be an acceptable answer.*

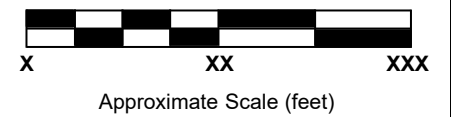
Based on limited historical off-site data, as well as groundwater data collected on-site, the groundwater plume most likely extends onto the upgradient property owned by Griffin Dewatering and property owned by the City of Houston. The plume also extends in the downgradient direction, off-site onto the property owned by Hahn & Clay.

The soil and groundwater were historically shared with property owners to the east and west of the subject property. The property owner to the north contacted Lone Star as part of their site assessment activities. This information was shared with each property owner. The City of Houston owns the land to the south. No communication has occurred with the City of Houston.



LEGEND

- Property Boundary
- Soil Boring



InControl Technologies
 14731 Pebble Bend Drive
 Houston, Texas 77068
 (281) 580-8892 FAX (281) 580-8853

Notification Map

CLIENT: Lone Star Heat Treating		PM: JMS	
LOCATION: 5212 Clinton Drive Houston, TX 77020		CHECKED: LMG	
DETAILED: 12/01/2020	DESIGNED: JMS	PROJECT NO: E18035-101	FIGURE: F

Appendix G

A statement as to whether the source of the plume has been removed, the plume of contamination is stable (i.e. no change) or contracting, and the plume is delineated, **with the basis for that statement.** Please include historical sampling data.

Shallow groundwater was affected by chlorinated hydrocarbons (CHCs) including trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, and vinyl chloride. The initial investigation was performed in response to the removal of several underground tanks associated with the former metal heat treating plant. Underground storage tanks containing quench oils from the metal heat treating operations were excavated and removed from the property in 1994. Following the removal of the underground storage tanks, a release determination investigation (RDI) was completed. Elevated concentrations of Total Petroleum Hydrocarbons (TPH) were detected in soil samples collected from the limits of the excavation (**Figure C4a**) The TCEQ issued LPST No.108524 to the site. During the removal of the oil filled tanks, petroleum hydrocarbon contamination was found beneath the quench tanks. This led to the excavation of a significant volume of soil which was disposed of offsite. The results of the excavation side wall samples are summarized in **Tables E1 and E2**.

A subsequent groundwater investigation was performed to assess potential impacts to groundwater from the former underground tanks. The investigation included the collection of soil and groundwater samples from three groundwater monitoring wells (MW-1, MW-2 and MW-3, **Figure C4a**) The samples were analyzed for volatile organic hydrocarbons (VOCs) and TPH. TPH was not identified in groundwater; however, this investigation led to the discovery of Chlorinated Hydrocarbons (CHCs) in groundwater (**Table E4**). No onsite sources or historical releases of CHCs were identified. Based on the concentration and distribution of CHCs reported in groundwater samples collected from the temporary and permanent monitoring wells at the affected property, it was concluded that the CHCs originated from a potential offsite source located to the west of the site. It should be noted that CHCs were not identified in sidewall soil samples collected during the quench bath tank removal. Extremely low levels of CHC were identified in soil samples collected at depth. It was then determined that these soil samples were likely influenced by impacted groundwater. Given the levels of CHCs found in groundwater, elevated levels of CHCs would be expected in the actual sidewall samples, if the site were a contributing source, but that was not the case.

At the request of the Texas Commission on Environmental Quality (TCEQ), Lone Star collected and analyzed groundwater samples from the uppermost groundwater bearing unit (GWBU) at both the subject property and the adjacent offsite property to the west (**Table E4**). Three temporary groundwater monitoring wells (TMW-1, TMW-2, and TMW-3) were advanced on the adjacent property (**Figure C4a**). The purpose of the investigation was to evaluate a potential offsite source of CHCs found in groundwater. The analytical results obtained from groundwater samples collected during this investigation identified increasing concentrations of COCs in groundwater off-site to the west. To date, this has been the highest reported concentration of CHCs found in groundwater at or near the subject site.

An investigation was also conducted on the neighboring property to the east, Griffin Dewatering. Several temporary groundwater monitoring wells were installed on the adjacent property (**Figure C4a**). The results

of a soil and groundwater investigation performed on the adjacent property to the east also identified the presence of CHCs in groundwater (**Table E4**). The concentration continues from west to east with the highest overall concentration on the property to the west.

