ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY

REBECCA GEBHART, Interim Director



DEPARTMENT OF ENVIRONMENTAL HEALTH LOCAL OVERSIGHT PROGRAM (LOP) FOR HAZARDOUS MATERIALS RELEASES 1131 HARBOR BAY PARKWAY ALAMEDA, CA 94502 (510) 567-6700 FAX (510) 337-9335

August 15, 2017

Union Pacific Railroad 9451 Atkinson, Suite 100 Roseville, CA 95747

Attn.: Lauren Mancuso (Sent via electronic mail to lamancus@up.com)

Subject: Case Closure for Site Cleanup Program (SCP) Case No. RO0003169 and GeoTracker Global ID T10000006708, Locomotive Diesel Spill, 1408 Middle Harbor Road, Oakland, CA 94607

Dear Ms. Mancuso:

This letter confirms the completion of site investigation and remedial actions for the soil and groundwater investigation at the above referenced site. We are also transmitting the enclosed case closure summary. These documents confirm the completion of the investigation and cleanup of the reported releases at the subject site with the provision that the information provided to this agency was accurate and representative of existing conditions. The subject Site Cleanup Program (SCP) case is closed. This case closure letter and the case closure summary can also be viewed on the State Water Resources Control Board's Geotracker website (http://geotracker.waterboards.ca.gov) and the Alameda County Environmental Health website (http://www.acgov.org/aceh/index.htm).

Due to residual contamination, the site was closed with Site Management Requirements that limit future land use to the current commercial/ industrial land use as a rail yard. Site Management Requirements are further described in Additional Information of the attached Case Closure Summary.

If you have any questions, please call Keith Nowell at (510) 567-6764. Thank you.

Sincerely,

Dilan Roe, P.E.

LOP and SCP Program Manager

De Vere

Enclosures:

- 1. Remedial Action Completion Certification
- 2. Case Closure Summary

Cc w/enc.: Steve Pearson, Union Pacific Railroad, (Sent via electronic mail to sapearso@up.com)

Cheryl Prowell, San Francisco Bay Regional Water Board, 1515 Clay Street, Suite 1400, Oakland, CA 94612 (Sent via electronic mail to cheryl.prowell@waterboards.ca.gov)

Mark Arniola, City of Oakland Public Works, Environmental Services, 250 Frank H. Ogawa Plaza, Suite 5301, Oakland, CA 94612 (Sent via electronic mail to marniola@oaklandnet.com)

Dave Harlan, City of Oakland Planning and Building, 250 Frank H. Ogawa Plaza, Suite 2114, Oakland, CA 94612 (Sent via electronic mail to marriola@oaklandnet.com)

Chandra Johannesson, EBMUD Utility Discharge Section, P.O. Box 24055, MS 702, Oakland, CA 94623 (Sent via electronic mail to cjohanne@ebmud.com)

Scott Hackman, ARCADIS U.S., Inc., 101 Creekside Ridge Court, Suite 200, Roseville, CA 95678 (Sent via electronic mail to scott.hackman@arcadis-us.com)

Keith Nowell, ACDEH, (Sent via electronic mail keith nowell@acgov.org)

eFile, GeoTracker.:

Agency Information

| Date: | August | 15. | 2017 |
|-------|--------|-----|------|
|-------|--------|-----|------|

| Alameda County Department of Environmental Health | Address: 1131 Harbor Bay Parkway |
|---|---------------------------------------|
| City/State/Zip: Alameda, CA 94502-6577 | Phone: (510) 567-6764 |
| Case Worker: Keith Nowell | Title: Hazardous Materials Specialist |

Case Information

| Facility Name: Locomotive Diese | el Spill | |
|--|---|---------------------------------|
| Facility Address: 1408 Middle Ha | rbor Road, Oakland, CA 94607 | |
| Regional Water Board LUSTIS Case No: | Former ACDEH Case No.: | Current SCP Case No.: RO0003169 |
| Unauthorized Release Form Filing Date: | State Water Board GeoTracker G | lobal ID: T10000006708 |
| Assessor Parcel Number: 18-390-10-13 | Current Land Use: Commercial/ I | ndustrial (Railroad Yard) |
| Responsible Party(s): | Address: | Phone: |
| Union Pacific Railroad c/o Ms. Lauren Mancuso | 9451 Atkinson, Suite 100 Roseville, CA 95747 | |

Tank Information

| Tank No. | Size (gal) | Contents | Closed in-Place / Removed | Date |
|----------|------------|----------|------------------------------|-----------|
| | 4,000 | Diesel | N/A | 3/26/2015 |

Site Closure Evaluation Summary

Current Land-use at time of Closure

The site is located in a Union Pacific Railroad (UP) intermodal rail yard consisting of multiple rail spurs and sidings in addition to multiple main lines. This case was opened in response to an unauthorized release of diesel fuel from a ruptured locomotive fuel tank along Track 58 on March 26, 2015, releasing approximately 4,000 gallons of diesel fuel. Though land ownership is identified as Southern Pacific (SP Co) in Attachment 4, Southern Pacific merged with UP on September 11, 1996.

Due to residual contamination, the site was closed with site management requirements that include notifying Alameda County Department of Environmental Health (ACDEH) of a proposed change in land use to any residential or conservative land use, or if any redevelopment or building alteration is proposed that affect or disturb the existing subsurface conditions at the site.

Adjacent Property(ies) Land-use at Time of Closure

The site is bounded on the north by Interstate Highway 880 (I-880) and the west by Port of Oakland shipping facilities. Additional UP facilities are located to the south and east.

Historic Land-use / Site Investigation

The site has been the location of UP rail facilities since at least the 1870s. At the time of the release the site was developed as a rail yard. The release occurred on Track 58, approximately 250 feet south-southwest of I-880.

Potential Exposure to Chemicals of Concern

Approximately 4,000 gallons of red dye diesel fuel was released at the site as a result of the locomotive fuel tank rupture. Total petroleum hydrocarbons as diesel (TPHd and naphthalene are chemicals of concern. Potential exposure routes are direct contact and inhalation. Based on the remedial actions described below, the release was contained and the fuel recovered.

Remediation Activities

Approximately 4,000 gallons of diesel fuel was released as a result of the tank rupture. Emergency response activities, initiated on March 26, 2015, consisted of the excavation of extraction trenches. As of March 28, 2015, 1,200 gallons of diesel were recovered. Following the emergency response, sections of track were removed along three of the rail lines and soil was excavated between April 7 and April 20, 2015 to a depth of approximately five (5) feet- the depth to first water. Approximately 1,570 tons of soil was removed and disposed off-site. A grabgroundwater sample collected from the excavation indicated the release resulted in minimal impacts to groundwater.

