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By Alameda County Environmental Health 11:21 am, Sep 13, 2017

12 September 2017

Mark Detterman, P.G., CEG
Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

Subject: Results of 20 July 2017 Soil Vapor Sampling and Recommendation for
Closure
Former Horton Street Underground Storage Tank
In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street,
Emeryville, California
Case No. RO0003185

Dear Mr. Detterman:

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached response letter submitted on my behalf to Alameda County Department of Environmental Health's FTP server and the State Water Resources Control Board's Geotracker Website.

If you have any questions or need additional information, please contact me at 510-596-4380.

Sincerely,

Michael A. Guina
City Attorney
City of Emeryville

Attachment: Results of 20 July 2017 Soil Vapor Sampling and Recommendation for
Closure

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Senior Hazardous Materials Specialist
Alameda County Department of Environmental Health
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Subject: Results of 20 July 2017 Soil Vapor Sampling and Recommendation for
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Emeryville, California
(EKI B20006.00 T7)

Dear Mr. Detterman:

EKI Environment & Water, Inc. ("EKI") (formerly known as Erler & Kalinowski, Inc.) is pleased to submit this letter on behalf of our client, the City of Emeryville as the Successor Agency to the Emeryville Redevelopment Agency ("Successor Agency"), summarizing results of the 20 July 2017 soil vapor sampling and the updated site conceptual model ("SCM") for the Former Horton Street Underground Storage Tank ("UST"), located in the public right-of-way on Horton Street adjacent to 5679 Horton Street in Emeryville, California ("Site"; see Figure 1). The UST at the Site was removed on 17 June 2015 in accordance with the Alameda County Department of Environmental Health ("ACDEH") approved Underground Storage Tank Closure Plan ("Closure Plan"; EKI, 2015a).

After UST removal, a data gap investigation was conducted in accordance with the *Data Gap Investigation Work Plan and Focused Site Conceptual Model* and the *Work Plan Addendum for Soil and Groundwater Investigation* (collectively referred to as "Work Plan") (EKI, 2016b; EKI, 2016c) and conditional approval comments provided by ACDEH in their letter dated 27 September 2016 (ACDEH, 2016). The data gap investigation was conducted between 30 January and 2 February 2017. A letter to ACDEH regarding the *Results of Data Gap Investigation*, dated 17 March 2017 ("Data Gap Report") (EKI, 2017), described the results of this investigation and stated that the remaining data gap scope of work to be completed was the collection of one additional soil vapor sample from soil vapor probe TSV01 during the dry season. Data gap investigation data are summarized

Formerly known as Erler & Kalinowski, Inc.

on Tables 1 to 4 and Figures 2a to 4, which were previously presented in the Data Gap Report. The ACDEH letter, dated 5 May 2017, indicated that closure of the site may be appropriate after collection of this additional soil vapor sample based on results presented in the Data Gap Report.

SUMMARY OF SOIL VAPOR SAMPLING ACTIVITIES AND ANALYTICAL RESULTS

An additional soil vapor sample was collected from soil vapor probe, TSV01, on 20 July 2017 in accordance with procedures described in the Work Plan and was analyzed for volatile organic compounds (“VOCs”) by a California-certified analytical laboratory.

VOCs in the soil vapor sample collected from probe TSV01 were not detected above screening criteria (Table 4)¹. Screening criteria for soil vapor are based on the following screening criteria for indoor air and the default attenuation factor of 0.001 between soil vapor and indoor air, which is based on the Department of Toxic Substances Control’s (“DTSC’s”) vapor intrusion assessment guidance (DTSC, 2011).

- Regional Water Quality Control Board (“RWQCB”) Environmental Screening Levels (“ESLs”) for commercial and industrial land use (RWQCB, 2016), where groundwater is a current or potential drinking water resource at shallow elevations based on the protection of human health and groundwater;
- United States Environmental Protection Agency (“U.S. EPA”) Regional Screening Levels (“RSLs”) for industrial land use (U.S. EPA, 2017); and
- DTSC Office of Human and Ecological Risk (“HERO”) Human Health Risk Assessment (“HHRA”), Note 3 (DTSC, 2017).

Field quality assurance and quality control (“QA/QC”) samples included 1 shroud sample.

- Shroud Sample: A shroud air sample was collected to allow for evaluation of potential leaks during soil vapor sample collection. The leak check compound was detected at 18,900 parts per million by volume (“ppmv”) in the shroud air sample and was not detected in the soil vapor sample (Table 1), which indicates that leaks of ambient air into the soil vapor sampling equipment set up did not affect the representativeness of the soil vapor sampling results.

¹ Screening criteria on Tables 2a to 3b were also updated as some of screening criteria have been updated since these tables were previously submitted with the Data Gap Report.

SITE CONCEPTUAL MODEL

The site conceptual model ("SCM") was updated to reflect results of the 20 July 2017 soil vapor sampling and is provided in tabular form (Table 5). Supporting data tables and figures include Tables 1 to 4, Figures 1 to 4, and additional information provided as attachments in the Work Plan and Data Gap Report. Tables 1 to 4 included the applicable updated screening criteria from 2017. The SCM provides a description of current land use, Site history, UST removal activities, geologic and hydrogeologic conditions, nature and extent of COCs in the subsurface, and neighboring sites with known environmental contamination. Based on the SCM, no data gaps were identified.

EVALUATION OF LOW THREAT CLOSURE POLICY CRITERIA

The SCM was used to evaluate whether or not the Site meets the low threat closure policy ("LTCP") criteria, as summarized on Table 6. Based on available data, the Site meets the LTCP criteria.


RECOMMENDATION FOR CLOSURE

As described above, the Site meets the LTCP criteria. Therefore, EKI recommends that the Site be closed and that the existing soil vapor probe, TSV01, be abandoned in accordance with field methods and procedures included in Attachment 2.

Please call if you have any questions or wish to discuss these matters in greater detail.

Very truly yours,

EKI ENVIRONMENT & WATER, INC.


Joy Su, P.E.
Project Manager




Earl James, P.G.
Vice President

REFERENCES

ACDEH, 2016. *Conditional Work Plan Approval*, Fuel Leak Case No. RO0003185 and GeoTracker Global ID T10000007323, Horton Street UST, 5679 Horton Street, Emeryville, CA 94608, 27 September 2016.

ACDEH, 2017. *Landowner Identification and Geotracker Compliance*, Fuel Leak Case No. RO0003185 and GeoTracker Global ID T10000007323, Horton Street UST, 5679 Horton Street, Emeryville, CA 94608, 5 May 2017.

DTSC, 2017. *Human Health Risk Assessment (HHRA) Note 3*, June 2017.

EKI, 2012. *Final Subsurface Environmental Investigations Report*, 5679 Horton Street, Former Marchant/Whitney Site, Emeryville, California, Erler & Kalinowski, Inc., August, 2012.

EKI, 2015a. *Underground Storage Tank Closure Plan*, 5679 Horton Street, Emeryville, California, 14 April 2015.

EKI, 2015b. *Underground Storage Tank Closure Report*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 17 August 2015.

EKI, 2016a. *Final Remedial Investigation Report*, Former Marchant/Whitney Site, 5679 Horton Street, Emeryville, California, June 2016.

EKI, 2016b. *Data Gap Investigation Work Plan and Focused Site Conceptual Model*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 29 July 2016.

EKI, 2016c. *Work Plan Addendum for Soil and Groundwater Investigation*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 7 November 2016.

EKI, 2017. *Results of Data Gap Investigation*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 17 March 2017.

RWQCB, 2016, Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater, Interim Final, California Regional Water Quality Control Board, San Francisco Bay Region, February 2016.

SWRCB, 2012. Low-Threat Underground Storage Tank Case Closure Policy. Adopted in Resolution No. 2012-0016, 1 May 2012.

U.S. EPA, 2017. Regional Screening Levels, November 2015, June 2017 Update.

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ATTACHMENTS

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TABLE 1
Summary of Analytical Results for UST Liquid Contents Sample
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Depth (ft bgs) | Sample Type | Analytical Results in mg/kg (a)(b) | | | | | | | | | | | | | | | | | |
|-----------------|-----------|-------------|-----------------------|-------------|------------------------------------|---------|---------|---------|--------------|------------------|------|-------------|----------------|-----------------|------------------|---------|--------------|------------|-----------|-----------|--------------------|------------|
| | | | | | TPH | | | VOCs | | | | | | | | | | | | | | |
| | | | | | TPH-g | TPH-d | TPH-mo | Benzene | Ethylbenzene | Isopropylbenzene | MTBE | Naphthalene | N-butylbenzene | N-propylbenzene | Sec-butylbenzene | Toluene | Xylene (m,p) | Xylene (o) | 1,2,4-TMB | 1,3,5-TMB | 4-isopropyltoluene | Other VOCs |
| H-H | H-H-6.5-9 | 5/5/2015 | 6.5 - 9.0 | Product | 15,900 | 731,000 | <40,000 | <40 | 72.9 | 44.4 | <40 | 1,000 | 140 | 83.5 | 63.8 | <40 | 295 | 81.5 | 631 | 197 | 77 | ND |

Abbreviations

<40,000 = not detected at or above indicated laboratory detection limit
ft bgs = feet below ground surface
mg/kg = milligrams per kilogram
MTBE = Methyl tert-butyl ether
ND = not detected
TMB = trimethylbenzene
TPH-(g/d/mo) = total petroleum hydrocarbons as (gasoline/diesel/motor oil)
UST = underground storage tank
VOCs = volatile organic compounds

Notes

(a) Samples analyzed by K-Prime, Inc., Santa Rosa, CA using EPA Method 8260B for TPH-g and VOCs.
(b) Analytical results are listed in units of milligrams of contaminant per kilogram of product.

TABLE 2a
Summary of Analytical Results for TPH and Metals in Soil Samples
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Depth (ft bgs) | Analytical Results in mg/kg dry weight (a)(b) | | | | | | | | |
|---|-----------------|-------------|-----------------------|---|--------------|--------------|-------------|-----------------|------------|---------------|----------------|--|
| | | | | TPH | | | Metals | | | | | |
| | | | | TPH-g | TPH-d | TPH-mo | Cadmium | Chromium, total | Lead | Nickel | Zinc | |
| UST Piping-related Samples (c) | | | | | | | | | | | | |
| HUST -PPNG | HUST-PPNG01-2.5 | 6/17/2015 | 2.5 | <1.00 | 180 (AC) | 252 | <3.14 | 27.8 | 10.1 | 35.6 | 43.3 | |
| | HUST-PPNG02-2.0 | 6/17/2015 | 2.0 | 4.92 | 225 (AC) | 330 | 3.16 | 31.1 | 46.1 | 47.6 | 97.1 | |
| | HUST-PPNG03-2.0 | 6/17/2015 | 2.0 | 13.1 | 1,020 | 232 | <2.92 | 37.8 | 37.2 | 53.4 | 134 | |
| | HUST-PPNG04-2.5 | 6/17/2015 | 2.5 | <1.00 | 350 (AC) | 427 | 6.82 | 29.1 | 121 | 190 | 2,620 | |
| UST Excavation Sidewall Samples | | | | | | | | | | | | |
| HUST-SW | HUST-SW01-7.0 | 6/17/2015 | 7.0 | 2.96 | 1,080 | 164 | <2.94 | 32.0 | 6.13 | 34.5 | 35.4 | |
| | HUST-SW02-7.0 | 6/17/2015 | 7.0 | 4.66 | 267 | 53.3 | 7.97 | 36.0 | 15.8 | 38.5 | 84.2 | |
| | HUST-SW03-7.0 | 6/17/2015 | 7.0 | 5.70 | 1,290 | 120 | <2.71 | 32.2 | 26.1 | 37.7 | 53.1 | |
| | HUST-SW04-7.0 | 6/17/2015 | 7.0 | 6.31 | 4,440 | 534 | <2.92 | 31.3 | 5.37 | 25.7 | 31.2 | |
| UST Excavation Floor Samples | | | | | | | | | | | | |
| HUST-F | HUST-F01-9.5 | 6/17/2015 | 9.5 | <1.00 | <12.0 | <12.0 | <3.01 | 42.7 | 7.39 | 58.1 | 66.1 | |
| | HUST-F02-9.5 | 6/17/2015 | 9.5 | <1.00 | <11.8 | <11.8 | <2.96 | 45.6 | 8.54 | 56.1 | 65.3 | |
| Samples From Data Gap Investigation | | | | | | | | | | | | |
| TW | TW-3.5-4.0 | 1/30/2017 | 3.5 to 4.0 | <1.00 | <12.1 | <12.1 | -- | -- | -- | -- | -- | |
| | TW-6.5-7.0 | 1/30/2017 | 6.5 to 7.0 | <1.00 | 115 | 17.2 | -- | -- | -- | -- | -- | |
| TSW | TSW-3.5-4.0 | 1/30/2017 | 3.5 to 4.0 | <1.00 | <12.9 | <12.9 | -- | -- | -- | -- | -- | |
| | TSW-6.5-7.0 | 1/30/2017 | 6.5 to 7.0 | <1.00 | <12.6 | <12.6 | -- | -- | -- | -- | -- | |
| TS | TS-3.5-4.0 | 1/31/2017 | 3.5 to 4.0 | <1.00 | <13.2 | <13.2 | -- | -- | -- | -- | -- | |
| | TS-7.5-8.0 | 1/31/2017 | 7.5 to 8.0 | 14.4 | 87.9 | 95.7 | -- | -- | -- | -- | -- | |
| TSX01 | TSX01-3.5-4.0 | 2/2/2017 | 3.5 to 4.0 | <1.00 | <12.9 | <12.9 | -- | -- | -- | -- | -- | |
| | TXS01-7.5-8.0 | 2/2/2017 | 7.5 to 8.0 | 165 | 116 (AC) | 94.3 | -- | -- | -- | -- | -- | |
| TSX02 | TSX02-3.5-4.0 | 2/2/2017 | 3.5 to 4.0 | <1.00 | <12.6 | <12.6 | -- | -- | -- | -- | -- | |
| | TXS02-7.5-8.0 | 2/2/2017 | 7.5 to 8.0 | <1.00 | <12.7 | <12.7 | -- | -- | -- | -- | -- | |
| TSX01X | TSX01X-3.5-4.0 | 2/2/2017 | 3.5 to 4.0 | <1.00 | <12.9 | <12.9 | -- | -- | -- | -- | -- | |
| | TXS01X-7.5-8.0 | 2/2/2017 | 7.5 to 8.0 | <1.00 | 13.6 | <12.6 | -- | -- | -- | -- | -- | |
| RWQCB ESL - Comm./Ind. - Direct Exposure (d) | | | | 2,800 | 1,100 | 5,100 | 43 | <i>na</i> | 160 | 86 | 110,000 | |
| U.S. EPA RSL - Ind. (e) | | | | <i>na</i> | <i>na</i> | <i>na</i> | 980 | | 800 | 22,000 | 350,000 | |
| DTSC HERO HHRA Note 3 - Comm./Ind. (f) | | | | <i>na</i> | <i>na</i> | <i>na</i> | 7.3 | <i>na</i> | 320 | 3,100 | <i>na</i> | |

TABLE 2a
Summary of Analytical Results for TPH and Metals in Soil Samples
Former Horton Street UST
5679 Horton Street, Emeryville, California

Abbreviations

<2.96 = not detected at or above laboratory detection limit

AC = Heavier hydrocarbons contributing to diesel range quantification

DTSC = Department of Toxic Substances Control

ESL = environmental screening level

ft bgs = feet below ground surface

mg/kg = milligrams per kilogram

na = not applicable

RSL = regional screening level

RWQCB = Regional Water Quality Control Board, San Francisco Bay region

TPH-(g/d/mo) = total petroleum hydrocarbons as (gasoline/diesel/motor oil)

U.S. EPA = United States Environmental Protection Agency

UST = underground storage tank

Notes

(a) Samples analyzed by K-Prime, Inc., Santa Rosa, CA using EPA Method 8015B for TPH-g/-d/-mo, and EPA Method 6020 for metals.