Additionally, CHCs and petroleum hydrocarbons were documented in groundwater on the 5311 Clinton Drive property to the north of the subject site (Former Earl M Jorgensen Facility) which is in the TCEQ Voluntary Cleanup Program (VCP). The subject property lies among a group of sites which have CHC plumes present within the upper-most groundwater bearing unit. The presence of CHCs in groundwater on the subject property is expected given the proximity of the property to these other sites.

Historically, the TCEQ requested Lone Star conduct quarterly groundwater monitoring of three on-site monitor wells (**Figure C4a**) for site related COCs identified in the Affected Property Assessment Report (APAR) and to submit annual groundwater monitoring reports. An Annual Groundwater Monitoring and Sampling Report dated July 2010 was submitted to the TCEQ documenting the results from the quarterly groundwater monitoring. Data obtained from the groundwater monitoring wells indicated that COC concentrations in groundwater were generally stable or declining. Based on the stable-to-declining trend in COC concentrations reported in groundwater, combined with the fact that the neighboring sites to the west, east and north are possibly the sources, Lone Star requested permission to cease groundwater monitoring and sampling activities on the site.

Historical documents from another site have insinuated that there was a historical release on the Lone Star property. InControl Technologies has done independent research and were not able to identify any such documents. The lack of TCE in subsurface soil samples collected on the Lone Star property supports the conclusion that there was no release on the subject property. The groundwater data collected across the subject property combined with the groundwater data collected from offsite properties to the east and west, clearly indicate a source to the west of the subject property. To date, the highest concentration of TCE found in groundwater was collected to the west of the subject site. Furthermore, the concentration gradient trends from west to east along the expected groundwater gradient in the area. In addition, the groundwater samples collected from the property to the west also report PCE, while this compound was not detected in any material concentration on the subject property. Therefore, a likely source of PCE/TCE and their breakdown products in groundwater is the property to the west.

The lateral extent of groundwater impact in the shallow groundwater bearing unit is not delineated in all directions. The plume to the north extends onto a site where an MSD exists. The plume was delineated to the south and east. The plume has not been delineated to the west on the suspected source property. Concentrations of chemicals of concern are stable to decreasing in monitoring wells installed in the first groundwater bearing unit. Information made available to InControl Technologies from the adjacent upgradient property indicated the VOC source is mostly likely on the adjacent property to the west and migrating downgradient on to the subject property. Any potential on-site source area has been evaluated and no onsite source was identified. There are no active users of chlorinated hydrocarbons on the subject property eliminating a potential continuing source area.

In summary, the groundwater data collected to date indicates that the area of affected groundwater is stable and was the result of historic releases associated with operations on the adjacent property.

Mann-Kendall Test for Statistical Trend

InControl Technologies conducted a statistical trend analysis to determine if chemicals of concern were increasing, decreasing, or remaining stable over time. The primary chemicals of concern include tetrachloroethene, trichloroethene, cis-1,2-dichloroethene, trans-1,2-dichloroethene, 1,1-dichloroethene, and vinyl chloride. InControl Technologies used the Mann-Kendall Statistical Test for Trends to conduct the trend analysis. The statistical analysis was conducted using QualStat 6.0, a commercially available software package.

The purpose of the Mann-Kendall test is to statistically assess if there is a monotonic upward or downward trend of the variable of interest over time. A monotonic upward (downward) trend means that the variable consistently increases (decreases) through time, but the trend may or may not be linear. The Mann-Kendall test is used in place of a parametric linear regression analysis since the criteria for this test are generally violated with temporal environmental data. The regression analysis requires that the residuals from the fitted regression line be normally distributed; an assumption not required by the Mann-Kendall test since the Mann-Kendall test is a non-parametric or distribution-free statistical test.

Assumptions

The following assumptions underlie the Mann-Kendall test:

- When no trend is present, the measurements (observations or data) obtained over time are independent and identically distributed. The assumption of independence means that the observations are not serially correlated over time.
- The observations obtained over time are representative of the true conditions at the various sampling times.
- The sample collection, handling, and measurement methods provide unbiased and representative observations of the underlying populations over time.