Case Closure & Future Site Management Requirements

Although not an underground storage tank, this fuel release case has been evaluated for closure using the criteria contained in the State Water Resource Control Board Low-Threat Underground Storage Tank Closure Policy (LTCP) for petroleum related contaminants. Although the site does not meet the LTCP Vapor Intrusion to Indoor Air and Direct Contact Media Specific Criteria, the site is considered a low risk due to its location and land use.

Due to residual contamination at the site, the site is closed as a commercial rail yard with site management requirements. If there is a proposed change in land use to any residential, or conservative land use, or if any redevelopment occurs, ACDEH must be notified as required by Government Code Section 65850.2.2. ACDEH will re-evaluate the site relative to the proposed redevelopment. Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.

Refer to Attachments 1 through 4 for analysis details

Site Management Requirements

Case closure is granted for the current commercial/ industrial land use as a rail yard.

Due to residual subsurface contamination remaining at the site, if any redevelopment occurs, or if a proposed change in land use to residential, or other conservative land use, Alameda County Department of Environmental Health (ACDEH) must be notified as required by Government Code Section 65850.2.

Excavation or construction activities in areas of residual contamination require planning and implementation of appropriate health and safety procedures by the responsible party prior to and during excavation and construction activities.

This site is to be entered into the City of Oakland Permit Tracking System due to the residual contamination on site.

| institutional Controls | 6 |
|------------------------|---|
|------------------------|---|

| Not Applicable | | | | |
|----------------|--|-------|---|--|
| | | · | · · · · · · · · · · · · · · · · · · · | |

Engineering Controls

Not Applicable

Case Closure Public Notification Information

| Agency Type | Agency Name | Contact Information |
|--|-------------------------------------|--|
| Regional Water Board | San Francisco Bay | Cheryl Prowell 1515 Clay Street, Suite 1400 Oakland, CA 94612 |
| Municipal and County Water Districts | East Bay Municipal Utility District | EBMUD Utility Discharge Section P.O. Box 24055, MS 702 Oakland, CA 94623 Attn.: Chandra Johannesson |
| Water Replenishment Districts | Not Applicable | |
| Groundwater Basin Managers | Not Applicable | |
| Planning Agency | City of Oakland | City of Oakland Planning and Building 250 Frank H. Ogawa Plaza, Suite 2114 Oakland, CA 94612 Attn.: Dave Harlan |
| Public Works Agency | City of Oakland | City of Oakland Public Works Environmental Services 250 Frank H. Ogawa Plaza, Suite 5301 Oakland, CA 94612 Attn.: Mark Arniola |
| Owners and Occupants of Property and Adjacent Parcels | See List in Attachment 4 | |

Monitoring Wells Status

| Monitoring Wells (MW) Onsite: 0 | MWs Destroyed: NA |
|---------------------------------|----------------------|
| No MWs Destroyed: NA | No. MWs Retained: NA |

Local Agency Signatures

| Case Worker: Keith Nowell | Title: Hazardous Materials Specialist |
|---------------------------|---------------------------------------|
| Signature: Kirth Norvell | Date: 8-15- 2014 |
| Paresh Khatri | Title: Supervisor |
| Signature: Authorities | Date: 8/15/2017 |
| Approved by. Dilan Roe | Title: Chief, Land Water Division |
| Signature: Dly Pu | Date: 8/15/2017 |

This Case Closure Summary along with the Case Closure Transmittal letter and the Remedial Action Completion Certification provides documentation of the case closure. This closure approval is based upon the available information and with the provision that the information provided to this agency was accurate and representative of site conditions. The Conceptual Site Model may not contain all available data. Additional information on the case can be viewed in the online case file. The entire case file can be viewed over the Internet on the Alameda County Department of Environmental Health (ACDEH) website (http://www.acgov.org/aceh/lop/ust.htm) or the State of California Water Resources Control Board GeoTracker website (http://geotracker.waterboards.ca.gov). Not all historic documents for the fuel leak case may be available on GeoTracker. A more complete historic case file for this site may be located on the ACDEH website.

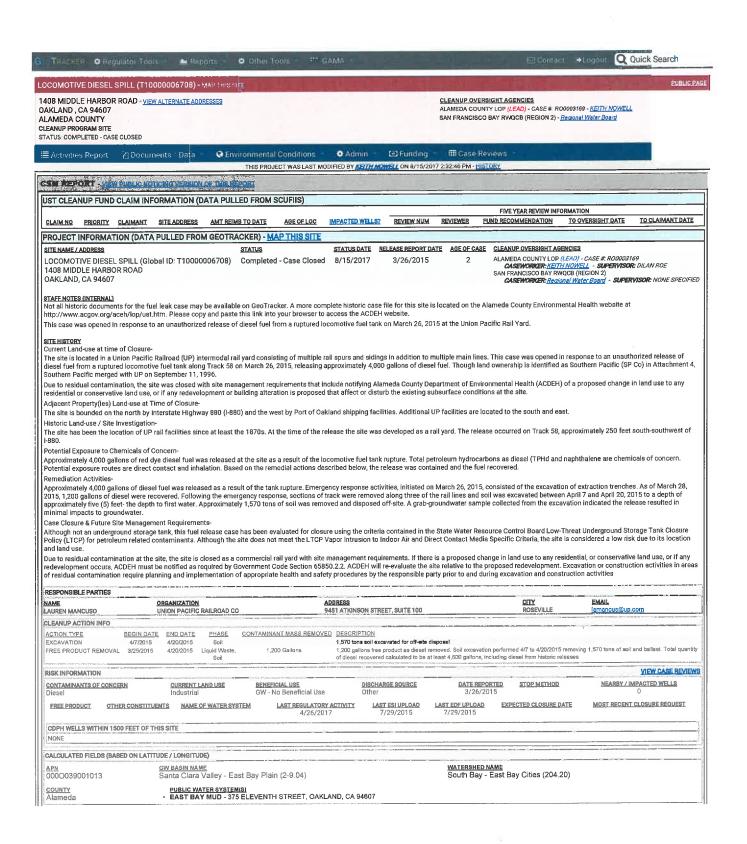
Geotracker Conceptual Site Model (Attachment 1, 2 pages)

Soil and Groundwater Evaluation and Data with Activities Report Summary (Attachment 2, 17 pages)

Responsible Party Information (Attachment 3, 2 pages)

Case Closure Public Notification Information (Attachment 4, 3 pages)