(b) **Bold** value indicates detected concentration exceeds one or more soil screening criteria.

(c) Grayed out and striked-through confirmation soil sample locations have been over-excavated during UST excavation activities.

(d) Selected screening levels are the most stringent ESL found in Table S-1 (RWQCB, 2016), excluding ESLs based on residential land use.

(e) Screening levels based on U.S. EPA's RSLs for industrial land use (TR=1E-6, HQ=1).

(f) Screening levels based on DTSC's Human Health Risk Assessment (HERO HHRA) Guidance for commercial/industrial land use, as listed in Note 3, table 1.

References

(1) DTSC HERO, 2017. Human Health Risk Assessment Note Number: 3, June 2017.

(2) RWQCB, 2016. ESLs from User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final 2016, San Francisco Bay Regional Water Quality Control Board, February 2016, Revision 3.

(3) US EPA, 2017. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites, RSL Table Update, June 2017.

TABLE 2b
Summary of Analytical Results for VOCs and PCBs in Soil Samples
 Former Horton Street UST
 5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Depth (ft bgs) | Analytical Results in mg/kg dry weight (a)(b) | | | | | | | | | | | | | PCBs | | |
|---|-----------------|-------------|-----------------------|---|--------------|--------------|---------------|-----------------|--------------|--------------|--------------|--------------|--------------|------------|--------------|--------------|--------------|--------------|------------|
| | | | | VOCs | | | | | | | | | | | Other VOCs | | Aroclor 1254 | Aroclor 1260 | Other PCBs |
| | | | | Benzene | cis-1,2-DCE | Ethylbenzene | Toluene | Trichloroethene | MTBE | Naphthalene | Xylene (m,p) | Xylene (o) | 1,2,4-TMB | Other VOCs | Aroclor 1254 | Aroclor 1260 | Other PCBs | | |
| UST Piping-related Samples (c) | | | | | | | | | | | | | | | | | | | |
| HUST -PPNG | HUST-PPNG01-2.5 | 6/17/2015 | 2.5 | <0.00188 | <0.00188 | <0.00188 | <0.00188 | 0.00188 | <0.00188 | <0.00376 | <0.00188 | <0.00188 | <0.00188 | ND | 0.0278 | 0.219 | ND | | |
| | HUST-PPNG02-2.0 | 6/17/2015 | 2.0 | <0.00175 | <0.00175 | <0.00175 | <0.00175 | 0.01 | <0.00175 | 0.00703 | <0.00175 | <0.00175 | <0.00175 | ND | <0.0252 | 0.0264 | ND | | |
| | HUST-PPNG03-2.0 | 6/17/2015 | 2.0 | <0.235 | <0.235 | <0.235 | <0.235 | <0.235 | <0.235 | <0.471 | <0.235 | <0.235 | 0.258 | ND | <0.0252 | <0.0252 | ND | | |
| | HUST-PPNG04-2.5 | 6/17/2015 | 2.5 | <0.00148 | 0.00174 | <0.00148 | <0.00148 | 0.00228 | <0.00148 | 0.00404 | <0.00148 | <0.00148 | <0.00148 | ND | <0.0252 | <0.0252 | ND | | |
| UST Excavation Sidewall Samples | | | | | | | | | | | | | | | | | | | |
| HUST-SW | HUST-SW01-7.0 | 6/17/2015 | 7.0 | <0.236 | <0.236 | <0.236 | <0.236 | <0.236 | <0.236 | <0.471 | <0.236 | <0.236 | <0.236 | ND | <0.0252 | <0.0252 | ND | | |
| | HUST-SW02-7.0 | 6/17/2015 | 7.0 | <0.251 | <0.251 | <0.251 | <0.251 | <0.251 | <0.251 | <0.501 | <0.251 | <0.251 | <0.251 | ND | <0.0252 | 0.0332 | ND | | |
| | HUST-SW03-7.0 | 6/17/2015 | 7.0 | <1.08 | <1.08 | <1.08 | <1.08 | <1.08 | <1.08 | 5.42 | <1.08 | <1.08 | 2.05 | ND | <0.0252 | <0.0252 | ND | | |
| | HUST-SW04-7.0 | 6/17/2015 | 7.0 | <0.234 | <0.234 | <0.234 | <0.234 | <0.234 | <0.234 | <0.467 | <0.234 | <0.234 | <0.234 | ND | <0.0252 | <0.0252 | ND | | |
| UST Excavation Floor Samples | | | | | | | | | | | | | | | | | | | |
| HUST-F | HUST-F01-9.5 | 6/17/2015 | 9.5 | <0.00178 | <0.00178 | <0.00178 | <0.00178 | <0.00178 | <0.00178 | <0.00356 | <0.00178 | <0.00178 | <0.00178 | ND | <0.0252 | <0.0252 | ND | | |
| | HUST-F02-9.5 | 6/17/2015 | 9.5 | <0.00177 | <0.00177 | <0.00177 | <0.00177 | <0.00177 | <0.00177 | <0.00355 | <0.00177 | <0.00177 | <0.00177 | ND | <0.0252 | <0.0252 | ND | | |
| Samples From Data Gap Investigation | | | | | | | | | | | | | | | | | | | |
| TW | TW-3.5-4.0 | 1/30/2017 | 3.5 to 4.0 | <0.00157 | <0.00157 | <0.00157 | <0.00157 | <0.00157 | <0.00157 | <0.00313 | <0.00157 | <0.00157 | <0.00157 | ND | -- | -- | -- | | |
| | TW-6.5-7.0 | 1/30/2017 | 6.5 to 7.0 | <0.00156 | <0.00156 | <0.00156 | <0.00156 | <0.00156 | <0.00156 | <0.00312 | <0.00156 | <0.00156 | <0.00156 | ND | -- | -- | -- | | |
| TSW | TSW-3.5-4.0 | 1/30/2017 | 3.5 to 4.0 | <0.00169 | <0.00169 | <0.00169 | <0.00169 | <0.00169 | <0.00169 | <0.00339 | <0.00169 | <0.00169 | <0.00169 | ND | -- | -- | -- | | |
| | TSW-6.5-7.0 | 1/30/2017 | 6.5 to 7.0 | <0.00164 | <0.00164 | <0.00164 | <0.00164 | <0.00164 | <0.00164 | <0.00328 | <0.00164 | <0.00164 | <0.00164 | ND | -- | -- | -- | | |
| TSW | TS-3.5-4.0 | 1/31/2017 | 3.5 to 4.0 | <0.00134 | <0.00134 | <0.00134 | <0.00134 | <0.00134 | <0.00134 | <0.00267 | <0.00134 | <0.00134 | <0.00134 | ND | -- | -- | -- | | |
| | TS-7.5-8.0 | 1/31/2017 | 7.5 to 8.0 | <0.0169 | <0.0169 | <0.0169 | <0.0169 | <0.0169 | <0.0169 | <0.0338 | <0.0169 | <0.0169 | <0.0169 | ND | -- | -- | -- | | |
| TSX01 | TSX01-3.5-4.0 | 2/2/2017 | 3.5 to 4.0 | <0.00176 | <0.00176 | <0.00176 | <0.00176 | <0.00176 | <0.00176 | <0.00352 | <0.00176 | <0.00176 | <0.00176 | ND | -- | -- | -- | | |
| | TSX01-7.5-8.0 | 2/2/2017 | 7.5 to 8.0 | <0.0222 | <0.0222 | <0.0222 | <0.0222 | <0.0222 | <0.0222 | <0.0443 | <0.0222 | <0.0222 | <0.0222 | ND | -- | -- | -- | | |
| TSX02 | TSX02-3.5-4.0 | 2/2/2017 | 3.5 to 4.0 | <0.00163 | <0.00163 | <0.00163 | <0.00163 | <0.00163 | <0.00163 | <0.00325 | <0.00163 | <0.00163 | <0.00163 | ND | -- | -- | -- | | |
| | TSX02-7.5-8.0 | 2/2/2017 | 7.5 to 8.0 | <0.00165 | <0.00165 | <0.00165 | <0.00165 | <0.00165 | <0.00165 | <0.00330 | <0.00165 | <0.00165 | <0.00165 | ND | -- | -- | -- | | |
| TSX01X | TSX01X-3.5-4.0 | 2/2/2017 | 3.5 to 4.0 | <0.00166 | <0.00166 | <0.00166 | <0.00166 | <0.00166 | <0.00166 | <0.00333 | <0.00166 | <0.00166 | <0.00166 | ND | -- | -- | -- | | |
| | TSX01X-7.5-8.0 | 2/2/2017 | 7.5 to 8.0 | <0.00163 | <0.00163 | <0.00163 | <0.00163 | <0.00163 | <0.00163 | <0.00327 | <0.00163 | <0.00163 | <0.00163 | ND | -- | -- | -- | | |
| RWQCB ESL - Comm./Ind. (d) | | | | 0.044 | 0.19 | 1.38 | 2.9 | 0.46 | 0.023 | 0.033 | 2.3 | 2.3 | na | -- | na | na | -- | | |
| U.S. EPA RSL - Ind. (e) | | | | 5.1 | 2,300 | 25 | 47,000 | 6.0 | 210 | 17 | 2,500 | 2,500 | 1,800 | -- | 0.97 | 0.99 | -- | | |
| DTSC HERO HHRA Note 3 - Comm./Ind. (f) | | | | 1.4 | 86 | na | 5,400 | na | na | na | na | na | na | -- | na | na | -- | | |

Abbreviations

<2.96 = not detected at or above laboratory detection limit
 DCE = dichloroethene
 DTSC = California Department of Toxic Substances Control
 ESL = environmental screening level
 ft bgs = feet below ground surface
 mg/kg = milligrams per kilogram

MTBE = Methyl tert-butyl ether
 na = not applicable
 PCBs = poly-chlorinated biphenyls
 RSL = regional screening level
 RWQCB = Regional Water Quality Control Board, San Francisco Bay Region
 SVOCs = semi-volatile organic compounds

TMB = trimethylbenzene
 VOCs = volatile organic compounds
 U.S. EPA = United States Environmental Protection Agency
 UST = underground storage tank

Notes

- (a) Samples analyzed by K-Prime, Inc., Santa Rosa, CA using EPA method 8260B for VOCs, EPA Method 8270 for SVOCs, and EPA Method 8082A for PCBs.
- (b) **Bold** value indicates detected concentration exceeds one or more soil screening criteria.
- (c) Grayed out confirmation soil sample locations have been over-excavated during UST demolition activities.
- (d) Selected screening levels are the most stringent ESL found in Tables S-1 through S-4 (RWQCB, 2016), excluding ESLs based on residential land use and protection of nondrinking water.
- (e) Screening levels based on U.S. EPA RSLs for industrial land use (TR=1E-6, HQ=1).
- (f) Screening levels based on DTSC's Human Health Risk Assessment (HERO HHRA) Guidance for commercial/industrial land use, as listed in Note 3, table 1.

References

- (1) DTSC HERO, 2017. Human Health Risk Assessment Note Number: 3, June 2017.
- (2) RWQCB, 2016. ESLs from User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final 2016, San Francisco Bay Regional Water Quality Control Board, February 2016, Revision 3.
- (3) US EPA, 2017. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites, RSL Table Update, June 2017.

TABLE 2c
Summary of Analytical Results for SVOCs in Soil Samples
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Depth (ft bgs) | Analytical Results in mg/kg dry weight (a)(b) | | | | | | | | | | | | | BaPe | Other SVOCs |
|---|-----------------|-------------|-----------------------|---|---------------|--------------|--------------|----------------------|--------------------|----------------|----------------------|----------------------|--------------|-----------------------|-------------|-------------------|------|-------------|
| | | | | SVOCs | | | | | | | | | | | PAHs | | | |
| | | | | Anthracene | Fluorene | Naphthalene | Phenanthrene | 2-methyl naphthalene | Benzo(a)anthracene | Benzo(a)pyrene | Benzo(b)fluoranthene | Benzo(k)fluoranthene | Chrysene | Dibenz(a,h)anthracene | | Indeno(1,2,3-c,d) | | |
| UST Piping-related Samples (c) | | | | | | | | | | | | | | | | | | |
| HUST -PPNG | HUST-PPNG01-2.5 | 6/17/2015 | 2.5 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| | HUST-PPNG02-2.0 | 6/17/2015 | 2.0 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | ND | ND |
| | HUST-PPNG03-2.0 | 6/17/2015 | 2.0 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | ND | ND |
| | HUST-PPNG04-2.5 | 6/17/2015 | 2.5 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | <1.66 | ND | ND |
| UST Excavation Sidewall Samples | | | | | | | | | | | | | | | | | | |
| HUST-SW | HUST-SW01-7.0 | 6/17/2015 | 7.0 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| | HUST-SW02-7.0 | 6/17/2015 | 7.0 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| | HUST-SW03-7.0 | 6/17/2015 | 7.0 | <0.333 | 1.39 | 2.15 | 2.07 | 8.28 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| | HUST-SW04-7.0 | 6/17/2015 | 7.0 | 2.04 | 1.35 | <0.333 | 1.24 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| UST Excavation Floor Samples | | | | | | | | | | | | | | | | | | |
| HUST-F | HUST-F01-9.5 | 6/17/2015 | 9.5 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| | HUST-F02-9.5 | 6/17/2015 | 9.5 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | <0.333 | ND | ND |
| RWQCB ESL - Comm./Ind. (d) | | | | 2.8 | 8.9 | 0.033 | 10.7 | 0.25 | 2.9 | 0.29 | 2.9 | 2.6 | 3.8 | 0.29 | 2.9 | -- | -- | |
| U.S. EPA RSL - Ind. (e) | | | | 230,000 | 30,000 | 17 | na | 3,000 | 21.0 | 2.10 | 21.0 | 210 | 2,100 | 2.10 | 21.0 | -- | -- | |
| DTSC HERO HHRA Note 3 - Comm./Ind. (f) | | | | na | na | na | na | na | na | na | na | na | na | na | na | -- | -- | |

Abbreviations

<2.96 = not detected at or above laboratory detection limit
BaPe = benzo(a)pyrene toxicity equivalent
DTSC = California Department of Toxic Substances Control
ESL = environmental screening level

ft bgs = feet below ground surface
mg/kg = milligrams per kilogram
na = not applicable
PAHs = polycyclic aromatic hydrocarbons

RSL = regional screening level
RWQCB = Regional Water Quality Control Board, San Francisco Bay Region
SVOCs = semi-volatile organic compounds
U.S. EPA = United States Environmental Protection Agency
UST = underground storage tank

Notes

- (a) Samples analyzed by K-Prime, Inc., Santa Rosa, CA using EPA method 8260B for VOCs, EPA Method 8270 for SVOCs, and EPA Method 8082A for PCBs.
- (b) **Bold** value indicates detected concentration exceeds one or more soil screening criteria.
- (c) Grayed out confirmation soil sample locations have been over-excavated during UST demolition activities.
- (d) Selected screening levels are the most stringent ESL found in Tables S-1 through S-4 (RWQCB, 2016), excluding ESLs based on residential land use and protection of nondrinking water.
- (e) Screening levels based on U.S. EPA RSLs for industrial land use (TR=1E-6, HQ=1).
- (f) Screening levels based on DTSC's Human Health Risk Assessment (HERO HHRA) Guidance for commercial/industrial land use, as listed in Note 3, table 1.

References

- (1) DTSC HERO, 2017. Human Health Risk Assessment Note Number: 3, June 2017.
- (2) RWQCB, 2016. ESLs from User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final 2016, San Francisco Bay Regional Water Quality Control Board, February 2016, Revision 3.
- (3) US EPA, 2017. Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites, RSL Table Update, June 2017.