There is no requirement that the measurements be normally distributed or that the trend, if present, is linear. The Mann-Kendall test can be computed if there are missing values and values below the sample detection limit. The assumption of independence requires that the time between samples be sufficiently large so that there is no correlation between measurements collected at different times.

Calculations

The Mann-Kendall Statistical test tests whether to reject the null hypothesis (H_0) and accept the alternative hypothesis (H_a), where:

- H_0 : No monotonic trend
- H_a : Monotonic trend is present

The Mann-Kendall test is conducted as follows:

1. List the data in the order in which they were collected over time, $x_1, x_2, \dots, x_n$, which denote the

measurements obtained at times 1, 2, ..., n, respectively.

2. Determine the sign of all $n(n-1)/2$ possible differences $x_j - x_k$, where $j > k$. These differences are $x_2 - x_1, x_3 - x_1, \dots, x_n - x_1, x_3 - x_2, x_4 - x_2, \dots, x_n - x_2, \dots, x_n - x_{n-2}, x_n - x_{n-1}$.
3. Let $\text{sgn}(x_j - x_k)$ be the indicator function that takes on the value $\pm 1, 0$, or -1 according to the sign of $x_j - x_k$, that is:

$$\text{sgn}(x_j - x_k) = \begin{cases} 1 & \text{if } x_j - x_k > 0 \\ 0 & \text{if } x_j - x_k = 0 \\ -1 & \text{if } x_j - x_k < 0 \end{cases}$$

4. Compute the statistic $S = \sum_{k=1}^{n-1} \sum_{j=k+1}^n \text{sgn}(x_j - x_k)$ which is the number of positive differences minus the number of negative differences. If S is a positive number, observations obtained later in time tend to be larger than observations made earlier. If S is a negative number, then observations made later in time tend to be smaller than observations made earlier.
5. Compute the variance of S as follows:

$$\text{Var}(S) = \frac{1}{18} \left[n(n-1)(2n+5) - \sum_{p=1}^g t_p(t_p-1)((2t_p+5)) \right]$$

Where g is the number of tied groups and t_p is the number of observations in the p^{th} group. When there are ties in the data due to equal values or non-detects, $\text{Var}(S)$ is adjusted by the tie correction method described in Helsel (2005, p. 191) and included in the formula above.

6. Compute the Mann-Kendall test statistic, Z_{MK} , as follows:

$$Z_{MK} = \begin{cases} \frac{S-1}{\sqrt{\text{Var}(S)}} & \text{if } S > 0 \\ 0 & \text{if } S = 0 \\ \frac{S+1}{\sqrt{\text{Var}(S)}} & \text{if } S < 0 \end{cases}$$