ATTACHMENT 1



| MOST RECENT CONCENTRATION FIELD PT NAME BOTTOM QCTB | DATE 4/14/2015 4/14/2015 | TPHg OTHER OTHER | BENZENE ND ND | TOLLIENE 1.3 UG/L ND | ETHYL-BENZENE ND ND | XYLENES 12 UG/L ND | MTBE | SI SUBMITTA TBA |
|--|--|---|--|----------------------------|----------------------------|--------------------------|--|--------------------|
| | Maria de la composición del composición de la composición de la composición del composición de la composición de la composición de la composición de la composición del composición de la composición del composic | The second control of | NE . | No. | No. | 112 | | |
| MOST RECENT CONCENTRATION | S OF PETROLEUM CONSTITU | JENTS IN SOIL - HIDE | | | | | VIEW E | SI SUBMITTA |
| FIELD PT NAME | DATE | TPHa | BENZENE | TOLUENE | ETHYL-BENZENE | XYLENER ND | MTBE | IBA |
| SS-1 | 4/14/2015 | | <u>ND</u> | ND | ND | | | |
| SS-10 | 4/14/2015 | | ND | ND | 990 UG/KG | 7500 UG/KG | | |
| SS-11 | 4/14/2015 | | ND | ND | ND | ND. | | |
| SS-12 | 4/14/2015 | | ND | ND | ND | ND | | |
| SS-13 | 4/14/2015 | | ND | ND ND ND | ND ND | ND | | |
| SS-14 | 4/14/2015 | | ND | ND | ND | 11 UG/KG | | |
| SS-15 | 4/14/2015 | | ND | ND | ND | 38 UG/KG | | |
| SS-16 | 4/14/2015 | | ND | 7.2 UG/KG | 9.3 UG/KG | 110 UG/KG | | |
| SS-17 | 4/14/2015 | | 10 10 10 10 10 10 10 10 10 | ND | ЙD | 440 UG/KG | | |
| SS-18 | 4/14/2015 | | <u>ND</u> | | ND | ND | | |
| SS-19 | 4/14/2015 | | ND | ND | ND | <u>ND</u> | | |
| SS-2 | 4/14/2015 | | ND | ND. | 9.9 UG/KG | 140 UG/KG | | |
| SS-20 | 4/14/2015 | | ND | <u>ND</u> | <u>ND</u> | <u>ND</u> | | |
| SS-21 | 4/14/2015 | | ND | ND | ND ND | 170 UG/KG | | |
| SS-22 | 4/14/2015 | | ND | <u>ND</u> | <u>ND</u> | <u>ND</u> | | |
| SS-23 | 4/14/2015 | | ND | <u>ND</u> | ND | 790 UG/KG | | |
| SS-24 | 4/14/2015 | | ND | ND | 23 UG/KG | 650 UG/KG | | |
| S\$-25 | 4/14/2015 | | ND ND | ND ND | ND | <u>ND</u> | | |
| SS-3 | 4/14/2015 | | ND | ND | ND | ND | | |
| S\$-4 | 4/14/2015 | | ND | <u>ND</u> | ND | ND. | | |
| SS-5 | 4/14/2015 | | ND | ND | ND | ND | | |
| SS-6 | 4/14/2015 | | ND | ND | ND | 22 UG/KG | | |
| SS-7 | 4/14/2015 | | ND ND ND | ND ND ND ND | ND | ND | | |
| SS-8 | 4/14/2015 | | ND | ND | NO NO NO NO NO | ND | | |
| \$\$-9 | 4/14/2015 | | ND | ND | ND | 15 UG/KG | | |
| WC-1 | 3/31/2015 | | ND | 91 UG/KG | 110 UG/KG | 5900 UG/KG | ND | |
| NC-2 | 3/31/2015 | | 18 UG/KG | 3000 UG/KG | 5400 UG/KG | 28000 UG/KG | ND | |
| NC-3 | 3/31/2015 | | ND | ND | 630 UG/KG | 3600 UG/KG | ND ND ND | |
| NC-4 | 4/8/2015 | | ND | ND. | ND | 130 UG/KG | ND | |
| WC-5 | 4/8/2015 | | ND | 510 UG/KG | 960 UG/KG | 5200 UG/KG | | |
| WC-6 | 4/B/2015 | | ND | ND | ND | ND | ND | |
| MOST RECENT GEO_WELL DATA - | HIDE | | | | | | VIEW E | SI SUBMITT |
| water and the state of the stat | and the state of t | | | | | | The state of the s | |
| NO GEO_WELL DATA HAS BEEN SL | IBMITTED TO GEOTRACKER E | SI FOR THIS SITE | | | | | | |

ATTACHMENT 2

RECEIVED





Mr. Keith Nowell, PG, CHG Hazardous Materials Specialist Alameda County Environmental Health 1131 Harbor Bay Parkway Alameda, California 94502-6540 ARCADIS U.S., Inc.
101 Creekside Ridge Court
Suite 200
Roseville
California 95678
Tel 916 786 0320
Fax 916 786 0366
www.arcadis-us.com

ENVIRONMENT

Subject

Red Dye Diesel Fuel Release Response Revised Summary Report Union Pacific Raiiroad Oakland, CA – March 26, 2015 Locomotive Fuel Release Alameda County Case Number RO3169

Dear Mr. Nowell:

ARCADIS U.S., Inc. (ARCADIS) has prepared this summary report on behalf of Union Pacific Railroad (UPRR). This report summarizes response activities implemented following a locomotive red dye diesel fuel release that occurred on March 26, 2015 along Track 58 at the Intermodal Yard in Oakland, California (Site; Figure 1).

This report has been prepared at the request of the Alameda County Environmental Health Department (ACEHD) and presents background information, release response activities, sampling results, data evaluation, and project conclusions and recommendations related to the release.

The ACEHD requested copies of the analytical laboratory reports associated with waste characterization soil samples WC-1 through WC-6 and disposal manifests for material removed for off-site disposal in an emailed dated July 14, 2015. This report has been revised to accommodate the ACEHD requests.

Background

On March 26, 2015, UPRR personnel were moving a locomotive along Track 58 at the Site, and a damaged track ruptured the fuel tank of the locomotive. The rupture caused a diesel fuel release that extended approximately 215 feet along Track 58 and adjacent Tracks 57 and 59. The diesel fuel release area is approximately 3,000 feet from the nearest surface water (Figure 1) and the extent of the release area is shown on Figure 2.