TABLE 3a
Summary of Analytical Results for TPH and VOCs Grab Groundwater Samples
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Depth (ft bgs) | Analytical Results in ug/L (a)(b) | | | | | | | | | | | | | | | | | | | | | | | |
|--|-----------------|-------------|-----------------------|-----------------------------------|-----------------|------------|-------------|-------------|--------------|------------------|-------------|--------|----------------|-----------------|------------------|---------|-----------------|---------------|----------------|-------------|-----------|-------------|-------------|---------|-----------|-----------|------------|
| | | | | TPH | | | VOCs | | | | | | | | | | | | | | | | | | | | |
| | | | | TPH-g | TPH-d (e) | TPH-mo (e) | Benzene | cis-1,2-DCE | Ethylbenzene | Isopropylbenzene | Naphthalene | MTBE | n-butylbenzene | n-propylbenzene | sec-butylbenzene | Toluene | Trichloroethene | trans-1,2-DCE | Vinyl Chloride | Xylenes-m,p | Xylenes-o | 1,1-DCA | 1,1-DCE | 1,2-DCA | 1,2,4-TMB | 1,3,5-TMB | Other VOCs |
| H-H | H-H-19-24 | 5/5/2015 | 19 - 24 | 781 (AE,CO) | 403 | 403 | <10.0 | 185 | <10.0 | <10.0 | <20.0 | <10.0 | <10.0 | <10.0 | <10.0 | <10.0 | 1,530 | 123 | 10.6 | <10.0 | <10.0 | <10.0 | 24.1 | <10.0 | <10.0 | ND | |
| | H-H-28-32 | 5/5/2015 | 28 - 32 | -- | -- | -- | 2.92 | <0.500 | 3.60 | 1.17 | 35.9 | -- | 2.14 | 1.82 | 1.09 | <0.500 | <0.500 | <0.500 | <0.500 | 15.0 | 5.13 | <0.500 | <0.500 | <0.5 | 15.9 | 4.58 | ND |
| | H-H-42-46 | 5/5/2015 | 42 - 46 | -- | -- | -- | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | -- | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| Samples From Data Gap Investigation | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TW | TW-4-14 | 1/30/2017 | 4 - 14 | <50 | 369 (AC) | 185 | <0.500 | 7.63 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 2.38 | 5.40 | 1.19 | <0.500 | <0.500 | 0.930 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| TSW | TSW-5-15 | 1/31/2017 | 5 - 15 | 50 (CO) | 150 | 116 | <0.500 | 1.59 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| | TSW-5-15-DUP | 1/31/2017 | 5 - 15 | 67 (CO) | 144 | 108 | <0.500 | 1.81 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 0.510 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| TS | TS-5-15 | 2/1/2017 | 5 - 15 | <50 | 335 | 135 | <0.500 | 2.73 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| TC | TC-4.5-14.5 | 2/1/2017 | 4.5 - 14.5 | 74 | 818 (AC) | 419 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| TN | TN-5.5-15.5 | 2/1/2017 | 5.5 - 15.5 | 173 (CO) | 109 | 95 | <1.00 | 75.4 | <1.00 | <1.00 | <2.00 | <1.00 | <1.00 | <1.00 | <1.00 | <1.00 | 14.4 | 89.6 | 45.9 | <1.00 | <1.00 | 18.3 | 2.71 | <1.00 | <1.00 | <1.00 | ND |
| TSX01 | TSX01-5.5-15.5 | 2/2/2017 | 5.5 - 15.5 | <50 | 110 | 88 | <0.500 | 4.50 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | 2.24 | 0.810 | <0.500 | <0.500 | <0.500 | <0.500 | 0.830 | <0.500 | <0.500 | ND | |
| TSX02 | TSX02-5-15 | 2/2/2017 | 5.5 - 15.5 | <50 | 175 | 108 | <0.500 | 0.510 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND | |
| TSX01X | TSX01X-5.5-15.5 | 2/2/2017 | 5.5 - 15.5 | <50 | 284 | 127 | <0.500 | <0.500 | <0.500 | <0.500 | <1.00 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | <0.500 | ND |
| MCLs (c) | | | | <i>na</i> | <i>na</i> | <i>na</i> | 1.0 | 6.0 | 300 | <i>na</i> | <i>na</i> | 13 | <i>na</i> | <i>na</i> | <i>na</i> | 150 | 5.0 | 10 | 0.50 | 1,750 | 1,750 | 5 | 6 | 0.50 | <i>na</i> | <i>na</i> | -- |
| RWQCB ESL - Comm./Ind. (d) | | | | 100 | 100 | 100 | 1.0 | 6.0 | 30 | <i>na</i> | 0.17 | 5.0 | <i>na</i> | <i>na</i> | <i>na</i> | 40 | 5.0 | 10 | 0.50 | 20 | 20 | 5 | 6 | 0.50 | <i>na</i> | <i>na</i> | -- |

Abbreviations

<0.5 = not detected at or above laboratory detection limit

-- = not analyzed

AC = Heavier hydrocarbons contributing to diesel range quantitation

AE = Unknown hydrocarbon with a single peak

CO = Hydrocarbon response in gasoline range but does not resemble gasoline

DCA = dichloroethane

DCE = dichloroethene

EPA = Environmental Protection Agency

ESL = environmental screening level

ft bgs = feet below ground surface

MCLs = Maximum Contaminant Levels

MTBE = Methyl tert-butyl ether

na = not applicable

ND = not detected

RWQCB - Regional Water Quality Control Board, San Francisco Bay Region

TMB = Trimethylbenzene

TPH-(g/d) = total petroleum hydrocarbons as (gasoline/diesel)

ug/L = micrograms per liter

UST = underground storage tank

VOCs = volatile organic compounds

Notes

(a) Samples analyzed by K-Prime, Inc., Santa Rosa, CA using EPA Method 8260 for VOCs, EPA Method 8015B for TPH-g, TPH-d, and TPH-mo, and EPA Method 200.8 for metals.

(b) **Bold** value indicates detected concentration exceeds one or more groundwater screening criteria.

(c) Screening levels based on California Department of Public Health's Drinking Water MCLs.

(d) Selected screening levels are the most stringent ESLs found in Tables GW-1 through GW-5 (RWQCB, 2016), excluding ESLs based on human health risk based only, aquatic receptors, shallow groundwater exposure, deep groundwater residential exposure, deep groundwater commercial/industrial sand scenario, and protection of nondrinking water.

(e) Silica gel cleanup performed for samples H-H-19-24, H-H-28-32, and H-H-42-46.

References

(1) CDPH, 2016. *Drinking Water Maximum Contaminant Levels*, California Department of Public Health, September 2016.

(2) RWQCB, 2016. *ESLs from User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*, Interim Final 2016, San Francisco Bay Regional Water Quality Control Board, February 2016, Revision 3.

TABLE 3b
Summary of Analytical Results for Metals for Grab Groundwater Samples
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Depth (ft bgs) | Analytical Results for Dissolved Title 22 Metals in ug/L (a)(b) | | | | | | |
|-----------------------------------|-----------|-------------|-----------------------|---|-------------|--------------|------------|------------|--------------|-----------------------|
| | | | | Barium | Cobalt | Copper | Molybdenum | Nickel | Zinc | Other Title 22 Metals |
| H-H | H-H-19-24 | 5/5/2015 | 19 - 24 | 127 | 17.4 | 1.36 | 25.5 | 16.6 | 13.4 | ND |
| | H-H-28-32 | 5/5/2015 | 28 - 32 | -- | -- | -- | -- | -- | -- | -- |
| | H-H-42-46 | 5/5/2015 | 42 - 46 | -- | -- | -- | -- | -- | -- | -- |
| MCLs (c) | | | | 1,000 | na | 1,300 | na | 100 | na | -- |
| RWQCB ESL - Comm./Ind. (d) | | | | 1,000 | 4.7 | 1,000 | 78 | 100 | 5,000 | -- |

Abbreviations

-- = not analyzed

ESL = environmental screening level

EPA = Environmental Protection Agency

ft bgs = feet below ground surface

MCLs = Maximum Contaminant Levels

na = not applicable

ND = not detected

RWQCB - Regional Water Quality Control Board, San Francisco Bay Regi

ug/L = micrograms per liter

UST = underground storage tank

Notes

(a) Samples analyzed by K-Prime, Inc., Santa Rosa, CA using EPA Method 200.8 for metals.

(b) **Bold** value indicates detected concentration exceeds one or more groundwater screening criteria.

(c) Screening levels based on California Department of Public Health's Drinking Water MCLs.

(d) Selected screening levels are the most stringent ESLs found in Tables GW-1 through GW-5 (RWQCB, 2016), excluding ESLs based on human health risk based only, aquatic receptors, shallow groundwater exposure, deep groundwater residential exposure, deep groundwater commercial/industrial sand scenario, and protection of nondrinking water.

References

(1) CDPH, 2016. *Drinking Water Maximum Contaminant Levels*, California Department of Public Health, September 2016.

(2) RWQCB, 2016. *ESLs from User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*, Interim Final 2016, San Francisco Bay Regional Water Quality Control Board, February 2016, Revision 3.

TABLE 4
Summary of Analytical Results for Soil Vapor Samples
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Sample Location | Sample ID | Sample Date | Sample Type | Approximate Sample Depth (ft bgs) | Analytical Results (a)(b) | | | | | | | | | | | | | | | | | | | | | | | Leak Check Results (ppmv) | | |
|---|-----------|-------------|-------------|-----------------------------------|---------------------------|------------------------|--------------------------|----------------|--------------|----------------------|-------------------|------------|----------------|--------------------|--------------------|--------------|--------------------|-------------------|-------------------|-----------------------|--------------------------|------------------------|------------------------|----------------|----------------|------------|-----------|---------------------------|------------------------|---------------------------|
| | | | | | VOCs (ug/m ³) | | | | | | | | | | | | | | | | | | | | | | | DFA in Sample | DFA in Sampling Shroud | Estimated Leak Percentage |
| | | | | | Trichloroethene | cis-1,2-Dichloroethene | trans-1,2-Dichloroethene | Vinyl Chloride | Benzene | Carbon Tetrachloride | Chloroethane | Chloroform | Chloromethane | 1,1-Dichloroethane | 1,1-Dichloroethene | Ethylbenzene | Methylene Chloride | Tetrachloroethene | Toluene | 1,1,1-Trichloroethane | Trichlorotrifluoroethane | 1,2,4-Trimethylbenzene | 1,3,5-Trimethylbenzene | o-Xylene | Xylenes, m & p | Other VOCs | | | | |
| TSV01 | TSV01 | 2/2/2017 | Soil Vapor | 3.5 to 3.75 | 9.89 | <3.97 | <3.96 | <2.56 | <3.19 | <6.29 | <2.64 | <4.88 | <2.07 | <4.05 | <3.97 | <4.34 | <3.47 | 15.4 | <3.77 | <5.46 | <7.66 | <4.92 | <4.92 | <4.34 | <8.68 | ND | <10.0 | 90,000 | na | |
| | TSV01 | 7/20/2017 | Soil Vapor | 3.5 to 3.75 | 56.4 | <3.97 | <3.96 | <2.56 | <3.19 | <6.29 | <2.64 | 10.7 | <2.07 | <4.05 | <3.97 | <4.34 | <3.47 | <6.78 | <3.77 | <5.46 | <7.66 | <4.92 | <4.92 | <4.34 | <8.68 | ND | <10.0 | 18,900 | na | |
| RWQCB ESL - Comm/Ind | | | | | 3,000 | 35,000 | 350,000 | 160 | 420 | 290 | 44,000,000 | 530 | 390,000 | 7,700 | 310,000 | 4,900 | 12,000 | 2,100 | 1,300,000 | 4,400,000 | na | na | na | 440,000 | 440,000 | na | na | na | na | |
| 1,000 x RSL for Industrial Indoor Air (c) | | | | | 3,000 | na | na | 2,800 | 1,600 | 2,000 | 44,000,000 | 530 | 390,000 | 7,700 | 880,000 | 4,900 | 1,200,000 | 47,000 | 22,000,000 | 22,000,000 | 22,000,000 | 260,000 | 260,000 | 440,000 | 440,000 | na | na | na | na | |
| 1,000 x DTSC HERO HHRA Note 3 Table 3 for Industrial Indoor Air (c, d) | | | | | na | 35,000 | 350,000 | 160 | 420 | 290 | na | na | na | 7,700 | 310,000 | na | 12,000 | 2,000 | 1,300,000 | 4,400,000 | na | na | 180,000 | na | na | na | na | na | na | |

Abbreviations:

| | | |
|--|--|---------------------------------------|
| <2.56 = Not detected above the stated laboratory reporting limit | HERO = Human and Ecological Risk Office | ND = not detected |
| DFA = 1,1-Difluoroethane | HHRA = Human Health Risk Assessment | ppmv = parts per million by volume |
| DTSC = Department of Toxic Substances Control | ug/m ³ = micrograms per cubic meter | RSL = USEPA Regional Screening Levels |
| ESL = RWQCB Environmental Screening Level | UST = underground storage tank | |
| ft bgs = feet below ground surface | na = not available | |

Notes:

- (a) Concentrations that exceed one or more environmental screening criteria are shown in **bold** font.
- (b) VOCs were analyzed using EPA Method TO-15 and DFA was analyzed using EPA Method TO-3 by K-prime, Inc., of Santa Rosa, California.
- (c) The default attenuation factor of 0.001 between soil vapor and indoor air, which is based on DTSC vapor intrusion assessment guidance (DTSC, 2011), was used to calculate screening levels for soil vapor data. The screening levels are calculated by dividing the appropriate industrial indoor air screening level by the attenuation factor, which in this case, is the same as multiplying by a factor of 1,000.
- (d) DTSC screening level of Tetrachloroethane modified in DTSC HERO HHRA Note 7 (DTSC, 2016)

References:

- (1) DTSC, 2011. Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, October 2011.
- (2) DTSC HERO, 2016. Human Health Risk Assessment Note Number: 7, October 2016.
- (3) DTSC HERO, 2017. Human Health Risk Assessment Note Number: 3, June 2017.