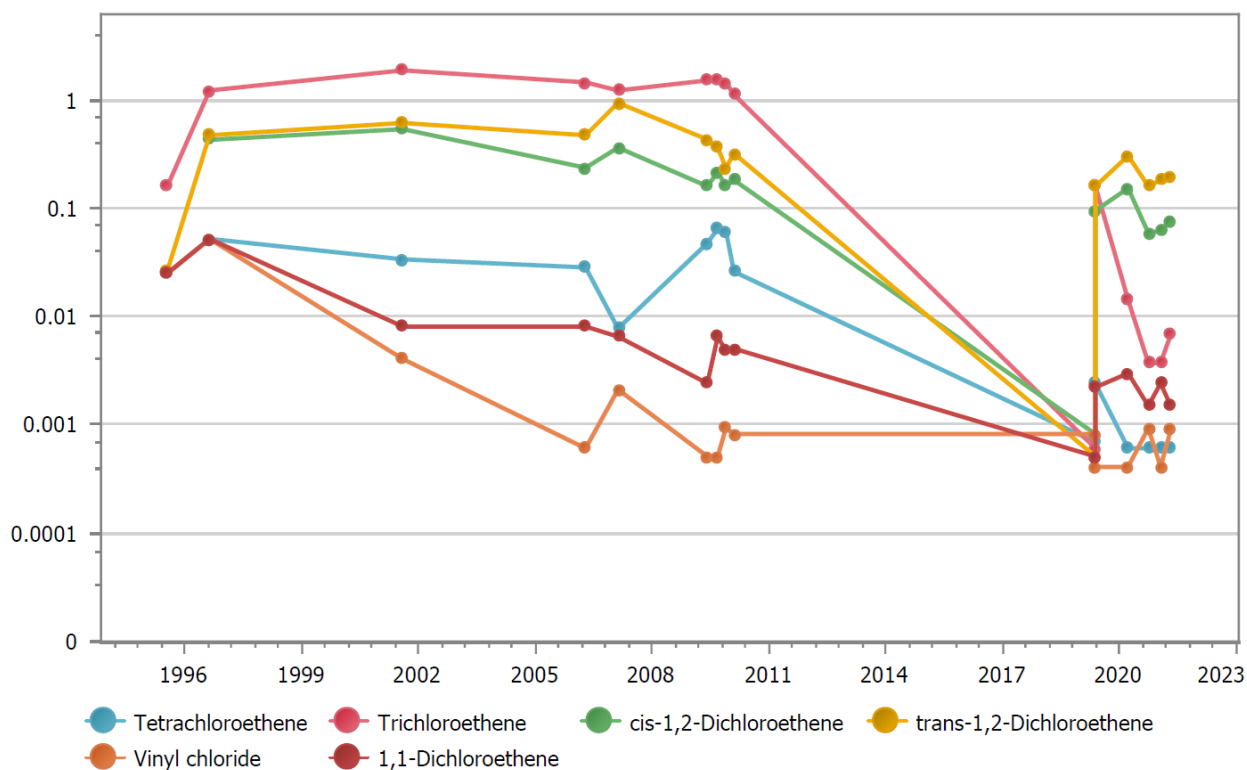
A positive (negative) value of Z_{MK} indicates that the data tend to increase (decrease) with time. To determine if a trend exists at the Type I error rate α , where $0 < \alpha < 0.5$. (Note that α is the tolerable probability that the Mann Kendall test will falsely reject the null hypothesis.), then the H_0 is rejected, and the H_a is accepted if $Z_{MK} > Z_{1-\alpha}$, where $Z_{1-\alpha}$ is the $100(1-\alpha)$ percentile of the standard normal distribution. Following standard TRRP Guidance, InControl Technologies used an α of 0.05. If the calculated probability (p) is less than 0.05, the H_0 hypothesis (no monotonic trend) is rejected in favor of the H_a hypothesis (a monotonic trend exists in the data). The following sections discuss the results of the Mann-Kendall Statistical Analysis on a well-by-well basis.

Results from Statistical Trend Analysis

A Statistical Trend Analysis was conducted for each well reporting a chemical of concern above the Tier 1 Residential Protective Concentration Level. Only chemicals with historically detected concentrations exceeding the target PCL within a given well are discussed. Compounds that are below the Tier 1 Residential PCL are not discussed.

Well ID: MW-1

Several compounds exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-1. The following table shows the results for the Mann-Kendall Statistical Test for Trends for all groundwater monitoring data since the well was first installed and after the reinstallation in 2019.