Date:

July 29, 2015

Contact:

Scott Hackman

Phone:

916.786.7369

Email:

scott.hackman@arcadisus.com

Our ref:

RV009598.0000

UPRR estimated that approximately 4,000 gallons of diesel fuel were released from the locomotive fuel tank, based upon observed fuel tank levels. Immediately after identifying that the release occurred, UPRR contacted NRC and ARCADIS for cleanup support.

UPRR also notified the appropriate local and state agencies associated with release notification practices. Representatives from the ACEHD and the California Department of Fish and Wildlife visited the Site and observed the release response activities on March 26, 2015.

ACEHD upload requirements, a request for a work plan, and ACEHD case worker contact information was communicated to UPRR in an ACEHD email dated March 30, 2015. The *Updated Soil Excavation Work Plan*, prepared by ARCADIS and dated April 8, 2015 (the Work Plan), was submitted to the ACEHD and subsequently contingently approved by the ACEHD with requests on April 13, 2015. The release response and soil excavation activities summarized in this report were conducted in accordance with ACEHD requests and the Work Plan.

Objectives

The objectives of the response activities were to recover diesel product released on March 26, 2015 and to remove soil impacted by the March 26, 2015 release to the extent practicable.

These objectives were accomplished by excavating soil exhibiting the presence of newly released diesel fuel along the track and by recovering diesel product and contaminated water from the excavation. A summary of completed response activities is presented below.

Initial Release Response Scope of Work Conducted

Emergency response activities were conducted between March 26, 2015 and April 6, 2015 by ARCADIS and NRC on behalf of UPRR. These activities included advancing recovery trenches to remove product, removing portions of UPRR rail to facilitate soil excavation, and collecting waste characterization samples. The waste characterization sample locations are shown on Figure 2 and field photographs are included in Attachment 1.

On March 26, 2015, NRC and ARCADIS mobilized to the Site to assess the extent of impact and to initiate release response activities. Absorbent booms were placed at surface storm water drainage vaults and storm water outfalls in the vicinity of the release. Released diesel product was not observed in the storm water system on the Site during the release response.

NRC notified the Underground Service Alert and UPRR Call Before You Dig Hotline prior to subsurface disturbance.

Two approximately 200-foot-long recovery trenches (Trenches 1 and 2) were excavated to a depth of approximately 3 feet below ground surface (bgs) between Tracks 57 and 58 (Trench 1) and between Tracks 58 and 59 (Trench 2) to remove free product using a vacuum truck. In addition, on March 28, 2015 a third recovery trench (Trench 3) was excavated to a depth of approximately 4.5 feet bgs between Tracks 59 and 60 based on lateral extent potholing visual observations.

Corrugated polyvinyl chloride (PVC) pipe wrapped in mesh was installed in Trenches 1, 2, and 3 to collect diesel product. The trenches were backfilled with native material, and recovered product and water were purged from risers on each end of the PVC pipe using a vacuum truck. The diesel release area and recovery trench locations are shown on Figure 2.

Approximately 220 feet of track were removed from Track 58 and approximately 85 feet of track were removed from Tracks 57 and 59 to facilitate excavation. The excavation area was secured using orange safety barriers to prevent unauthorized entry into the work zone.

Soil Excavation Scope of Work Conducted

The excavation phase of this project was conducted between April 7, 2015 and April 20, 2015. The excavation was backfilled on April 21 and April 22, 2015. The excavation activities included removing visually impacted soil, collecting sidewall samples from left-in-place soil, and backfilling. The soil excavation area, left-in-place soil sampling locations, and soil sample diesel concentrations are shown on Figure 3. Field photographs are included in Attachment 1, and analytical laboratory reports, laboratory chromatograms, and a data validation memo are included in Attachment 2.

On April 7, 2015, Mainline, a UPRR excavation contractor, began to excavate dieselimpacted soil in the area of Track 58 beginning at the north end of the imapcted area.

The recovery trenches were destroyed during the excavation activities. The excavated soil was stockpiled in a staging area before being loaded into gondola cars provided by UPRR for transport to ECDC Environmental Landfill (ECDC) in East Carbon, Utah.

An access road was built over rails near the south end of the excavation connecting the excavation area with the staging area. NRC continued to pump water and product from the excavation and monitor storm water outfalls during the soil removal activities.

By April 20, 2015, visually impacted soil removal was complete and approximately 1,570 tons of soil had been excavated. The completed excavation measured 214 feet long by 16.5 feet wide, with an 80-foot-long section in the center extended outward an additional 9 feet on the north side and 10 feet on the south side. The excavation was advanced to a depth of 5 feet bgs approximately to first encountered groundwater.

The excavation was extended to the extent practicable that met the objectives of the response activities. The excavation was extended to first encountered groundwater and laterally to the edge of the nearest active rail line and railroad infrastructure.

Excavation Backfilling

The bottom 3 feet of the excavation were backfilled by Mainline using approximately 970 tons of imported virgin Class II aggregate base from Graniterock – Wilson Quarry (Graniterock) in Aromas, California. In addition, the top approximately 2 feet of the excavation were backfilled by Mainline using ballast rock as requested by UPRR.

Sample results provided by Graniterock for the virgin Class II aggregate base were presented to the ACEHD in an email dated April 21, 2015. The ACEHD approved the backfill in its email to UPRR dated April 21, 2015. Copies of the sample results and the email communication are included in Attachment 3.

Waste Management

Six representative soil samples were collected from the release area to characterize the soil for disposal (WC-1 through WC-6; Figure 2). Based on the analytical results, the approximately 1,570 tons of excavated soil were classified as non-RCRA, California-hazardous waste, loaded onto gondola cars, and transported by rail to ECDC. Signed soil disposal manifests and tabulated ECDC measured soil weights are included in Attachment 4.

Red dye diesel product was purged from the three recovery trenches and from the excavation by a vacuum truck. Approximately 1,200 gallons of product and approximately 35,500 gallons of water were recovered during the response activities and containerized in two on-site aboveground tanks.

A sample of the water (Tank A3635 in Table 1) and a sample of the product were collected by NRC for characterization purposes. Based on the analytical results, the approximately 1,200 gallons of recovered product were classified as non-RCRA, California-hazardous waste and transported by truck to Clean Harbors in San Jose, California and the approximately 35,500 gallons of water were classified as non-hazardous waste and transported by truck to Altamont Landfill in Livermore, California. Signed liquid disposal manifests are included in Attachment 4.

Sampling Activities

On April 14, 2015, 25 post-excavation soil samples were collected from soil left in place on the excavation sidewalls at approximate depths ranging from 2.5 to 4.0 feet bgs. Soil samples were collected from sidewall areas with assumed highest concentrations of diesel using an excavator bucket. In addition, a sample was collected from water observed in the bottom of the excavation.