TABLE 5
SITE CONCEPTUAL MODEL
Former Horton Street UST
5679 Horton Street, Emeryville, California

| SCM Element | SCM Sub-Element | Description | Data Gap (a) | How to Address (a) |
|---------------------|------------------------------|---|--------------|--------------------|
| 1. Current Land Use | | The Site is located in the public right-of-way on Horton Street within the northbound lane. The Site is adjacent to 5679 Horton Street in Emeryville, California. Industrial/commercial buildings are located along both sides of Horton Street. (Figure 1) | None | NA |
| 2. Site History | | The origin, use, and ownership of the former Horton Street UST are not currently known. The former Horton Street UST may have been installed as part of the former Marchant Calculating Machine Company facility (late 1910s to late 1950s) or subsequent light industrial businesses that historically occupied the area. The former Horton Street UST appears to have been utilized as a diesel fuel tank based on analytical results of the tank contents prior to removal. Subsequent redevelopment of the area likely resulted in the tank being left in place beneath Horton Street. (Reference: EKI, 2015b) (Figure 1) | None | NA |
| 3. UST | a. Contents Prior to Removal | The contents of the former Horton Street UST were likely diesel, based on chemical analysis of a separate phase liquid sample (H-H-6.5-9) previously collected from inside the in-place UST on 5 May 2015 (Table 1). Prior to UST removal, approximately 800 gallons of the oily liquid contents were vacuumed out of the in-place UST and disposed off-site in accordance with applicable laws and regulations. (Reference: EKI, 2015b) | None | NA |
| | b. Removal | The former Horton Street UST at the Site was removed on 17 June 2015 in accordance with the Alameda County Department of Environmental Health ("ACDEH") approved Underground Storage Tank Closure Plan ("Closure Plan"), 5679 Horton Street, Emeryville, California, dated 8 June 2015 and prepared by EKI. The final extents of the UST excavation were approximately 9 feet wide and 12 feet long, extending to approximately 9.5 feet below ground surface ("ft bgs"; see Figure 1). The top of the tank was at approximately 5.5 ft bgs, and the bottom of the tank was at approximately 8.5 ft bgs. (Reference: EKI, 2015a; 2015b) | None | NA |
| 4. Geology | a. Regional | The Site is located on the East Bay Plain, approximately 1,500 feet east of the current San Francisco Bay shoreline, and approximately 3 miles west of the Hayward Fault. The ground surface elevation at the Site is approximately 12 feet above mean sea level ("feet msl"), based on the City of Emeryville datum. The historical San Francisco Bay shoreline was located approximately 1,000 feet west of the Site (USGS, 1899). Fill and development activities conducted since the early 1900's created the westward migration of the shoreline. (Reference: EKI, 2012) | None | NA |
| | b. Site & Vicinity | Stratigraphy at the Site & Vicinity based on results from this data gap investigation and information from the adjacent Former Marchant/Whitney ("FMW") Site (Figure 1). Ground surface along Horton Street is approximately 14.8 feet msl. • <u>S10 Unit (beneath fill material to -10 feet msl)</u> : The S10 Unit is an unconsolidated clayey layer containing sparse thin, discontinuous sandy and gravelly intervals within a fine-grained matrix. Two coarse-grained channels, trending generally east-west, are located to the north and south of the Site. Based on the results of the 2017 data gap investigation, the shallow stratigraphy in Horton Street around the Site is described below. <ul style="list-style-type: none"> • 0 to 2 ft bgs – Asphalt and/or concrete underlain by artificial fill of unconsolidated sandy and gravelly material. • 2 to 10 ft bgs – Silty clay to clayey silt with rare, thin, discontinuous sandy and gravelly intervals. • 7 to 15 ft bgs – Silty to gravelly sand with rare, thin, discontinuous gravel lenses. The lower 10 ft bgs of TSX01X (Figure 2b) is significantly more gravelly than other boring locations within Horton Street. • <u>1032 Unit (-10 to -32 feet msl)</u> : The 1032 Unit contains thick and prevalent sand and gravel intervals within a finer-grained clayey matrix. • <u>3243 Unit (-32 to -43 feet msl)</u> : The 3243 Unit is a predominantly fine-grained clay-rich unit. It contains relatively rare discontinuous intervals of sand and gravels. The bottom elevation of the 3243 Unit generally coincides with a geologic unconformity. • <u>4360 Unit (-43 to -60 feet msl) and deeper</u> : The 4360 Unit is a predominantly fine-grained clay-rich unit. It contains a coarser-grained laterally-extensive, tabular sandy layer that is approximately 2 to 8 feet thick that occurs at an approximate elevation of -45 feet msl to the east of the Site, dipping to an elevation of approximately -55 feet msl to the west of the Site along Shellmound Street. Where data could be collected deeper than the 4360 Unit, the data indicate that the sediments encountered below -60 feet msl are predominantly fine grained with local intervals of sandier material, similar to the 4360 Unit. (Reference: EKI, 2016b and EKI, 2017) | None | NA |
| | c. Within UST excavation pit | Stratigraphy Within the UST Excavation Pit: • 0.0 to 1.0 ft bgs – Asphalt • 1.0 to 1.5 ft bgs – Baserock • 1.5 to 7.0 ft bgs – Black and green, silty clay, fill material • 7.0 to 9.5 ft bgs – Brown and gray, clayey silt, native material (Reference: EKI, 2015b) | None | NA |
| 5. Hydrogeology | a. Regional | The Site is located within the East Bay Plain Groundwater Sub-basin of the Santa Clara Valley Groundwater Basin of the San Francisco Bay Hydrologic Region (DWR, 2003). The region has a Mediterranean-type climate with a distinct division between a wet season from November to April, and a dry season during the rest of the year. Normal annual precipitation is about 24 inches (1981-2011 normals, WRCC, 2012). Recharge to the groundwater system is mostly via infiltration from small streams at the valley margins near the western bounding Diablo Range, and through infiltration occurring in stream channels in the valley floor (Planert & Williams, 1995). Lateral flow from coarse alluvium at the basin margin into local aquifers is restricted by the north-northwest striking Hayward Fault, located approximately 3 miles northeast of the Site (RWQCB, 2003). (Reference: EKI 2012) | None | NA |
| | b. Site & Vicinity | The apparent hydraulic gradient direction is generally to the southwest in the S10, 1032, 3243 and 4360 Units based on data from the adjacent FMW Site to the west of the Site. A rose diagram of apparent hydraulic gradient direction in the S10 Unit in the northeast portion of the FMW Site immediately downgradient of the Site is shown on Figure 4, and the predominant hydraulic gradient direction is to the southwest/south-southwest. A slight upward hydraulic gradient was also observed between co-located wells in the S10/1032 Units, 1032/3243 Units, and the 3243/4360 Units on the FMW Site. (Reference: EKI, 2016b) | None | NA |

TABLE 5
SITE CONCEPTUAL MODEL
Former Horton Street UST
5679 Horton Street, Emeryville, California

| SCM Element | SCM Sub-Element | Description | Data Gap (a) | How to Address (a) |
|--|---|---|--------------|--------------------|
| 6. Surface Water Bodies | | The nearest perennial surface drainage to the Site is Temescal Creek, located approximately 1,300 feet to the south. Temescal Creek originates at Lake Temescal in the Berkeley hills, flows partially underground through Berkeley and Emeryville in an engineered channel, and empties into San Francisco Bay near Ohlone Way. (Reference: EKI 2012) | None | NA |
| 7. Nearby Wells | | A historical monitoring well, MW-2, was located adjacent to the former Horton Street UST. The well was installed in 1993, and the well was approximately 14 feet deep. Well MW-2 was destroyed on 22 June 2015 in accordance with an Alameda County Public Works Agency ("ACPWA") water resources well permit. Well MW-2 was located within the footprint of the UST excavation. (Reference: EKI 2015b) There are 41 groundwater monitoring wells located to the west of the Site at the adjacent FMW Site. Well depths range from approximately 17 to 70 feet bgs. (Reference: EKI, 2016b) The City of Emeryville Municipal Code Title 6 Chapter 9 prohibits the use of groundwater within the limits of the City of Emeryville as a potable water supply or for any residential, commercial, or industrial use. | None | NA |
| 8. Presence of Free Product | | During installation of the historical monitoring well, MW-2, the presence of free product was noted at approximately 4 feet bgs on the boring log. However, free product and groundwater were not observed in the UST excavation pit in June 2015 that extended to 9.5 feet bgs and the extent of the UST excavation encompassed the location of MW-2. (Reference: EKI, 2015b) Free product and sheen were also not observed at boring location TC (Figure 2b), which was located within the former UST excavation pit (EKI, 2017). | None | NA |
| 9. Chemicals of Concern ("COCs") | a. Soil | Chemicals of Concern ("COCs") in soil associated with the former Horton Street UST at the Site include total petroleum hydrocarbons ("TPH") as diesel ("TPH-d") and other TPH related compounds based on analytical results from soil samples at the perimeter of the UST excavation pit (Tables 2a to 2c and Figure 2a). The highest concentrations of COCs in soil detected above San Francisco Bay Regional Water Quality Control Board ("SFRWQCB") Environmental Screening Levels ("ESLs") for commercial/industrial land use at the Site are 4,440 milligrams per kilogram ("mg/kg") TPH-d, 5.42 mg/kg naphthalene (VOC), 2.15 mg/kg naphthalene (SVOC), and 8.28 mg/kg 2-methylnaphthalene. (Reference: EKI, 2015b) An additional 12 soil samples were collected at 6 boring locations within Horton Street to the north, west, and south of the UST excavation pit. VOCs were not detected in these soil samples, and TPH-g, TPH-d, and TPH-mo were not detected in these soil samples at concentrations greater than ESLs (Tables 2a to 2b). | None | NA |
| | b. Groundwater | Based on grab groundwater results from boring locations within the former UST excavation pit at the Site and to the north, west and south of the Site, the COCs in groundwater associated with the Site include TPH-d and TPH as motor oil ("TPH-mo"), which were detected at concentrations greater than the commercial/industrial ESLs. TPH as gasoline ("TPH-g") was detected in one grab groundwater sample at a concentration greater than the ESL, but the reported TPH-g concentration did not resemble gasoline (Table 3a). TPH-related VOCs were not detected in grab groundwater samples from these locations (Table 3a). Chlorinated volatile organic compounds ("CVOCs") detected in groundwater at the Site appear to be associated with other sites in the vicinity (see below). | None | NA |
| | c. Soil Vapor | One soil vapor probe was installed on the eastern edge of the UST excavation pit and sampled for VOCs (Figure 2b). Analytical results from the two rounds of soil vapor probe sampling, conducted during the wet and dry season, indicate that there are no detectable TPH-related VOCs present in soil gas and there are no detectable CVOCs above commercial/industrial ESLs (Table 4). As in the groundwater, CVOCs detected in soil vapor at the Site appear other sites in the vicinity (see below). | None | NA |
| 10. Other Contaminant Release Sites in Vicinity | a. West and Southwest of Site (Downgradient) | The FMW Site at 5679 Horton Street is located immediately to the west and southwest of the Site. The former Marchant Calculating Company manufacturing facility was located on the FMW Site and extended eastward across the Site to Peladeau Street. The FMW Site is immediately downgradient of the Site and is a voluntary cleanup site overseen by the Department of Toxic Substances Control ("DTSC"). COCs in the subsurface include TPH, TPH related compounds, and CVOCs. The highest concentrations of primary COCs detected include: (1) Soil - 6,590 mg/kg total extractable petroleum hydrocarbons ("TEPH") and 4,270 mg/kg trichloroethene ("TCE"), (2) Groundwater - 963 ug/L TEPH and 838,000 ug/L TCE, and (3) Soil Vapor - 32,400,000 micrograms per cubic meter ("ug/m ³ ") TCE. (Reference: EKI, 2016b) | None | NA |
| | b. Northwest of Site (Crossgradient) | The Michel & Pelton ("M&P") Site at 5743 Horton Street is located to the northwest of the Site and was the location of a former agricultural insecticide and disinfectants business. The M&P Site is crossgradient of the Site and is an inactive Spills, Leaks, Investigations, & Cleanups ("SLIC") site overseen by the San Francisco Bay Regional Water Quality Control Board ("SFRWQCB"). COCs in the subsurface include TPH, TPH related compounds, phthalates, phenols, and other VOCs such as CVOCs. (Reference: EKI, 2012; 2016a) | None | NA |
| | c. East of Site (Upgradient) | The Schwabacher-Frey Inc. Site at 5733 Peladeau Street is located immediately to the east and was the location of a former stationary distributor. The Schwabacher-Frey Site is upgradient of the Site and is a leaking underground storage tank ("LUST") site overseen by ACDEH. COCs in the subsurface include TPH-d and TPH related compounds. (Reference: EKI, 2015c) | None | NA |

TABLE 5
SITE CONCEPTUAL MODEL
Former Horton Street UST
5679 Horton Street, Emeryville, California

| SCM Element | SCM Sub-Element | Description | Data Gap (a) | How to Address (a) |
|-----------------------------------|--|--|---------------------|--------------------|
| 11. Extent of Groundwater Impacts | a. Beneath Site and in Excavation Pit | Boring location TC is located directly in the middle of the UST excavation pit (Figure 2a). Analytical results from a grab groundwater sample at this location (TC-4.5-14.5) indicate that: (1) TPH-d and TPH-mo in groundwater were detected at concentrations greater than the ESLs (818 ug/L TPH-d and 419 ug/L TPH-mo) (Table 3a and Figures 3a and 3b) and (2) TPH-related VOCs were not detected (Table 3a). Sampling location H-H is located in Horton Street immediately adjacent to the former Horton Street UST (Figure 2a). Grab groundwater sampling at this location was conducted as part of investigation activities for other sites in the vicinity. Grab groundwater sampling activities at H-H were completed prior to discovery of the former Horton Street UST and at depths deeper than the UST excavation pit or grab groundwater sampling intervals during the data gap investigation. Available data indicate that: (1) TPH-d was detected at a concentration of 403 ug/L in H-H-19-24 but TPH-related VOCs were not detected, (2) benzene (2.92 ug/L) and naphthalene (35.9 ug/L) were detected at concentrations above the SFRWQCB ESLs in a deeper grab groundwater (H-H-28-32), and (3) TPH-related VOCs were not detected in the deepest grab groundwater sample (H-H-58-62). (Reference: EKI, 2016a) | None | NA |
| | b. West to South-Southwest in Horton Street (Downgradient) | Boring locations TW and TSW are located in Horton Street generally to the southwest and south-southwest of the Site, respectively (Figure 2b). The highest concentrations of TPH-d and TPH-mo detected in grab groundwater samples from these locations were 369 ug/L and 185 ug/L, respectively, and were both detected at TW (Table 3a and Figures 3a and 3b). | None (see Item 11d) | NA |
| | c. North & South in Horton Street | Boring location TN is located in Horton Street to the north of the Site, and boring locations TS, TSX01, TSX02, and TSX01X are located in Horton Street to the south of the Site (Figure 2b). In the grab groundwater sample collected at location TN, TPH-d was detected at a concentration of 109 ug/L, slightly above the ESL of 100 ug/L, and TPH-mo was detected at a concentration of 95 ug/L, slightly below the ESL of 100 ug/L (Table 3a and Figures 3a to 3b). The highest concentrations of TPH-d and TPH-mo detected in grab groundwater samples from southern locations were 284 ug/L and 127 ug/L, respectively from location TSX01X (Table 3a and Figures 3a to 3b). TPH-related VOCs were not detected in grab groundwater samples collected from any of these locations. Along Horton Street, sampling locations H-G and H-I are located approximately 70 feet to the north and 60 feet to the south, respectively, of the former Horton Street UST (Figure 2b). Grab groundwater sampling at these locations was conducted as part of investigation activities for other sites in the vicinity. Available data indicate that: (1) TPH-d and TPH-related VOCs were not detected in shallow grab groundwater samples at these locations (H-G-19-22 and H-I-22-26) and (2) TPH-related VOCs were also not detected in deeper grab groundwater samples at these locations (H-G-36-40, H-G-60-65, H-I-29-33, H-I-42-46, and H-I-58-62) (Attachment 3). (Reference: EKI, 2016a) | None (see Item 11d) | NA |
| | d. Further Downgradient on the FMW Site | The FMW Site contains a network of shallow groundwater monitoring wells that are located downgradient of the entire area investigated in Horton Street regarding potential environmental impacts of the Site (Figures 3a to 3b). TPH-d and TPH-mo groundwater data from the FMW Site indicates that potential downgradient impacts related to the Site do not likely extend much farther downgradient of Horton Street. <ul style="list-style-type: none"> The highest TPH-d concentration in shallow groundwater detected at the FMW Site was 265 ug/L at well FMW11, which is the closest well located directly downgradient of the UST excavation pit (Figure 3a). TPH-d is also a COC at the FMW Site and well FMW11 in an area where TPH as a separate phase liquid has been observed at shallow depths (EKI, 2016b). With the exception of one other shallow groundwater monitoring well (FMW25) located near FMW11, TPH-d was not detected above the commercial/industrial ESL of 100 ug/L at other FMW Site monitoring wells located further west and south on the FMW Site (Figure 3a). Although TPH-mo was detected in shallow groundwater at concentrations greater than screening criteria in Horton Street downgradient of the UST excavation pit, TPH-mo was not detected further downgradient on the FMW Site (Figure 3b). | None | NA |

Abbreviations:

ACDEH = Alameda County Department of Environmental Health
FMW = Former Marchant/Whitney Site
ft bgs = feet below ground surface
MTBE = methyl tertiary butyl ether
TPH-(g/d/mo) = total petroleum hydrocarbons as (gasoline/diesel/motor oil)
UST = underground storage tank
VOCs = volatile organic compounds

References:

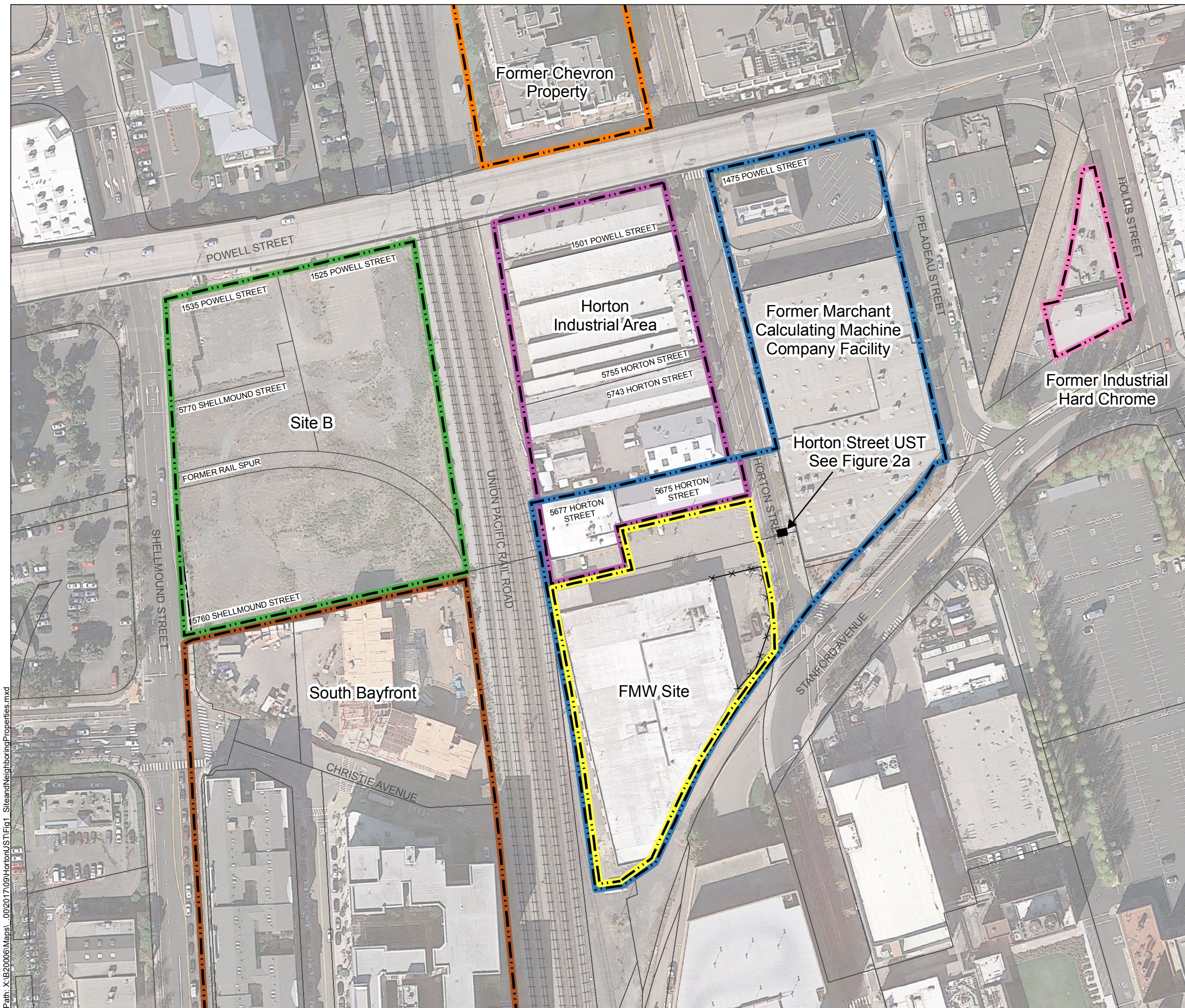
- (1) ACDEH, 2016. *Request for Data Gap Work Plan Addendum*; Fuel Leak Case No. RO0003185 and GeoTracker Global ID T10000007323, Horton Street UST, 5679 Horton Street, Emeryville, CA 94608, 27 September 2016.
- (2) DWR, 2003. *California's Groundwater: Bulletin 118, Update 2003*. California Department of Water Resources, Sacramento, CA.
- (3) EKI, 2012. *Final Subsurface Environmental Investigations Report*, Former Marchant/Whitney Site, 5679 Horton Street, Emeryville, California, August 2012.
- (4) EKI, 2015a. *Underground Storage Tank Closure Plan*, 5679 Horton Street, Emeryville, California, 14 April 2015.
- (5) EKI, 2015b. *Underground Storage Tank Closure Report*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 17 August 2015.
- (6) EKI, 2015c. *Results of Soil and Groundwater Investigation*, Schwabacher-Frey Site, 5733 Peladeau Street, Emeryville, California, 5 October 2015.
- (7) EKI, 2016a. *Final Additional Groundwater Investigation and Groundwater Monitoring Report*, Site B Project Area, Emeryville, California, June 2016.
- (8) EKI, 2016b. *Final Remedial Investigation Report*, Former Marchant/Whitney Site, 5679 Horton Street, Emeryville, California, June 2016.
- (9) EKI, 2016c. *Data Gap Investigation Work Plan and Focused Site Conceptual Model*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 29 July 2016.
- (10) EKI, 2016d. *Work Plan Addendum for Soil and Groundwater Investigation*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 7 November 2016.
- (11) EKI, 2017. *Results of Data Gap Investigation*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 17 March 2017.
- (12) RWQCB, 2003. *A Comprehensive Groundwater Protection Evaluation for the South San Francisco Bay Basins*. Report prepared by the Groundwater Committee of the California Regional Water Quality Control Board, San Francisco Bay Region.
- (13) WRCC, 2012. *Period of Record Monthly Climate Summary: 10/1/1970 to 2/26/2012*, Oakland Museum, California, Station ID No. 046336, accessed March 2012. (<http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca6336>)
- (14) USGS, 1899. *San Francisco Quadrangle*. U.S. Geological Survey Topographic Map Series, February 1899 edition, scale 1:62,500.

TABLE 6
EVALUATION OF LOW THREAT CLOSURE POLICY CRITERIA
Former Horton Street UST
5679 Horton Street, Emeryville, California

| Criteria | Criteria Description | Criteria Met? | Basis |
|--------------------------------|--|---------------|--|
| General Criteria | a. The unauthorized release is located within the service area of a public water system. | Yes | Public water service in Emeryville provided by East Bay Municipal Utility District ("EBMUD"). |
| | b. The unauthorized release consists only of petroleum. | Yes | See SCM Element 3 and 9 on Table 5. |
| | c. The unauthorized ("primary") release from the UST system has been stopped. | Yes | See SCM Element 3 on Table 5. |
| | d. Free product has been removed to the maximum extent practicable. | Yes | See SCM Element 8 on Table 5. |
| | e. A conceptual site model that assesses the nature, extent, and mobility of the release has been developed. | Yes | See SCM on Table 5. |
| | f. Secondary source has been removed to the extent practicable. | Yes | See SCM Element 3 on Table 5. Additional excavation beyond the extent of the former Horton Street UST was conducted to the extent practicable given the location in the public-right-of way and adjacent utilities (Figure 2a). |
| | g. Soil or groundwater has been tested for methyl tert-butyl ether ("MTBE") and results reported in accordance with Health and Safety Code section 25296.15. | Yes | See SCM Element 9a and 9b on Table 5, and Tables 3a and 4. |
| | h. Nuisance as defined by Water Code section 13050 does not exist at the site. | Yes | See SCM Element 1 on Table 5. |
| Media-Specific Criteria | 1. Groundwater | Yes | See SCM Element 11 on Table 5. |
| | 2. Petroleum Vapor Intrusion to Indoor Air | Yes | See SCM Element 9c on Table 5. |
| | 3. Direct Contact and Outdoor Air Exposure | Yes | See SCM Element 9a on Table 5 and Tables 2a to 2c. Concentrations of benzene, ethylbenzene, naphthalene, and polycyclic aromatic hydrocarbons ("PAHs") as benzo(a)pyrene toxicity equivalent ("BaPe") in soil samples collected within 0 to 10 feet bgs at the Site are less than concentrations specified in the LCTP Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health for the applicable commercial/industrial and utility worker scenarios (Reference: RWQCB, 2012). |

References:

- (1) EKI, 2015b. *Underground Storage Tank Closure Report*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 17 August 2015.
- (2) RWQCB, 2012. *Low-threat Underground Storage Tank Case Closure Policy*, 17 August 2012.



- Legend**
- FMW Site Property Boundary
 - Site B Property Boundary
 - South Bayfront Property Boundary
 - Approximate Extent of Former Marchant Calculating Machine Company Facility
 - Former Chevron Property
 - Former Industrial Hard Chrome Facility
 - Horton Industrial Area

Abbreviations

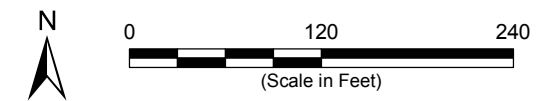
FMW = Former Marchant/Whitney
 UST = underground storage tank

Notes

1. All locations are approximate.
2. All property boundaries are approximate.

Source

Aerial photograph provided by Google Earth Pro, dated October 2015, obtained March 2016.



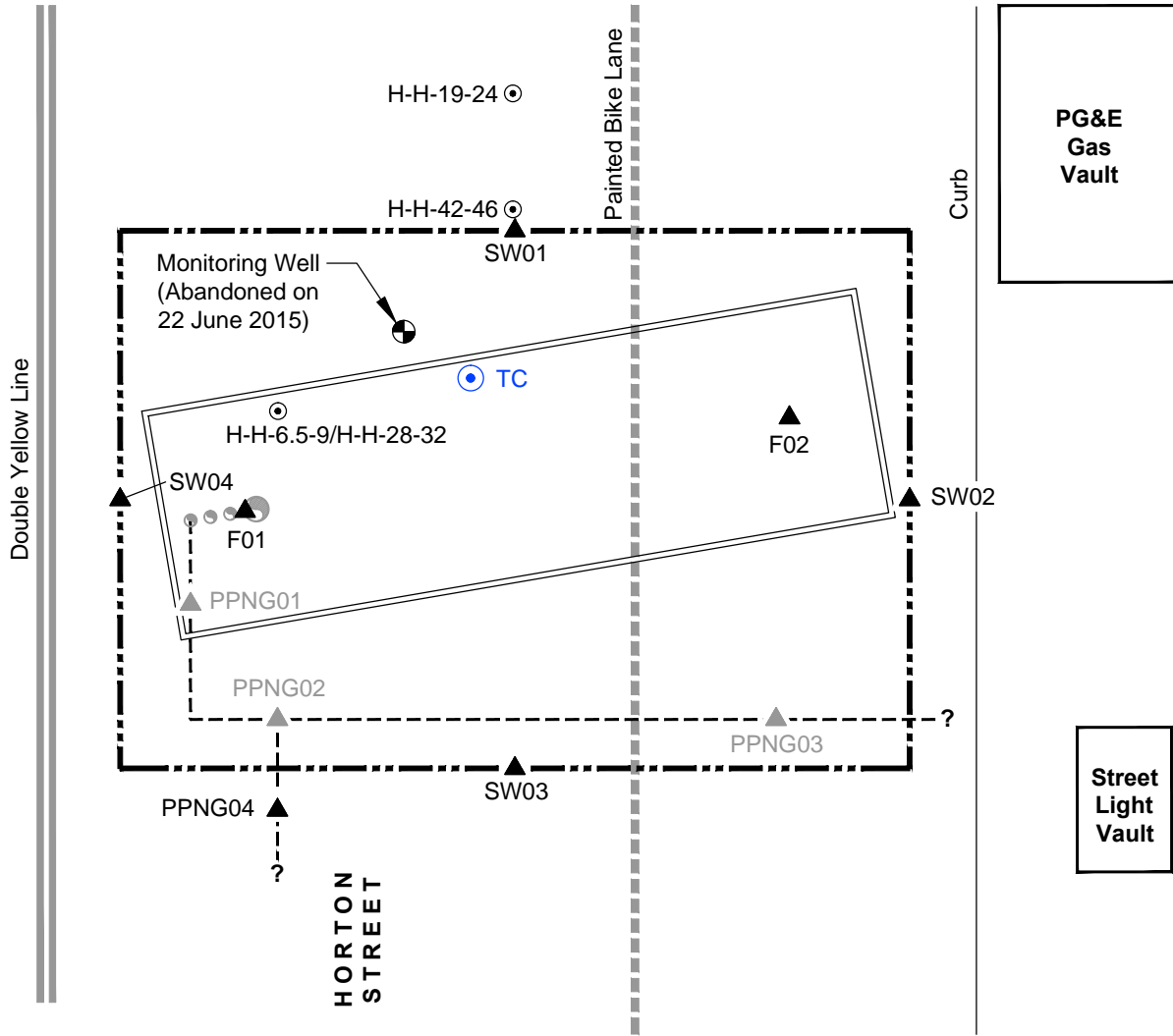
Site and Neighboring Properties

Former Horton Street UST
 Emeryville, CA
 September 2017
 EKI B20006.00 T7



Figure 1

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Legend:

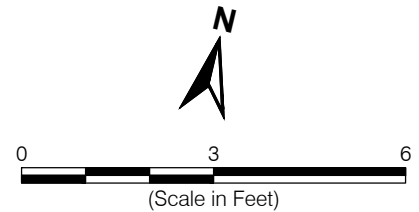
- Approximate Location of UST
- Approximate Limit of UST Excavation Pit
- Approximate Location of Associated UST Piping
- UST Fuel, Product, and Vent Ports
- Grab Groundwater Sampling Location
- CPT and Grab Groundwater Sampling Location
- Confirmation Soil Sampling Location

Abbreviations:

UST = underground storage tank

Notes:

1. All locations are approximate.
2. Grayed out confirmation soil sample locations have been over-excavated during UST demolition activities.