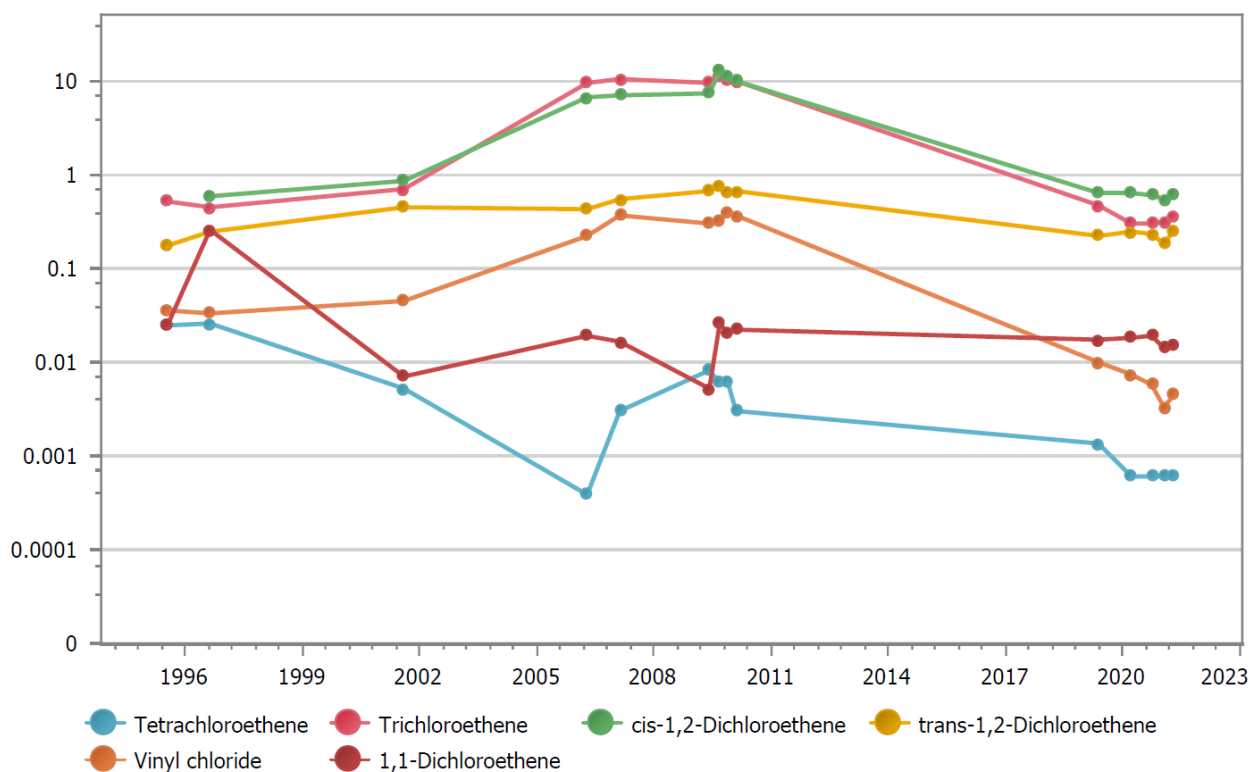


Parameter	Trend	Count	S	S Variance	S Prob	Z Value
Tetrachloroethene	Decreasing	16	-66	484.6667	0.14	-2.998
Trichloroethene	Decreasing	16	-51	490.3333	1.06	-2.303
cis-1,2-Dichloroethene	Decreasing	15	-64	407.3333	0.08	-3.171
trans-1,2-Dichloroethene	Decreasing	16	-46	491.3333	1.90	-2.075
Vinyl chloride	Decreasing	16	-50	488.6667	1.19	-2.262
1,1-Dichloroethene	Decreasing	16	-76	491.3333	0.03	-3.429

The concentrations of trichloroethene, trichloroethene, cis-1,2-DCE, trans-1,2-DCE, VC, and 1,1-DCE all indicate a decreasing trend in concentrations. Tetrachloroethene, vinyl chloride, and 1,1-DCE were reported at concentrations below the Residential ^{GW}GW_{ing} PCL during the most recent sampling event in May 2021.

Well ID: MW-2

Several compounds exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-2. The following table shows the results for the Mann-Kendall Statistical Test for Trends for all groundwater monitoring data since the well was first installed.