The soil samples and water sample were analyzed for the following:

- Total extractable petroleum hydrocarbons as diesel range organics (TPH-E [DRO]; carbon chain C13 through C22 with silica gel cleanup), using United States Environmental Protection Agency (USEPA) Method 8015B
- TPH-E as oil range organics (ORO; carbon chain C23 through C40 with silica gel cleanup), using USEPA Method 8015B
- TPH-Purgeable as gasoline range organics (TPH-P [GRO]; carbon chain C4 through C12), using USEPA Method 8260B
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) and naphthalene, using USEPA Method 8260B.

The collected samples were labeled, placed in an ice-chilled cooler, and delivered to TestAmerica of Pleasanton, California, a California-certified laboratory. Chain-of-custody documentation is included in Attachment 2. The approximate soil sampling locations are shown on Figure 3.

Data Validation

Analytical data were reviewed by Conestoga-Rovers & Associates (CRA) in accordance with the criteria established by the analytical methods and the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, dated June 2008.

Duplicate soil samples were collected to support the data validation process. As shown in Table 1, sample D-1 correlated with sample SS-10-3.5, sample D-2 correlated with sample SS-17-3.5, sample D-3 correlated with sample SS-18-3.5, and sample D-4 correlated with sample SS-20-3.5. Duplicate samples were included in the data assessment.

Based on the information presented in the validation memo reference number 058324-1957, prepared by CRA and dated May 22, 2015, the summarized data are acceptable with the specific qualifications noted in the memo.

Water Analytical Results Summary

The water sample collected from the bottom of the excavation was labeled "Bottom Sample" (Table 1). TPH-P (GRO) was detected at 100 micrograms per liter (μ g/L), TPH-E (DRO) was detected at 130 μ g/L, toluene was detected at 1.3 μ g/L, and xylenes were detected at 12 μ g/L in the water sample. TPH-E (ORO), benzene, ethylbenzene, and naphthalene were not detected above their respective reporting limits.

Groundwater is not a current or potential drinking water source at the Site, TPH-P (GRO) and TPH-E (DRO) concentrations detected in the water sample collected from the excavation were compared to the December 2013 San Francisco Bay Regional Water Quality Control Board (RWQCB), Environmental Screening Levels (ESLs; Table F-1b). The TPH-P (GRO) 100 μg/L concentration and TPH-E (DRO) 130 μg/L concentration were both below their respective 500 μg/L and 640 μg/L ESLs.

Soil Analytical Results Summary and Chromatogram Assessment

Soil and water analytical results are summarized in Table 1, including BTEX. Soil sample locations and TPH-E (DRO) results are shown on Figure 3. Soil analytical results are summarized below.

Soil sample concentrations were compared to the December 2013 RWQCB groundwater protection ESLs (Table G), with the exception of TPH-E (ORO) concentrations, which were compared to the December 2013 RWQCB commercial/industrial (C/I) worker exposure scenario ESL (Table K-2).

BTEX and Naphthalene

Benzene was not detected at concentrations above the reporting limit in the 29 soil samples collected. Toluene, ethylbenzene, total xylenes, and/or naphthalene were detected at very low concentrations below their respective ESLs and slightly above the laboratory reporting limit in 11 of the 25 primary soil samples. Based on the non-detect benzene and less than ESL toluene, ethylbenzene, total xylenes, and naphthalene concentrations, the results discussion in this report focused on evaluating TPH-P (GRO), TPH-E (DRO), and TPH-E (ORO) as summarized below.

TPH-P (GRO)

TPH-P (GRO) was detected in all 29 soil samples collected from the excavation sidewalls at concentrations ranging from 0.91 to 660 milligrams per kilogram (mg/kg). TPH-P (GRO) was not detected at concentrations greater than the 3,800 mg/kg ESL.

Based on review of the soil sample analytical chromatograms included in Attachment 2, the analytical laboratory indicated TPH-P (GRO) detections are the result of heavier hydrocarbons associated with the recent diesel release and/or preexisting hydrocarbons eluting in the GRO range, and are not representative of hydrocarbons resulting from gasoline products.

TPH-E (DRO)

TPH-E (DRO) was detected in 27 of 29 soil samples collected from the excavation sidewalls at concentrations ranging from 97 to 14,000 mg/kg. TPH-E (DRO) was detected in 11 soil samples at concentrations greater than the 3,600 mg/kg ESL. Based on review of the soil sample analytical chromatograms included in Attachment 2, the soil samples contained relatively unweathered diesel range hydrocarbons as well as significantly weathered oil range hydrocarbons, as described below.

TPH-E (ORO)

TPH-E (ORO) was detected in 14 of 29 soil samples collected from the excavation sidewalls at concentrations ranging from 300 to 7,600 mg/kg. TPH-E (ORO) was not detected at concentrations greater than the 100,000 mg/kg C/I ESL.

Based on review of the soil sample analytical chromatograms included in Attachment 2, the oil range hydrocarbons typically lack distinct alkane peaks. These data suggest that the oil range hydrocarbons are significantly weathered and likely significantly pre-date the March 26, 2015 release. These oil range hydrocarbons also contribute to the detected TPH-E (DRO), increasing the apparent concentration of TPH-E (DRO).

Mass Removal Estimate

Based on the TPH-E (DRO) concentrations reported in waste characterization soil samples and the approximately 1,570 tons of excavated soil, it is estimated that between 4,643.4 and 6,593.9 gallons of TPH-E (DRO) were recovered during remedial excavation activities. These lower and upper recovery values were generated using both the geometric mean and arithmetic average of soil concentrations, respectively, reported for soil collected during waste characterization activities (waste characterization samples WC-1 through WC-6). Copies of the analytical laboratory reports associated with samples WC-1 through WC-6 are included in Attachment 2 and a table showing the mass calculation is included in Attachment 4.

The calculated range of TPH-E (DRO) recovered in soil, combined with the additional approximately 1,200 gallons of diesel product recovered in liquid phase during the response activities, yields total recovered volumes estimated between 5,843.4 and 7,793.9 gallons. Recovered quantities in excess of the initial release estimate volume (approximately 4,000 gallons) may represent a recovery of additional, historical TPH-E (DRO) present in site soil. These data suggest that the majority of hydrocarbon mass associated with the March 26, 2015 diesel release have been recovered.