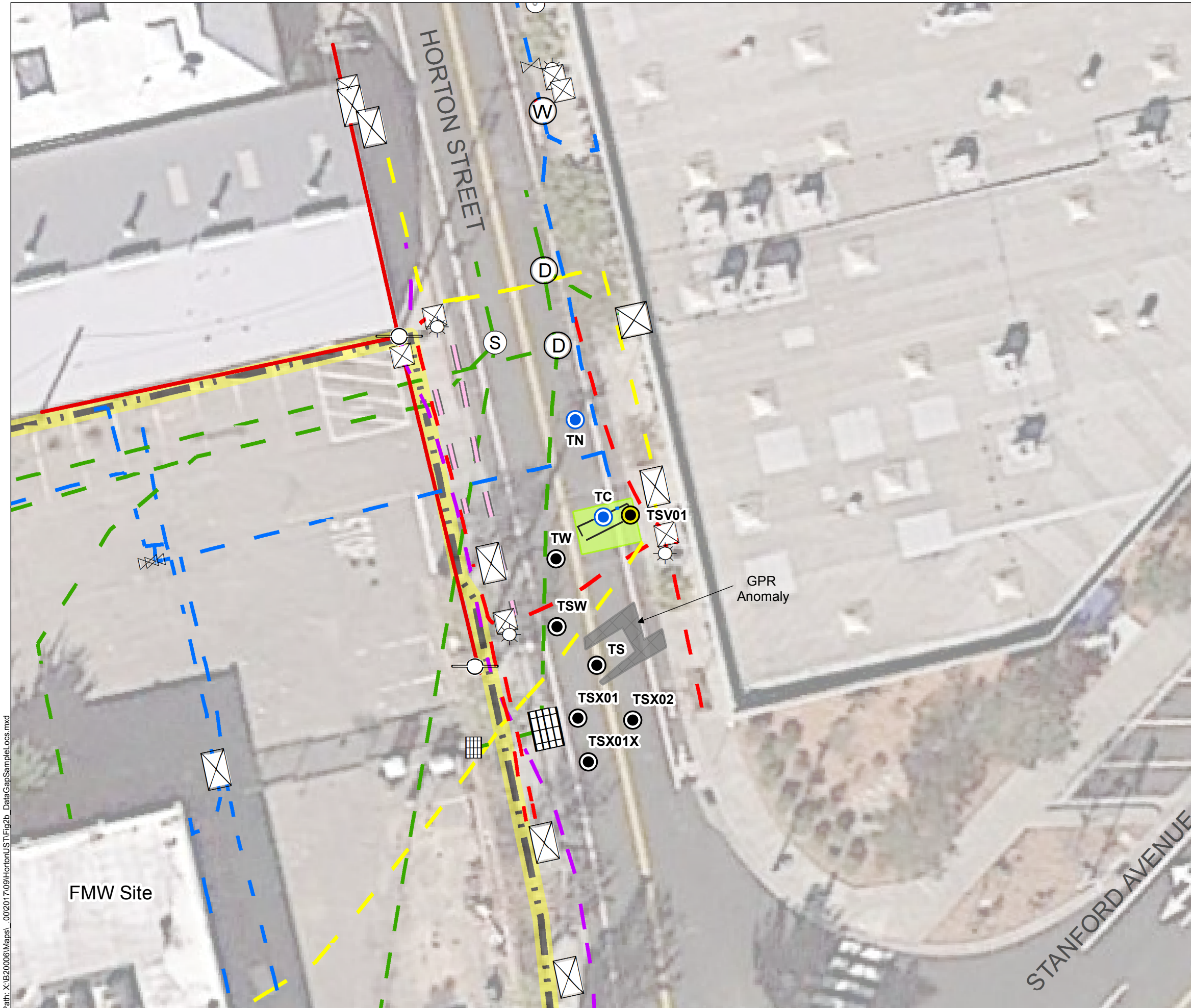


**UST Excavation Area
Sampling Locations**

Former Horton Street UST
Emeryville, CA
September 2017
EKI B20006.00



Figure 2a



Legend

- Former UST
- Former UST Excavation Area
- Grab Groundwater Sampling Location
- Grab Groundwater and Soil Sampling Location
- Soil Vapor Sampling Location

Surveyed Utilities

- AT&T Line
- Electrical
- Overhead Electrical
- Gas
- Sanitary Sewer or Storm Drain
- Unknown Utility
- Water
- PGE Power Pole
- Street Light
- Storm Drain MH
- Sanitary MH
- Water Vault
- Water valve
- Vault Box
- Catch Basin

Abbreviations

FMW = Former Marchant/Whitney
 GPR = Ground Penetrating Radar
 MH = Manhole
 UST = Underground Storage Tank

Notes

- All locations are approximate.
- Utilities located on 18 October 2016 by Subdynamic Locating Services, San Jose.
- Survey conducted on 18 October 2016, 30 January 2017, and 2 February 2017 by PLS Surveys, Inc., Oakland.

(Scale in Feet)

Data Gap Sampling Locations

Former Horton Street UST
 Emeryville, CA
 September 2017
 EKI B20006.00 T7
Figure 2b

Path: X:\B20006\Mapst...002017109\HortonUST\Fig2b_DataGapSampleLocs.mxd



Legend

- Former UST
- Former UST Excavation Area
- Grab Groundwater Sampling Location
- Grab Groundwater and Soil Sampling Location
- ⊙ FMW Groundwater Monitoring Well - S10 Unit

Abbreviations

- FMW = Former Marchant/Whitney
- ft bgs = feet below ground surface
- ft msl = feet above mean sea level
- GPR = ground penetrating radar
- S10 = Stratigraphic Unit Beneath Fill Material to -10 ft msl
- TPH-d = Total Petroleum Hydrocarbons: diesel range
- UST = Underground Storage Tank

Notes

1. All locations are approximate.
2. Grab groundwater samples collected 30 January to 2 February 2017. FMW well samples collected 10-22 November 2016.
3. Grab groundwater samples collected from 5 to 15 ft bgs. FMW screen intervals range from from approximately 7 to 19 ft bgs.

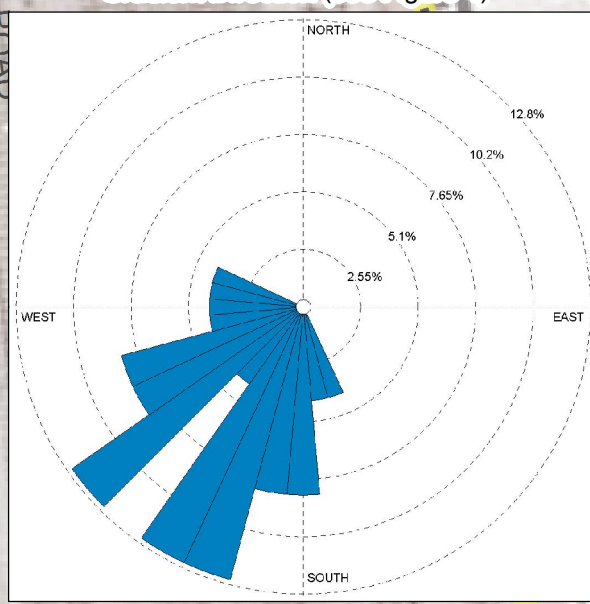
Source

Aerial photograph provided by Google Earth Pro, dated October 2015, obtained March 2016.

N

 (Scale in Feet)

Rose Diagram of Apparent Hydraulic Gradient Direction (see Figure 4)



TPH-d in Groundwater



Former Horton Street UST
 Emeryville, CA
 September 2017
 EKI B20006.00 T7
Figure 3a

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Legend

- Former UST
- Former UST Excavation Area
- Grab Groundwater Sampling Location
- Grab Groundwater and Soil Sampling Location
- FMW Groundwater Monitoring Well - S10 Unit

Abbreviations

- FMW = Former Marchant/Whitney
- ft bgs = feet below ground surface
- ft msl = feet above mean sea level
- GPR = ground penetrating radar
- S10 = Stratigraphic Unit Beneath Fill Material to -10 ft msl
- TPH-mo = Total Petroleum Hydrocabons: diesel range
- UST = Underground Storage Tank

Notes

- All locations are approximate.
- Grab groundwater samples collected 30 January to 2 February 2017. FMW well samples collected 10-22 November 2016.
- Grab groundwater samples collected from 5 to 15 ft bgs. FMW screen intervals range from from approximately 7 to 19 ft bgs.

Source

Aerial photograph provided by Google Earth Pro, dated October 2015, obtained March 2016.

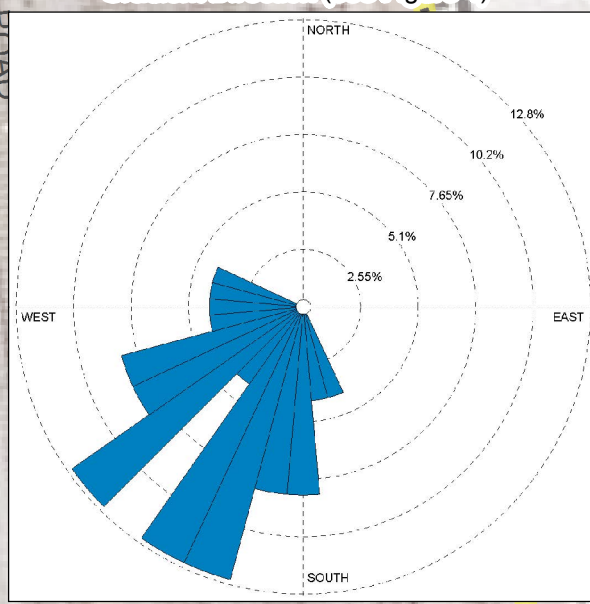
Scale: 0, 30, 60 (Scale in Feet)

TPH-mo in Groundwater

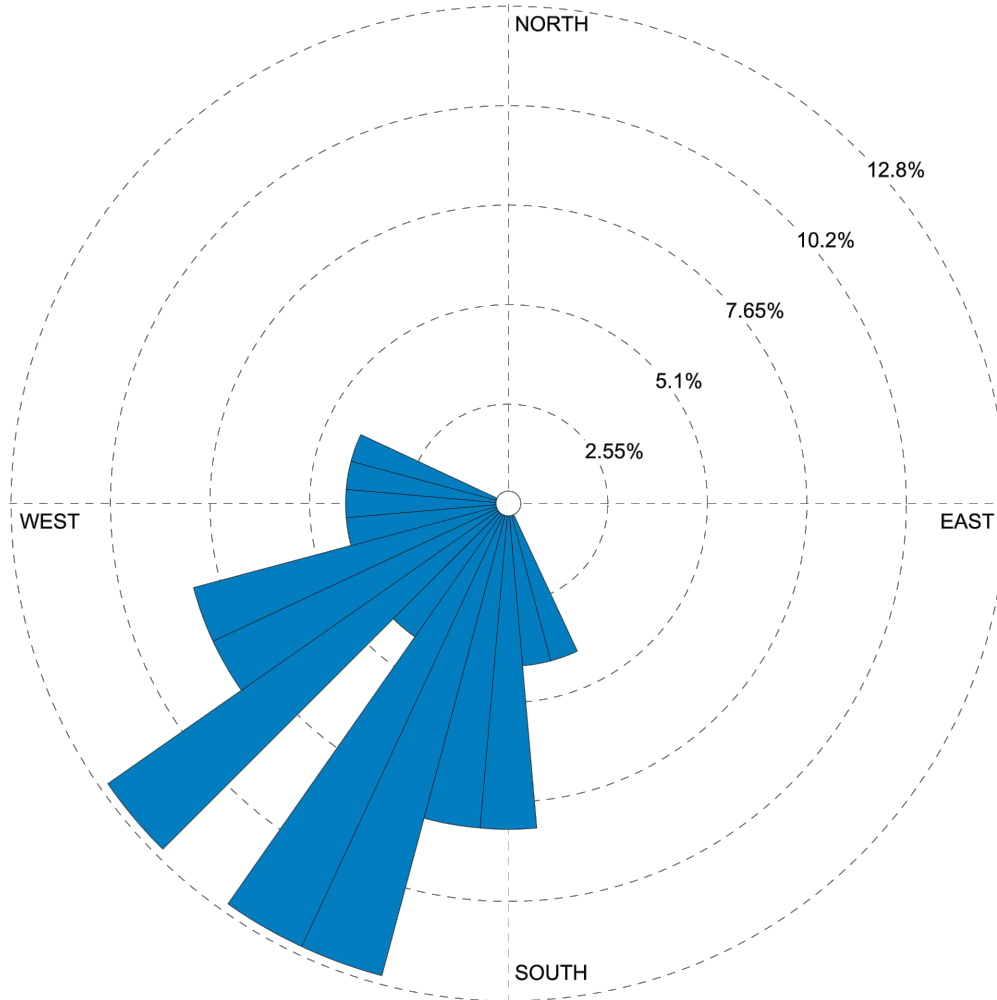
Former Horton Street UST
Emeryville, CA
September 2017
EKI B20006.00 T7

Figure 3b

Rose Diagram of Apparent Hydraulic Gradient Direction (see Figure 4)



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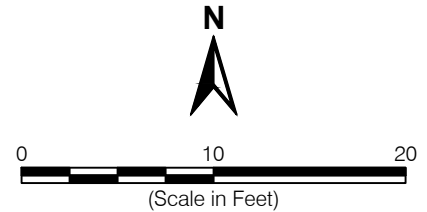
20170828.15010178 G:\B20006.00\2017-09\Figure 4.dwg Fig4

Abbreviations:

FMW = Former Marchant/Whitney
 UST = Underground Storage Tank

Notes:

1. This figure presents a graphical summary of the apparent hydraulic gradient direction of compiled from water level data from wells located in the northeast portion the adjacent Former Marchant/Whitney site, located to the west and southwest of the Former Horton Street UST. Water level data for this figure was collected July 2015, September 2015, November 2016, and January 2017.
2. This figure was compiled using WRPLOT View, Version 8.0.0 by Lakes Environmental.



Rose Diagram of Apparent Hydraulic Gradient Direction at Site Vicinity



Former Horton Street UST
 Emeryville, CA
 September 2017
 EKI B20006.00

Figure 4

ATTACHMENT 1

Laboratory Analytical Reports Including Chain-of-Custody Records

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 8/1/2017

TO: MS. JOY SU
MS. JESSICA DAUGHERTY
MR. GRAEME BRUNST
MR. KEL MITCHEL
MR. RYAN FORD
EKI ENVIRONMENT & WATER, INC.
577 AIRPORT BLVD, STE 500
BURLINGAME, CA 94010

ACCT: 9115
PROJ: B20006.00 T7

Phone: 650-292-9100
Email: labs@ekiconsult.com
jsu@ekiconsult.com
jdaugherty@ekiconsult.com
gbrunst@ekiconsult.com
kmitchell@ekiconsult.com
rford@ekiconsult.com

FROM: Richard A. Kagel, Ph.D. *RAK 8/1/2017*
Laboratory Director

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT B20006.00 T7

Enclosed please find K Prime's laboratory reports for the following samples:

| SAMPLE ID | TYPE | DATE | TIME | KPI LAB # |
|-----------|------|-----------|-------|-----------|
| TSV01 | AIR | 7/20/2017 | 16:00 | 156529 |

The above listed sample group was received on 7/21/2017 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: B20006.00 T7

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID: TSV01
LAB NO: 156529
SAMPLE TYPE: AIR
DATE SAMPLED: 7/20/2017
TIME SAMPLED: 16:00
BATCH ID: 071217A1
DATE ANALYZED: 7/24/2017

| COMPOUND NAME | CAS NO. | PPB (V/V) | | µg/cu. m | |
|---------------------------|-------------|-----------|-------------|----------|-------------|
| | | RL | SAMPLE CONC | RL | SAMPLE CONC |
| DICHLORODIFLUOROMETHANE | 75-71-8 | 1.00 | ND | 4.95 | ND |
| CHLOROMETHANE | 74-87-3 | 1.00 | ND | 2.07 | ND |
| DICHLOROTETRAFLUOROETHANE | 76-14-2 | 1.00 | ND | 6.99 | ND |
| VINYL CHLORIDE | 75-01-4 | 1.00 | ND | 2.56 | ND |
| BROMOMETHANE | 74-83-9 | 1.00 | ND | 3.88 | ND |
| CHLOROETHANE | 75-00-3 | 1.00 | ND | 2.64 | ND |
| TRICHLOROFLUOROMETHANE | 75-69-4 | 1.00 | ND | 5.82 | ND |
| 1,1-DICHLOROETHENE | 75-35-4 | 1.00 | ND | 3.97 | ND |
| TRICHLOROTRIFLUOROETHANE | 76-13-1 | 1.00 | ND | 7.68 | ND |
| METHYLENE CHLORIDE | 75-09-2 | 1.00 | ND | 3.47 | ND |
| TRANS-1,2-DICHLOROETHENE | 156-60-5 | 1.00 | ND | 3.96 | ND |
| 1,1-DICHLOROETHANE | 75-34-3 | 1.00 | ND | 4.05 | ND |
| CIS-1,2-DICHLOROETHENE | 159-59-2 | 1.00 | ND | 3.97 | ND |
| CHLOROFORM | 67-66-3 | 1.00 | 2.20 | 4.88 | 10.7 |
| 1,1,1-TRICHLOROETHANE | 71-55-6 | 1.00 | ND | 5.46 | ND |
| 1,2-DICHLOROETHANE | 107-06-2 | 1.00 | ND | 4.05 | ND |
| BENZENE | 71-43-2 | 1.00 | ND | 3.19 | ND |
| CARBON TETRACHLORIDE | 56-23-5 | 1.00 | ND | 6.29 | ND |
| 1,2-DICHLOROPROPANE | 78-87-5 | 1.00 | ND | 4.62 | ND |
| TRICHLOROETHENE | 79-01-6 | 1.00 | 10.5 | 5.37 | 56.4 |
| CIS-1,3-DICHLOROPROPENE | 10061-01-5 | 1.00 | ND | 4.54 | ND |
| TRANS-1,3-DICHLOROPROPENE | 10061-02-6 | 1.00 | ND | 4.54 | ND |
| TOLUENE | 108-88-3 | 1.00 | ND | 3.77 | ND |
| 1,1,2-TRICHLOROETHANE | 79-00-5 | 1.00 | ND | 5.46 | ND |
| 1,2-DIBROMOETHANE | 106-93-4 | 1.00 | ND | 7.68 | ND |
| TETRACHLOROETHENE | 127-18-4 | 1.00 | ND | 6.78 | ND |
| CHLOROBENZENE | 108-90-7 | 1.00 | ND | 4.60 | ND |
| ETHYLBENZENE | 100-41-4 | 1.00 | ND | 4.34 | ND |
| XYLENE (M+P) | 179601-23-1 | 2.00 | ND | 8.68 | ND |
| STYRENE | 100-42-5 | 1.00 | ND | 4.26 | ND |
| XYLENE (O) | 95-47-6 | 1.00 | ND | 4.34 | ND |
| 1,1,2,2-TETRACHLOROETHANE | 79-34-5 | 1.00 | ND | 6.87 | ND |
| 1,3,5-TRIMETHYLBENZENE | 108-67-8 | 1.00 | ND | 4.92 | ND |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | 1.00 | ND | 4.92 | ND |
| 1,3-DICHLOROBENZENE | 541-73-1 | 1.00 | ND | 6.01 | ND |
| 1,4-DICHLOROBENZENE | 106-46-7 | 1.00 | ND | 6.01 | ND |
| 1,2-DICHLOROBENZENE | 95-50-1 | 1.00 | ND | 6.01 | ND |
| 1,2,4-TRICHLOROBENZENE | 120-82-1 | 1.00 | ND | 7.42 | ND |
| HEXACHLOROBUTADIENE | 87-68-3 | 1.00 | ND | 10.7 | ND |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