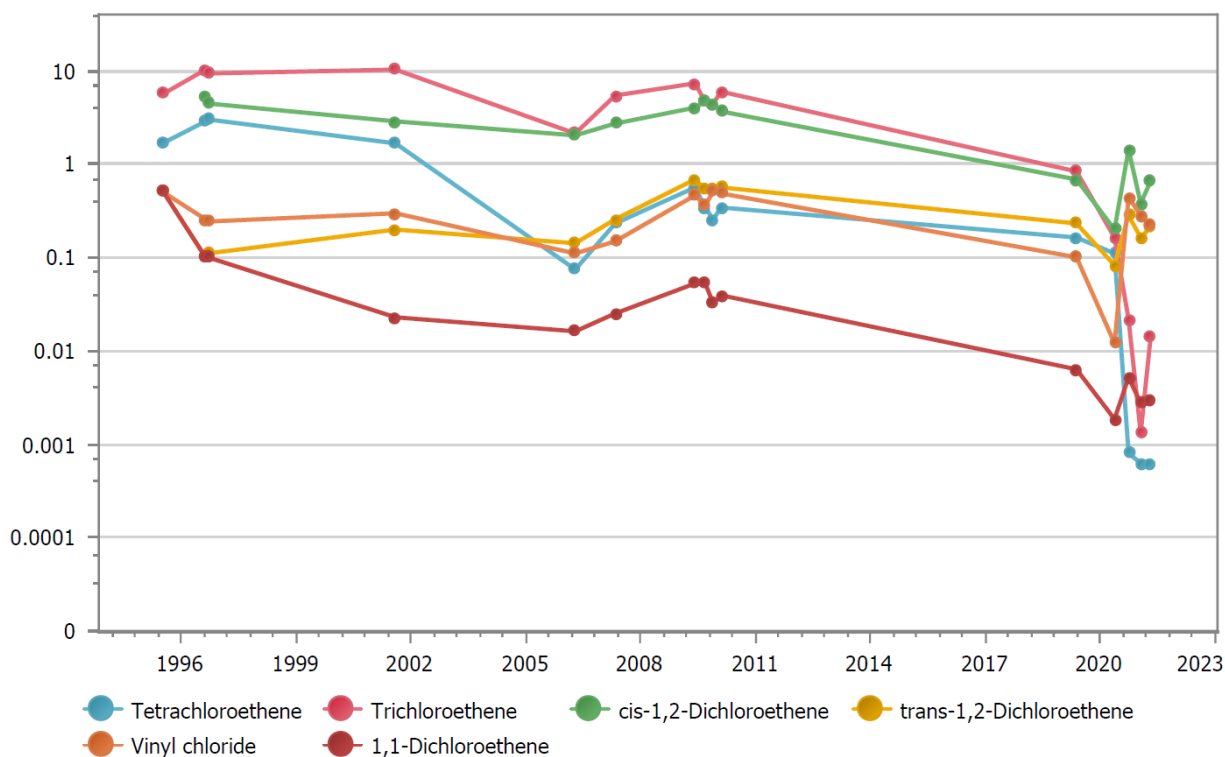


Parameter	Trend	Count	S	S Variance	S Prob	Z Value
Tetrachloroethene	Decreasing	14	-51	323.0000	0.23	-2.838
Trichloroethene	No Trend	14	-22	332.6667	11.39	-1.206
cis-1,2-Dichloroethene	No Trend	13	-15	267.6667	17.96	-0.917
trans-1,2-Dichloroethene	No Trend	14	-5	333.6667	39.21	-0.274
Vinyl chloride	No Trend	14	-27	333.6667	6.97	-1.478
1,1-Dichloroethene	No Trend	14	-22	332.6667	11.39	-1.206

The concentration of tetrachloroethene indicates a decreasing trend while the concentrations of trichloroethene, cis-1,2-DCE, trans-1,2-DCE, VC, and 1,1-DCE indicate a stable trend. Tetrachloroethene was reported at a concentration below the Residential ^{GW}GW_{Ing} PCL during the most recent sampling event in May 2021.

Well ID: MW-3

Several compounds exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-3. The following table shows the results for the Mann-Kendall Statistical Test for Trends for all groundwater monitoring data since the well was first installed.