Conclusions

Based on the response activities already conducted and results of soil and water analyses, the following conclusions can be made:

- Approximately 4,000 gallons of red dye diesel were released from a ruptured locomotive fuel tank on March 26, 2015. Emergency response, product recovery, soil removal, sample collection, and backfilling were conducted in accordance with the Work Plan.
- Released diesel product was not observed in the site storm water system during the release response activities.
- Approximately 1,570 tons of soil were excavated and transported off site for proper disposal. The excavation was extended to the extent practicable to first encountered groundwater and laterally to the nearest active rail line and railroad infrastructure.
- Approximately 1,200 gallons of product were recovered from recovery trenches and the bottom of the excavation.
- Based on TPH-E (DRO) results from waste characterization samples, and including
 the approximately 1,200 gallons of product recovered, the calculated total
 recovered TPH-E (DRO) mass estimate ranges between approximately 5,840 and
 7,790 gallons. These data suggest that the majority of hydrocarbon mass
 associated with the March 26, 2015 diesel release was recovered.
- Results of left-in-place soil sampling activities indicate that TPH-E (DRO) attributable to the recent locomotive fuel release was detected in soil samples collected from excavation sidewalls; however, more than half of the samples exhibited TPH-E (DRO) concentrations below the soil ESL and groundwater is not impacted at levels above the groundwater ESL.
- Preexisting hydrocarbon impacts were also detected, including the presence of significantly weathered diesel and oil range hydrocarbons.
- TPH-P (GRO) detected in many of the soil samples was determined by the analytical laboratory to be the result of hydrocarbons associated with heavier-chain fuel diesel and oil contributing to laboratory quantitation of TPH-P (GRO) rather than hydrocarbons associated with gasoline products.
- Analytical results for a water sample collected from the bottom of the excavation indicated the presence of only very low concentrations of TPH-E (DRO), suggesting that removal of soil affected by the March 26, 2015 release prevented significant impact to groundwater.
- Groundwater is not a current or potential drinking water source at the Site and the release area is approximately 3,000 feet from the nearest surface water.

• The lack of significantly elevated dissolved-phase hydrocarbons in water sampled from the bottom of the excavation indicates that preexisting hydrocarbon impacts to soil have not leached to groundwater at rates that exceed the rate of natural attenuation. This suggests that residual diesel left in place following the March 26, 2015 release will also degrade due to natural attenuation.

Based on the Site data, the majority of hydrocarbon mass associated with the March 26, 2015 diesel release has been recovered, the release response objectives have been met, and groundwater has not been impacted to levels above the ESLs. Therefore, no further action is recommended.

Perjury Statement

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Closing

If you have any questions or comments, please contact Scott Hackman at 916.786.7369.

Sincerely,

ARCADIS U.S., Inc.

Scott Hackman Project Manager

Becky Gerard, PE

Rebecan Sc

(No. C82077, expires 3/31/16)

Project Engineer

C 82077

CIVIL

OF CALIFORNIA

Attachments:

Table 1 Summary of Soil and Water Analytical Results

Figure 1 Site Plan

Figure 2 Waste Characterization Sample Locations

Figure 3 Excavation Detail Showing TPH-E (DRO) Results

Attachment 1 Site Photographs

Attachment 2 Laboratory Analytical Report and Data Validation Memorandum

Attachment 3 Backfill Results

Attachment 4 . Excavated Soil Information and Manifest Copies

Copies:

Lauren Mancuso, UPRR James Eisert, ARCADIS

ARCADIS

Table

TABLE 1

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Summary of 8oll and Water Analytical Results March 26, 2016 Locomotive Fuel Release Caldonid, California

| | - | | | Total Petroleum | Total Petroleum Hydrocarbons | | > | Volatile Organic Compounds | Compounds | | |
|-------------------------|-----------|--------------|------------|-------------------|------------------------------|------------------|---------|----------------------------|--------------|---------------|--------------|
| 38 | Side Wall | | | SW846 Method | SW846 Method 8013B with SGC | | TS . | SWE48 Method 8280B/CA LUFT | BICA LUFTIN | | |
| | Sample | Collection | Collection | TPH-DRO (C13-C22) | TPH-ORO (C23-C40) | TPH-GRO (C4-C12) | Benzame | Toknene | Ethylbenzene | Total Xulanes | Nanfrihalana |
| ê | ┪ | Date | Time | mg/kg | mg/kg | mgikg | mg/kg | EMORE | marka | FRONTAL | merke |
| | | 04/14/15 | 12:30 | 2,300 | 1,000 | 1.6 | Ş | 2 | S | CN | S |
| _ | 3,5 | 04/14/15 | 12:35 | 7,700 | <u>Q</u> | 310 | QV | Q | 0.0039 | 0.14 | 0.044 |
| \$8-3.4.0 | 4.0 | 04/14/15 | 12.45 | 1,100 | 2 | 7.9 | Q | QN | S | S | S |
| SS-4-2.5 | 20 | 04/14/15 | 12:50 | 3,800 | Ð | 3.7 | 2 | 2 | Q | 2 | Ę |
| 85-5-3.0 | 3.0 | 04/14/15 | 13:20 | 340 | 380 | 2 | Q | Q | 2 | Ş | 2 |
| 88.00 | 3.5 | 04/14/15 | 13:05 | 3,100 | 9 | 2.0 | Q | 2 | Q | 0.022 | 50 |
| 58-7-3.5 | 3.5 | 04/14/15 | 12:25 | 999 | 380 | 0.91 | Q | 2 | Q | S | Ş |
| SG-8-2.5 | 2.5 | 04/14/15 | 12:20 | 3,900 | Q | 110 | Q | 2 | 2 | S | Ş |
| \$5-9-2.5 | 2.5 | 04/14/15 | 12:15 | 3,100 | 1,300 | 6,1 | QN | 2 | Q | 0.015 | 2 |
| _ | _ | 04/14/15 | 13:30 | 12,000 | 2 | 680 | Q | £ | 0.88 | 7.6 | , et |
| (3.9) | 3.5 | 04/14/15 | 13:32 | 13,000 | 2 | 390 | QN | 2 | S | 200 | Ş |
| | | 04/14/15 | 13:40 | 8,000 | Ð | 180 | Q | 9 | 2 | 2 | 2 |
| _ | _ | 04/14/15 | 13:50 | 3,600 | 3,200 | 3.3 | Q | 2 | 2 | 2 | 2 |
| - | _ | 04/14/15 | 14:00 | 4,600 | 4,100 | 4.8 | QN | 9 | 2 | 2 | 2 |
| | - | 04/14/15 | 14:10 | 2,000 | 1,500 | 2.9 | Q | 2 | 9 | 0.011 | 2 |
| | _ | 04/14/15 | 14:15 | 2,400 | 2,500 | 80. | Q | 2 | 2 | 0.038 | 2 |
| | 4.0 | 04/14/15 | 14.25 | 14,000 | 2 | 270 | Q. | 0.0072 | 0.0093 | 0.11 | 0.068 |
| | | 04/14/15 | 14.30 | 12,000 | 7,600 | 180 | £ | 2 | Q | 0.37 | 0.067 |
| 3.5) | | 04/14/15 | 14:32 | 8,100 | 6,900 | 180 | Ŷ | QN N | S | 0.44 | S |
| _ | - | 04/14/15 | 14:40 | 2,400 | Q. | P 899 | Q | 2 | Q | Q | 2 |
| 3.5) | _ | 04/14/15 | 14:43 | 2,600 | 9 | 3.6. | 9 | Q | Q | 2 | 2 |
| 6.55 | | 04/14/15 | 14.55 | 87 | 360 | 2 | Q | Ş | QN | Q | QN |
| _ | _ | 04/14/15 | 15:00 | 730 7 | 300 | 2.2 J | 2 | 2 | 2 | QN. | Q |
| (2.0) | | 04/14/15 | 15:04 | 2,600 J | 2 | 200 | 2 | 2 | QV | 2 | 2 |
| _ | _ | 04/14/15 | 15:10 | 6,400 | 2 | 27 | 2 | 9 | 2 | 0.17 | 2 |
| | _ | 04/14/15 | 15.20 | 2,500 | 2 | 6.2 | Q | 2 | Q | Q | 2 |
| | _ | 04/14/15 | 15.25 | 5,300 | 2,700 | 270 | 2 | 2 | 2 | 0.79 | 2 |
| _ | c. | 0474/15 | 15:30 | 3,700 | 1,500 | 190 | Q | 9 | 0.023 | 0.66 | 2 |
| 55-25.3.0 | Ť | Collection . | 15:40 | 3,000 | 2 | 25 | Q | Q | Q | Q | Đ. |
| Water Sample ID | - | Date | Time | HOV | ng. T | Digit. | nav. | LION. | ממער | gion. | great |
| BOTTOM SAMPLE | J | 04/14/15 | 12:00 | 130 | Q | 100 | 2 | 1.3 | S | \$ | 4 |
| | | Ě | Collection | | | | | | | - | 2 |
| Purge Water Tank Sample | 1 | Date | Time | HQL. | HQ/L | UQA. | HOV | MOT. | HOV. | No.L | Tion! |
| *TANK A3635 | _ | 04/08/15 | 8:00 | 3,200,000 | 130.000 | 130 000 | 9 | 900 | 2000 | | 100 |
| | | | | | | analan I | 7 | ZZn | 200 | 1700 | 180 |