RL - REPORTING LIMIT

NA - NOT APPLICABLE OR AVAILABLE

µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY:
DATE:

RAM
8/1/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: B20006.00 T7

METHOD: 1,1-DIFLUOROETHANE
REFERENCE: EPA TO 3

UNITS: PPMV

| SAMPLE ID | LAB NO. | SAMPLE TYPE | DATE SAMPLED | BATCH ID | DATE ANALYZED | MRL | SAMPLE CONC |
|-----------|---------|-------------|--------------|----------|---------------|------|-------------|
| TSV01 | 156529 | AIR | 07/20/2017 | 072417A1 | 07/24/2017 | 10.0 | ND |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE
MRL - METHOD REPORTING LIMIT

APPROVED BY: *AMC*
DATE: 8/1/17

K PRIME, INC.
LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B071217A1
SAMPLE TYPE: AIR

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

BATCH ID: 071217A1
DATE ANALYZED: 7/12/2017

| COMPOUND NAME | CAS NO. | PPB (V/V) | | µg/cu. m | |
|---------------------------|-------------|-----------|-------------|----------|-------------|
| | | RL | SAMPLE CONC | RL | SAMPLE CONC |
| DICHLORODIFLUOROMETHANE | 75-71-8 | 0.500 | ND | 2.47 | ND |
| CHLOROMETHANE | 74-87-3 | 0.500 | ND | 1.03 | ND |
| DICHLOROTETRAFLUROETHANE | 76-14-2 | 0.500 | ND | 3.50 | ND |
| VINYL CHLORIDE | 75-01-4 | 0.500 | ND | 1.28 | ND |
| BROMOMETHANE | 74-83-9 | 0.500 | ND | 1.94 | ND |
| CHLOROETHANE | 75-00-3 | 0.500 | ND | 1.32 | ND |
| TRICHLOROFLUOROMETHANE | 75-69-4 | 0.500 | ND | 2.81 | ND |
| 1,1-DICHLOROETHENE | 75-35-4 | 0.500 | ND | 1.98 | ND |
| TRICHLOROTRIFLUOROETHANE | 78-13-1 | 0.500 | ND | 3.83 | ND |
| METHYLENE CHLORIDE | 75-09-2 | 0.500 | ND | 1.74 | ND |
| TRANS-1,2-DICHLOROETHENE | 156-60-5 | 0.500 | ND | 1.98 | ND |
| 1,1-DICHLOROETHANE | 75-34-3 | 0.500 | ND | 2.02 | ND |
| CIS-1,2-DICHLOROETHENE | 159-59-2 | 0.500 | ND | 1.98 | ND |
| CHLOROFORM | 67-66-3 | 0.500 | ND | 2.44 | ND |
| 1,1,1-TRICHLOROETHANE | 71-55-6 | 0.500 | ND | 2.73 | ND |
| 1,2-DICHLOROETHANE | 107-06-2 | 0.500 | ND | 2.02 | ND |
| BENZENE | 71-43-2 | 0.500 | ND | 1.60 | ND |
| CARBON TETRACHLORIDE | 56-23-5 | 0.500 | ND | 3.15 | ND |
| 1,2-DICHLOROPROPANE | 78-87-5 | 0.500 | ND | 2.31 | ND |
| TRICHLOROETHENE | 79-01-6 | 0.500 | ND | 2.69 | ND |
| CIS-1,3-DICHLOROPROPENE | 10061-01-5 | 0.500 | ND | 2.27 | ND |
| TRANS-1,3-DICHLOROPROPENE | 10061-02-6 | 0.500 | ND | 2.27 | ND |
| TOLUENE | 108-88-3 | 0.500 | ND | 1.88 | ND |
| 1,1,2-TRICHLOROETHANE | 79-00-5 | 0.500 | ND | 2.73 | ND |
| 1,2-DIBROMOETHANE | 106-93-4 | 0.500 | ND | 3.84 | ND |
| TETRACHLOROETHENE | 127-18-4 | 0.500 | ND | 3.39 | ND |
| CHLOROBENZENE | 108-90-7 | 0.500 | ND | 2.30 | ND |
| ETHYLBENZENE | 100-41-4 | 0.500 | ND | 2.17 | ND |
| XYLENE (M+P) | 179601-23-1 | 1.00 | ND | 4.34 | ND |
| STYRENE | 100-42-5 | 0.500 | ND | 2.13 | ND |
| XYLENE (O) | 95-47-6 | 0.500 | ND | 2.17 | ND |
| 1,1,2,2-TETRACHLOROETHANE | 79-34-5 | 0.500 | ND | 3.43 | ND |
| 1,3,5-TRIMETHYLBENZENE | 108-87-8 | 0.500 | ND | 2.46 | ND |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | 0.500 | ND | 2.46 | ND |
| 1,3-DICHLOROBENZENE | 541-73-1 | 0.500 | ND | 3.01 | ND |
| 1,4-DICHLOROBENZENE | 106-46-7 | 0.500 | ND | 3.01 | ND |
| 1,2-DICHLOROBENZENE | 95-50-1 | 0.500 | ND | 3.01 | ND |
| 1,2,4-TRICHLOROBENZENE | 120-82-1 | 0.500 | ND | 3.71 | ND |
| HEXACHLOROBUTADIENE | 87-68-3 | 0.500 | ND | 5.33 | ND |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

MRL - METHOD REPORTING LIMIT

NA - NOT APPLICABLE OR AVAILABLE

µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

LAB CONTROL ID: L071217A1
LAB CONTROL DUPLICATE ID: D071217A1

SAMPLE TYPE: AIR
BATCH ID: 071217A1
DATE ANALYZED: 7/12/2017

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

| COMPOUND NAME | SPIKE ADDED (PPB) | REPORTING LIMIT (PPB) | SAMPLE CONC (PPB) | SPIKE CONC (PPB) | SPIKE REC (%) | REC LIMITS (%) |
|--------------------|-------------------------|-----------------------------|-------------------------|------------------------|---------------------|----------------------|
| 1,1-DICHLOROETHENE | 10.0 | 0.500 | ND | 10.5 | 105 | 60 - 140 |
| BENZENE | 10.0 | 0.500 | ND | 11.8 | 118 | 60 - 140 |
| TRICHLOROETHENE | 10.0 | 0.500 | ND | 10.1 | 101 | 60 - 140 |
| TOLUENE | 10.0 | 0.500 | ND | 11.8 | 118 | 60 - 140 |
| TETRACHLOROETHENE | 10.0 | 0.500 | ND | 9.39 | 94 | 60 - 140 |

| COMPOUND NAME | SPIKE ADDED (PPB) | SPIKE DUP CONC (PPB) | SPIKE DUP REC (%) | RPD (%) | RPD (%) | QC LIMITS REC (%) |
|--------------------|-------------------------|----------------------------|-------------------------|------------|------------|-------------------------|
| 1,1-DICHLOROETHENE | 10.0 | 10.7 | 107 | 2.1 | 25 | 60 - 140 |
| BENZENE | 10.0 | 11.9 | 119 | 1.3 | 25 | 60 - 140 |
| TRICHLOROETHENE | 10.0 | 10.1 | 101 | 0.4 | 25 | 60 - 140 |
| TOLUENE | 10.0 | 11.8 | 118 | 0.1 | 25 | 60 - 140 |
| TETRACHLOROETHENE | 10.0 | 9.41 | 94 | 0.2 | 25 | 60 - 140 |

NOTES:

NA - NOT APPLICABLE OR AVAILABLE

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B072417A1
LAB CONTROL SAMPLE ID: L072417A1
LAB CONTROL DUPLICATE ID: D072417A1
BATCH ID: 072417A1

METHOD: 1,1-DIFLUOROETHANE
REFERENCE: EPA TO 3

SAMPLE TYPE: AIR
UNITS: PPM -V/V

METHOD BLANK

| COMPOUND NAME | REPORTING LIMIT | SAMPLE CONC |
|--------------------|-----------------|-------------|
| 1,1-DIFLUOROETHANE | 10.0 | ND |

ACCURACY (LAB CONTROL SAMPLE)

| COMPOUND NAME | EXPECTED CONC | MEASURED CONC | PERCENT RECOVERY | LIMITS (PERCENT) |
|--------------------|---------------|---------------|------------------|------------------|
| 1,1-DIFLUOROETHANE | 10000 | 11400 | 114 | 60-140 |

PRECISION (LAB CONTROL DUPLICATE)

| COMPOUND NAME | SAMPLE RESULT | DUPLICATE RESULT | RPD (PERCENT) | LIMITS (PERCENT) |
|--------------------|---------------|------------------|---------------|------------------|
| 1,1-DIFLUOROETHANE | 11400 | 11400 | 0.0 | ±30 |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

CONSULTING ENGINEERS AND SCIENTISTS

1870 Ogden Drive, Burlingame CA 94010

PHONE: 650-292-9100

FAX: 650-552-9012

| | | | | | | | | | | | | | | | | |
|--|--|--|-----------|------------------------|-------------|---|------------------|---|---|--|--|--|---------------------------------|--|---------------------------|-------|
| Project Name: Horton St UST | | Project No.: B20006.00 T7 | | | | ANALYSES REQUESTED | | | | GeoTracker Global ID #: T10000007323 | | | | | | |
| Location: Emeryville, CA | | Sampled By: R. Ford | | | | Method No.: EPA TO-3 | EPA TO-15 | | | | | Revision: _____ (A, B, C, D, etc.) Date: _____ By: _____ | | | | |
| Reporting: Electronic Format: EDF Hard Copy Format: PDF EPA Data Report Level: II | | Laboratory: K Prime, Inc. 3621 Westwind Blvd. Santa Rosa, CA 95403 707-527-7574 phone | | | | Analyte Group: 1,1-Difluoroethane (DFA) | VOCS | | | | | PLACE ON HOLD | EXPECTED TURNAROUND TIME | | REMARKS / Summa ID | |
| <small>Please report results to the following people: (1) Data Archive: labs@ekiconsult.com (2) Joy Su: jsu@ekiconsult.com (3) Jessica Daugherty: jdaugherty@ekiconsult.com (4) Graeme Brunst: gbrunst@ekiconsult.com (5) Kel Mitchell: kmitchell@ekiconsult.com (6) Ryan Ford: rford@ekiconsult.com</small> | | Field Sample Identification | | Lab Sample No. | Date | Time | Matrix | Number / Type of Container (Preservative) | | | | | | | | |
| TSV01 | | 156509 | 7/20/2017 | 1600 | Air | 1 x 1-L summa | | | X | X | | | | | STD | S-722 |
| | | | | | | | | | | | | | | | | |
| Special Instructions: Please report both ppmv and ug/m ³ on the EDD. Please report DFA to results with 10 ppmv reporting limit. | | | | | | | | | | | | | | | | |
| Relinquished by: <i>[Signature]</i> (Signature/Affiliation) EKI | | | | Date: 7/20/2017 | | Time: 1445 | | Received by: <i>[Signature]</i> (VTC) 7/21/17 7:45 | | | | | | | | |
| Relinquished by: <i>[Signature]</i> (VTC) | | | | Date: 7/21/17 | | Time: 17:28 | | Received by: <i>[Signature]</i> | | | | | | | | |

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 8/1/2017

TO: MS. JOY SU
MS. JESSICA DAUGHERTY
MR. GRAEME BRUNST
MR. KEL MITCHEL
MR. RYAN FORD
EKI ENVIRONMENT & WATER, INC.
577 AIRPORT BLVD, STE 500
BURLINGAME, CA 94010

ACCT: 9115
PROJ: B20006.00 T7

Phone: 650-292-9100
Email: labs@ekiconsult.com
jsu@ekiconsult.com
jdaugherty@ekiconsult.com
gbrunst@ekiconsult.com
kmitchell@ekiconsult.com
rford@ekiconsult.com

FROM: Richard A. Kagel, Ph.D. *RAK 8/1/2017*
Laboratory Director

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT B20006.00 T7

Enclosed please find K Prime's laboratory reports for the following samples:

| SAMPLE ID | TYPE | DATE | TIME | KPI LAB # |
|-----------|------|-----------|-------|-----------|
| TSV01 | AIR | 7/20/2017 | 16:00 | 156529 |

The above listed sample group was received on 7/21/2017 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: B20006.00 T7