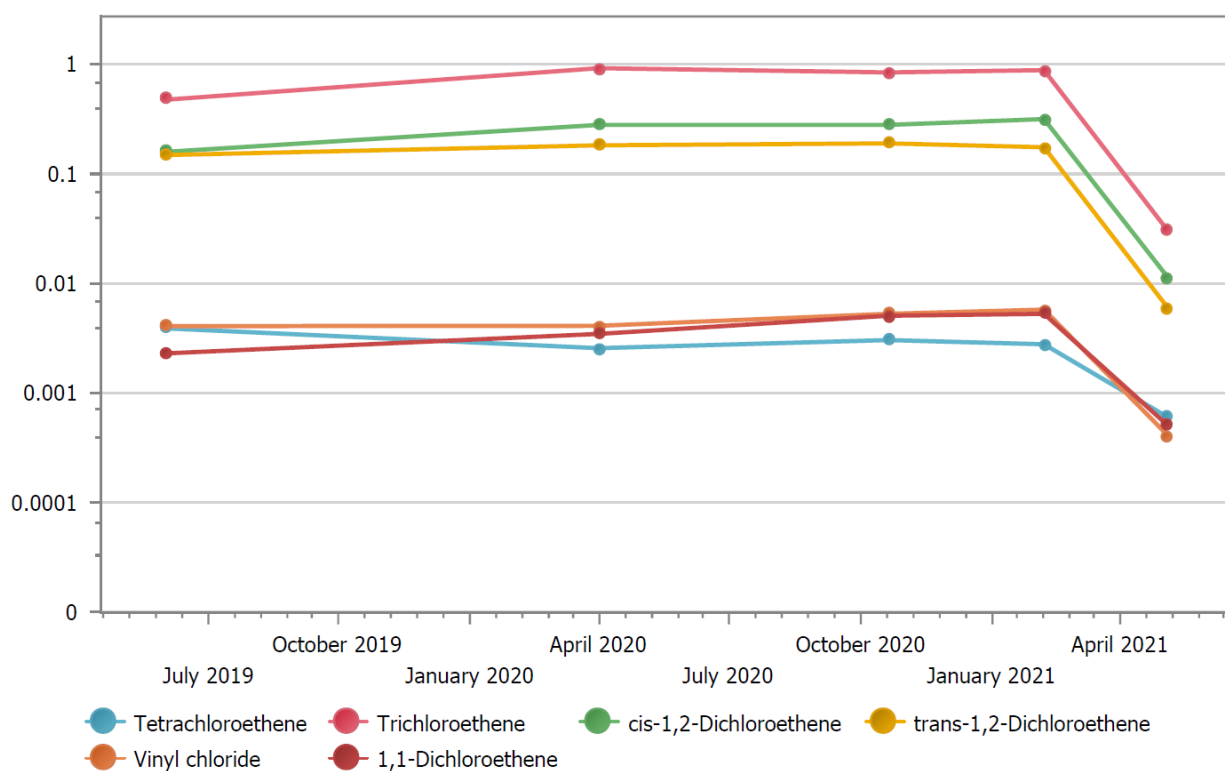


Parameter	Trend	Count	S	S Variance	S Prob	Z Value
Tetrachloroethene	Decreasing	15	-73	406.3333	0.01	-3.621
Trichloroethene	Decreasing	15	-71	408.3333	0.02	-3.514
cis-1,2-Dichloroethene	Decreasing	14	-49	333.6667	0.37	-2.682
trans-1,2-Dichloroethene	No Trend	15	9	408.3333	32.80	0.445
Vinyl chloride	No Trend	15	-14	407.3333	24.39	-0.694
1,1-Dichloroethene	Decreasing	15	-66	407.3333	0.05	-3.270

The concentrations of tetrachloroethene, trichloroethene, cis-1,2-DCE, and 1,1-DCE indicate a decreasing trend while the concentrations of trans-1,2-DCE and VC indicate a stable trend. Tetrachloroethene and 1,1-DCE were reported at concentrations below the Residential ^{GW}GW_{ing} PCL during the most recent sampling event in May 2021.

Well ID: MW-4

Several compounds exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-4. Tetrachloroethene and 1,1-DCE were not detected above the Tier 1 Residential ^{GW}GW_{Ing} PCL over the sampling history of this well. The following table shows the results for the Mann-Kendall Statistical Test for Trends for the chemicals of concern groundwater monitoring data since the well was first installed.