Notes:

Bodd = Concentration defected atove laboratory reporting firmt
Bodd = Concentration defected atove laboratory reporting limit
= Not analyzed
= Not analyzed
TPH-LGRO (CA-C12) = Total Petroleum Hydrocarbons as Casoline Range Organics
TPH-LGRO (C3-C22) = Total Petroleum Hydrocarbons as Diesel Range Organics
TPH-LORO (C3-C22) = Total Petroleum Hydrocarbons as Oil Range Organics
SCC = Silica Gel Cleanp

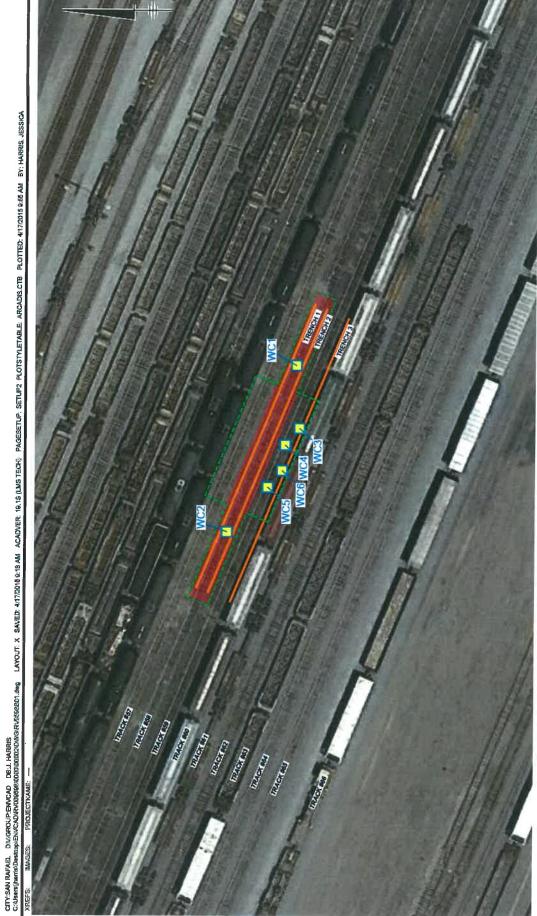
nigNig = Milligrams per kilogram LgAvig = Micrograms per kilogram LgAvig = Micrograms per liker * = recovered krulel from the excavation J = estimated wakes

Ouldand CA-May 28 2015 L Fixed Rel Table (8-8-15).ctx

ARCADIS

Figures





LEGEND

APPROXIMATE DIESEL RELEASE AREA ON 3/26/2015 APPROXIMATE SOIL EXCAVATION AREA

APPROXIMATE TRENCH LOCATION WC1

APPROXIMATE WASTE CHARACTERIZATION SAMPLE LOCATION

NOTES:

AERIAL IMAGE PROVIDED BY GOGGLE™ EARTH PRO, IMAGE DATE 6/9/2014.