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

SAMPLE ID: TSV01
LAB NO: 156529
SAMPLE TYPE: AIR
DATE SAMPLED: 7/20/2017
TIME SAMPLED: 16:00
BATCH ID: 071217A1
DATE ANALYZED: 7/24/2017

| COMPOUND NAME | CAS NO. | PPB (V/V) | | µg/cu. m | |
|---------------------------|-------------|-----------|-------------|----------|-------------|
| | | RL | SAMPLE CONC | RL | SAMPLE CONC |
| DICHLORODIFLUOROMETHANE | 75-71-8 | 1.00 | ND | 4.95 | ND |
| CHLOROMETHANE | 74-87-3 | 1.00 | ND | 2.07 | ND |
| DICHLOROTETRAFLUOROETHANE | 76-14-2 | 1.00 | ND | 6.99 | ND |
| VINYL CHLORIDE | 75-01-4 | 1.00 | ND | 2.56 | ND |
| BROMOMETHANE | 74-83-9 | 1.00 | ND | 3.88 | ND |
| CHLOROETHANE | 75-00-3 | 1.00 | ND | 2.64 | ND |
| TRICHLOROFLUOROMETHANE | 75-69-4 | 1.00 | ND | 5.82 | ND |
| 1,1-DICHLOROETHENE | 75-35-4 | 1.00 | ND | 3.97 | ND |
| TRICHLOROTRIFLUOROETHANE | 76-13-1 | 1.00 | ND | 7.68 | ND |
| METHYLENE CHLORIDE | 75-09-2 | 1.00 | ND | 3.47 | ND |
| TRANS-1,2-DICHLOROETHENE | 156-60-5 | 1.00 | ND | 3.96 | ND |
| 1,1-DICHLOROETHANE | 75-34-3 | 1.00 | ND | 4.05 | ND |
| CIS-1,2-DICHLOROETHENE | 159-59-2 | 1.00 | ND | 3.97 | ND |
| CHLOROFORM | 67-66-3 | 1.00 | 2.20 | 4.88 | 10.7 |
| 1,1,1-TRICHLOROETHANE | 71-55-6 | 1.00 | ND | 5.46 | ND |
| 1,2-DICHLOROETHANE | 107-06-2 | 1.00 | ND | 4.05 | ND |
| BENZENE | 71-43-2 | 1.00 | ND | 3.19 | ND |
| CARBON TETRACHLORIDE | 56-23-5 | 1.00 | ND | 6.29 | ND |
| 1,2-DICHLOROPROPANE | 78-87-5 | 1.00 | ND | 4.62 | ND |
| TRICHLOROETHENE | 79-01-6 | 1.00 | 10.5 | 5.37 | 56.4 |
| CIS-1,3-DICHLOROPROPENE | 10061-01-5 | 1.00 | ND | 4.54 | ND |
| TRANS-1,3-DICHLOROPROPENE | 10061-02-6 | 1.00 | ND | 4.54 | ND |
| TOLUENE | 108-88-3 | 1.00 | ND | 3.77 | ND |
| 1,1,2-TRICHLOROETHANE | 79-00-5 | 1.00 | ND | 5.46 | ND |
| 1,2-DIBROMOETHANE | 106-93-4 | 1.00 | ND | 7.68 | ND |
| TETRACHLOROETHENE | 127-18-4 | 1.00 | ND | 6.78 | ND |
| CHLOROENZENE | 108-90-7 | 1.00 | ND | 4.60 | ND |
| ETHYLBENZENE | 100-41-4 | 1.00 | ND | 4.34 | ND |
| XYLENE (M+P) | 179601-23-1 | 2.00 | ND | 8.68 | ND |
| STYRENE | 100-42-5 | 1.00 | ND | 4.26 | ND |
| XYLENE (O) | 95-47-6 | 1.00 | ND | 4.34 | ND |
| 1,1,2,2-TETRACHLOROETHANE | 79-34-5 | 1.00 | ND | 6.87 | ND |
| 1,3,5-TRIMETHYLBENZENE | 108-67-8 | 1.00 | ND | 4.92 | ND |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | 1.00 | ND | 4.92 | ND |
| 1,3-DICHLOROENZENE | 541-73-1 | 1.00 | ND | 6.01 | ND |
| 1,4-DICHLOROENZENE | 106-46-7 | 1.00 | ND | 6.01 | ND |
| 1,2-DICHLOROENZENE | 95-50-1 | 1.00 | ND | 6.01 | ND |
| 1,2,4-TRICHLOROENZENE | 120-82-1 | 1.00 | ND | 7.42 | ND |
| HEXACHLOROBUTADIENE | 87-68-3 | 1.00 | ND | 10.7 | ND |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

RL - REPORTING LIMIT

NA - NOT APPLICABLE OR AVAILABLE

µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

APPROVED BY: PMM
DATE: 8/1/17

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: B20006.00 T7

METHOD: 1,1-DIFLUOROETHANE
REFERENCE: EPA TO 3

UNITS: PPMV

| SAMPLE ID | LAB NO. | SAMPLE TYPE | DATE SAMPLED | BATCH ID | DATE ANALYZED | MRL | SAMPLE CONC |
|-----------|---------|-------------|--------------|----------|---------------|------|-------------|
| TSV01 | 156529 | AIR | 07/20/2017 | 072417A1 | 07/24/2017 | 10.0 | ND |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT

NA - NOT APPLICABLE OR AVAILABLE

MRL - METHOD REPORTING LIMIT

APPROVED BY: *PMC*
DATE: 8/1/17

K PRIME, INC.
LABORATORY METHOD BLANK REPORT

METHOD BLANK ID: B071217A1
SAMPLE TYPE: AIR

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

BATCH ID: 071217A1
DATE ANALYZED: 7/12/2017

| COMPOUND NAME | CAS NO. | PPB (V/V) | | µg/cu. m | |
|---------------------------|-------------|-----------|-------------|----------|-------------|
| | | RL | SAMPLE CONC | RL | SAMPLE CONC |
| DICHLORODIFLUOROMETHANE | 75-71-8 | 0.500 | ND | 2.47 | ND |
| CHLOROMETHANE | 74-87-3 | 0.500 | ND | 1.03 | ND |
| DICHLOROTETRAFLUROETHANE | 76-14-2 | 0.500 | ND | 3.50 | ND |
| VINYL CHLORIDE | 75-01-4 | 0.500 | ND | 1.28 | ND |
| BROMOMETHANE | 74-83-9 | 0.500 | ND | 1.94 | ND |
| CHLOROETHANE | 75-00-3 | 0.500 | ND | 1.32 | ND |
| TRICHLOROFLUOROMETHANE | 75-69-4 | 0.500 | ND | 2.81 | ND |
| 1,1-DICHLOROETHENE | 75-35-4 | 0.500 | ND | 1.98 | ND |
| TRICHLOROTRIFLUOROETHANE | 78-13-1 | 0.500 | ND | 3.83 | ND |
| METHYLENE CHLORIDE | 75-09-2 | 0.500 | ND | 1.74 | ND |
| TRANS-1,2-DICHLOROETHENE | 156-60-5 | 0.500 | ND | 1.98 | ND |
| 1,1-DICHLOROETHANE | 75-34-3 | 0.500 | ND | 2.02 | ND |
| CIS-1,2-DICHLOROETHENE | 159-59-2 | 0.500 | ND | 1.98 | ND |
| CHLOROFORM | 67-66-3 | 0.500 | ND | 2.44 | ND |
| 1,1,1-TRICHLOROETHANE | 71-55-6 | 0.500 | ND | 2.73 | ND |
| 1,2-DICHLOROETHANE | 107-06-2 | 0.500 | ND | 2.02 | ND |
| BENZENE | 71-43-2 | 0.500 | ND | 1.60 | ND |
| CARBON TETRACHLORIDE | 56-23-5 | 0.500 | ND | 3.15 | ND |
| 1,2-DICHLOROPROPANE | 78-87-5 | 0.500 | ND | 2.31 | ND |
| TRICHLOROETHENE | 79-01-6 | 0.500 | ND | 2.69 | ND |
| CIS-1,3-DICHLOROPROPENE | 10061-01-5 | 0.500 | ND | 2.27 | ND |
| TRANS-1,3-DICHLOROPROPENE | 10061-02-6 | 0.500 | ND | 2.27 | ND |
| TOLUENE | 108-88-3 | 0.500 | ND | 1.88 | ND |
| 1,1,2-TRICHLOROETHANE | 79-00-5 | 0.500 | ND | 2.73 | ND |
| 1,2-DIBROMOETHANE | 106-93-4 | 0.500 | ND | 3.84 | ND |
| TETRACHLOROETHENE | 127-18-4 | 0.500 | ND | 3.39 | ND |
| CHLOROBENZENE | 108-90-7 | 0.500 | ND | 2.30 | ND |
| ETHYLBENZENE | 100-41-4 | 0.500 | ND | 2.17 | ND |
| XYLENE (M+P) | 179601-23-1 | 1.00 | ND | 4.34 | ND |
| STYRENE | 100-42-5 | 0.500 | ND | 2.13 | ND |
| XYLENE (O) | 95-47-6 | 0.500 | ND | 2.17 | ND |
| 1,1,2,2-TETRACHLOROETHANE | 79-34-5 | 0.500 | ND | 3.43 | ND |
| 1,3,5-TRIMETHYLBENZENE | 108-87-8 | 0.500 | ND | 2.46 | ND |
| 1,2,4-TRIMETHYLBENZENE | 95-63-6 | 0.500 | ND | 2.46 | ND |
| 1,3-DICHLOROBENZENE | 541-73-1 | 0.500 | ND | 3.01 | ND |
| 1,4-DICHLOROBENZENE | 106-46-7 | 0.500 | ND | 3.01 | ND |
| 1,2-DICHLOROBENZENE | 95-50-1 | 0.500 | ND | 3.01 | ND |
| 1,2,4-TRICHLOROBENZENE | 120-82-1 | 0.500 | ND | 3.71 | ND |
| HEXACHLOROBUTADIENE | 87-68-3 | 0.500 | ND | 5.33 | ND |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

MRL - METHOD REPORTING LIMIT

NA - NOT APPLICABLE OR AVAILABLE

µg/cu. m VALUES ARE CALCULATED FROM PPB RESULTS USING NORMAL TEMPERATURE AND PRESSURE (NPT).

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

LAB CONTROL ID: L071217A1
LAB CONTROL DUPLICATE ID: D071217A1

SAMPLE TYPE: AIR
BATCH ID: 071217A1
DATE ANALYZED: 7/12/2017

METHOD: VOC'S IN AIR
REFERENCE: EPA METHOD TO 15 (GC-MS-SCAN)

| COMPOUND NAME | SPIKE ADDED (PPB) | REPORTING LIMIT (PPB) | SAMPLE CONC (PPB) | SPIKE CONC (PPB) | SPIKE REC (%) | REC LIMITS (%) |
|--------------------|-------------------------|-----------------------------|-------------------------|------------------------|---------------------|----------------------|
| 1,1-DICHLOROETHENE | 10.0 | 0.500 | ND | 10.5 | 105 | 60 - 140 |
| BENZENE | 10.0 | 0.500 | ND | 11.8 | 118 | 60 - 140 |
| TRICHLOROETHENE | 10.0 | 0.500 | ND | 10.1 | 101 | 60 - 140 |
| TOLUENE | 10.0 | 0.500 | ND | 11.8 | 118 | 60 - 140 |
| TETRACHLOROETHENE | 10.0 | 0.500 | ND | 9.39 | 94 | 60 - 140 |

| COMPOUND NAME | SPIKE ADDED (PPB) | SPIKE DUP CONC (PPB) | SPIKE DUP REC (%) | RPD (%) | RPD (%) | QC LIMITS REC (%) |
|--------------------|-------------------------|----------------------------|-------------------------|------------|------------|-------------------------|
| 1,1-DICHLOROETHENE | 10.0 | 10.7 | 107 | 2.1 | 25 | 60 - 140 |
| BENZENE | 10.0 | 11.9 | 119 | 1.3 | 25 | 60 - 140 |
| TRICHLOROETHENE | 10.0 | 10.1 | 101 | 0.4 | 25 | 60 - 140 |
| TOLUENE | 10.0 | 11.8 | 118 | 0.1 | 25 | 60 - 140 |
| TETRACHLOROETHENE | 10.0 | 9.41 | 94 | 0.2 | 25 | 60 - 140 |

NOTES:

NA - NOT APPLICABLE OR AVAILABLE

ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT

K PRIME, INC.
LABORATORY QC REPORT

METHOD BLANK ID: B072417A1
LAB CONTROL SAMPLE ID: L072417A1
LAB CONTROL DUPLICATE ID: D072417A1
BATCH ID: 072417A1

METHOD: 1,1-DIFLUOROETHANE
REFERENCE: EPA TO 3

SAMPLE TYPE: AIR
UNITS: PPM -V/V

METHOD BLANK

| COMPOUND NAME | REPORTING LIMIT | SAMPLE CONC |
|--------------------|--------------------|----------------|
| 1,1-DIFLUOROETHANE | 10.0 | ND |

ACCURACY (LAB CONTROL SAMPLE)

| COMPOUND NAME | EXPECTED CONC | MEASURED CONC | PERCENT RECOVERY | LIMITS (PERCENT) |
|--------------------|------------------|------------------|---------------------|---------------------|
| 1,1-DIFLUOROETHANE | 10000 | 11400 | 114 | 60-140 |

PRECISION (LAB CONTROL DUPLICATE)

| COMPOUND NAME | SAMPLE RESULT | DUPLICATE RESULT | RPD (PERCENT) | LIMITS (PERCENT) |
|--------------------|------------------|---------------------|------------------|---------------------|
| 1,1-DIFLUOROETHANE | 11400 | 11400 | 0.0 | ±30 |

NOTES:

ND - NOT DETECTED AT OR ABOVE THE STATED METHOD REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

CONSULTING ENGINEERS AND SCIENTISTS

1870 Ogden Drive, Burlingame CA 94010

PHONE: 650-292-9100

FAX: 650-552-9012

| | | | | | | | | | | | |
|---|-----------------------|--|--------------------|---|--|------------------|----------------------|---|--|---|-------------------------------------|
| Project Name: Horton St UST | | Project No. B20006.00 T7 | | | ANALYSES REQUESTED | | | | GeoTracker Global ID #: T10000007323 | | |
| Location: Emeryville, CA | | Sampled By: R. Ford | | | Method No. EPA TO-3 | EPA TO-15 | | | | Revision: _____ (A, B, C, D, etc.) | Date: _____ By: _____ |
| Reporting: Electronic Format: EDF Hard Copy Format: PDF EPA Data Report Level: II | | Laboratory: K Prime, Inc. 3621 Westwind Blvd. Santa Rosa, CA 95403 707-527-7574 phone | | | | | | | | | |
| Please report results to the following people: (1) Data Archive: labs@ekiconsult.com (2) Joy Su: jsu@ekiconsult.com (3) Jessica Daugherty: jdaugherty@ekiconsult.com (4) Graeme Brunst: gbrunst@ekiconsult.com (5) Kel Mitchell: kmitchell@ekiconsult.com (6) Ryan Ford: rford@ekiconsult.com | | | | | | | | | EXPECTED TURNAROUND TIME | REMARKS / Summa ID | |
| Field Sample Identification | Lab Sample No. | Date | Time | Matrix | Number / Type of Container (Preservative) | | PLACE ON HOLD | | | | |
| TSV01 | 156509 | 7/20/2017 | 1600 | Air | 1 x 1-L summa | | X | X | | | STD S-722 |
| | | | | | | | | | | | |
| Special Instructions: Please report both ppmv and ug/m ³ on the EDD. Please report DFA to results with 10 ppmv reporting limit. | | | | | | | | | | | |
| Relinquished by: <i>[Signature]</i> (Signature/Affiliation) EKI | | Date: 7/20/2017 | Time: 1445 | Received by: <i>[Signature]</i> (VTC) 7/21/17 7:45 | | | | | | | |
| Relinquished by: <i>[Signature]</i> (Signature/Affiliation) (VTC) | | Date: 7/21/17 | Time: 17:28 | Received by: <i>[Signature]</i> Jenne West | | | | | | | |

ATTACHMENT 2

Field Methods and Procedures

ATTACHMENT 2 FIELD METHODS AND PROCEDURES

Former Horton Street UST
Emeryville, California

1 SOIL VAPOR PROBE (“SVP”) DESTRUCTION

A drilling permit will be obtained from the Alameda County Public Works Agency (“ACPWA”) and an encroachment permit will be obtained from the City of Emeryville. Underground Services Alert (“USA”) will be notified at least 48-hours prior to groundbreaking activities.

Under the supervision of an EKI geologist or engineer, SVP TSV01 will be overdrilled using hollow stem auger (“HSA”) with approximately 4-inches diameter augers to approximately feet 4.5 feet below ground surface (“bgs”), which is approximately 0.5 feet deeper than the bottom depth of TSV01. The borehole will be backfilled to ground surface with neat cement in accordance with ACPWA permit requirements.

Fieldwork will be performed in accordance with the site-specific health and safety plan (“HSP”) (Attachment 2 of EKI, 2016).

2 MANAGEMENT OF INVESTIGATION-DERIVED WASTE

IDWs such as soil cuttings and decontamination water will be containerized in DOT-approved containers such as 55-gallon drums. The IDW containers will be labeled with respect to their contents, date generated, site address, and generator information. The IDW containers will be temporarily stored in a secure location off-site as designated by the Successor Agency. IDW containers will be characterized and disposed of by the Successor Agency in accordance with applicable laws and regulations.

3 REFERENCES

EKI, 2016. *Data Gap Investigation Work Plan and Focused Site Conceptual Model*, In Public Right-of-Way on Horton Street Adjacent to 5679 Horton Street, Emeryville, California, 29 July 2016.