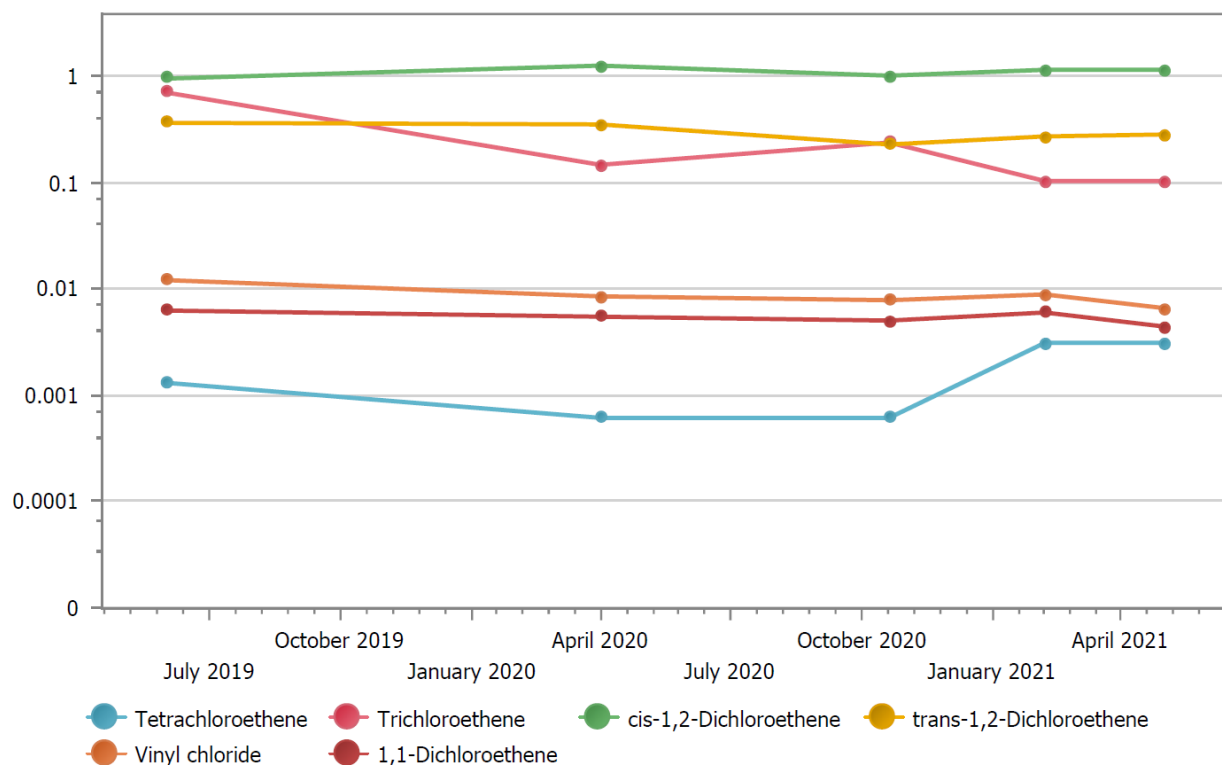


Parameter	Trend	Count	S	S Variance	S Prob	Z Value
Tetrachloroethene	No Trend	5	-6	16.6667	11.03	-1.225
Trichloroethene	No Trend	5	-2	16.6667	40.32	-0.245
cis-1,2-Dichloroethene	No Trend	5	1	15.6667	50.00	0.000
trans-1,2-Dichloroethene	No Trend	5	-2	16.6667	40.32	-0.245
Vinyl chloride	No Trend	5	0	16.6667	50.00	0.000
1,1-Dichloroethene	No Trend	5	2	16.6667	40.32	0.245

Stable trends are noted in all chemicals of concern for this monitoring well. Tetrachloroethene, cis-1,2-DCE, trans-1,2-DCE, VC, and 1,1-DCE were reported at concentrations below the Residential ^{GW}GW_{Ing} PCL during the most recent sampling event in May 2021.

Well ID: MW-5

Several compounds exceeded the Tier 1 Residential PCL for groundwater ingestion during the monitoring history for MW-5. The following table shows the results for the Mann-Kendall Statistical Test for Trends for all groundwater monitoring data since the well was first installed.



Parameter	Trend	Count	S	S Variance	S Prob	Z Value
Tetrachloroethene	No Trend	5	4	14.6667	21.67	0.783
Trichloroethene	No Trend	5	-7	15.6667	6.48	-1.516
cis-1,2-Dichloroethene	No Trend	5	3	15.6667	30.67	0.505
trans-1,2-Dichloroethene	No Trend	5	-4	16.6667	23.12	-0.735
Vinyl chloride	No Trend	5	-6	16.6667	11.03	-1.225
1,1-Dichloroethene	No Trend	5	-6	16.6667	11.03	-1.225

Stable trends are noted in all chemicals of concern for this monitoring well. Tetrachloroethene and 1,1-DCE were reported at concentrations less than the Residential ^{GW}GW_{ing} PCL during the most recent sampling event in May 2021.

Conclusions

In all groundwater monitoring wells, the trend is either stable or decreasing for all chemicals of concern for the subject property. Therefore, InControl Technologies has concluded that the overall plume is stable to decreasing.