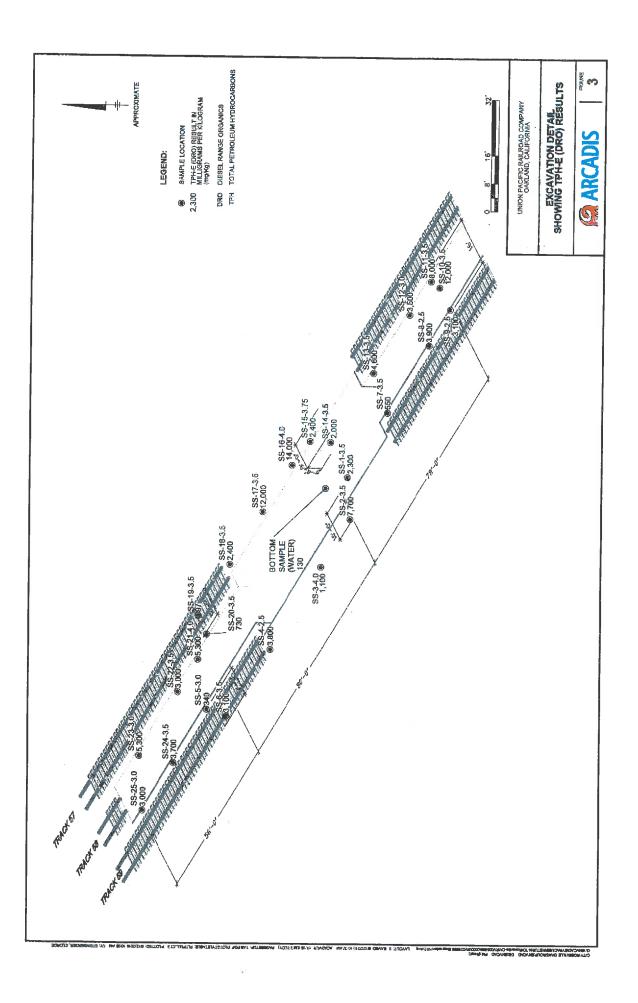
ALL SITE FEATURES AND LOCATIONS ARE APPROXIMATE.



UNION PACIFIC RAILROAD COMPANY OAKLAND, CALIFORNIA

WASTE CHARACTERIZATION SAMPLE LOCATIONS





ATTACHMENT 3

COUNTY OF ALAMEDA Property Value System

Help

New Query

History Value Transfer Map Glossary

Parcel Number: 18-390-10-13 Inactive:N Lien Date: 01/01/2016 Owner:S P CO 872-1-80H-26

Property Address: 3RD ST, OAKLAND, CA 94607

Parcel History

Mailing Name

Historical

Document Document

Value Parcel Use

Mailing Address

Date Number From Count

Trans Tax

S P CO 872-1-80H-26

PO BOX 2500 .. List

01/02/2010 ASSR-

0500

c/o LEONARD SHIRLEY

Owners BROOMFIELD, CO 80038

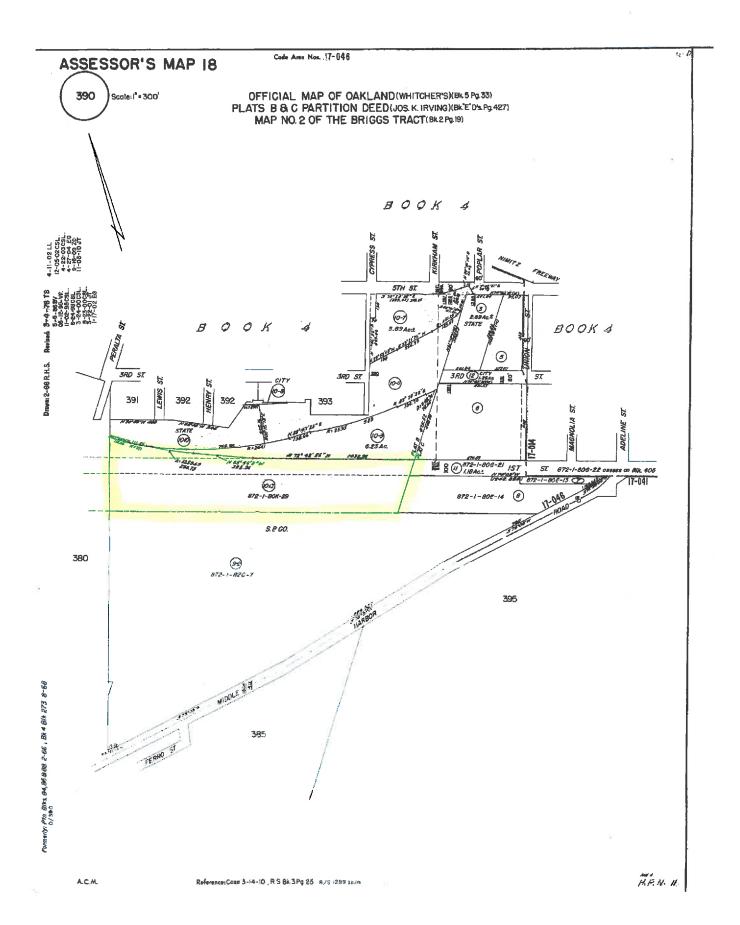
1130350

All information on this site is to be assumed accurate for property assessment purposes only, and is based upon

Assessor's knowledge of each property. Caution is advised for use other than its intended purpose.

The Alameda County Intranet site is best viewed in Internet Explorer Version 5.5 or later. Click here for more information regarding supported browsers.

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ATTACHMENT 4

ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY



REBECCA GEBHART, Acting Director

ENVIRONMENTAL HEALTH SERVICES ENVIRONMENTAL PROTECTION 1131 Harbor Bay Parkway, Suite 250 Alameda, CA 94502-6577 (510) 567-6700 FAX (510) 337-9335

INVITATION TO COMMENT - POTENTIAL CASE CLOSURE

LOCOMOTIVE DIESEL SPILL 1408 MIDDLE HARBOR ROAD, OAKLAND, CA 94607 SITE CLEANUP PROGRAM CASE RO00003169 GEOTRACKER GLOBAL ID T10000006708

July 13, 2016

The above referenced site is a Site Cleanup Program (SCP) case that is under the regulatory oversight of the Alameda County Department of Environmental Health (ACDEH) for the investigation and cleanup of petroleum hydrocarbons and metals contamination. Site investigation and cleanup activities have been completed, and it does not appear that residual contamination presents a risk to human health and the environment. Therefore, ACEH is considering closure of the case. Due to the residual contamination on site, the site would be closed with site management requirements that require further evaluation if the site is to be redeveloped in the future.

This notice is being sent to the current occupants and landowners of adjacent properties and known interested parties for this site. The public is invited to review and comment on the potential closure of the case. The entire case file can be viewed over the Internet on the ACEH website (http://www.acgov.org/aceh/lop/ust.htm) or the State of California Water Resources Control Board GeoTracker website (http://geotracker.waterboards.ca.gov). Please send written comments to Keith Nowell at ACEH, 1131 Harbor Bay Parkway, Alameda, CA 94502; all comments will be forwarded to the responsible parties. Comments received by August 12, 2016 will be considered and responded to prior to a final determination on the proposed case closure.

If you have comments or questions regarding this site, please contact the ACEH caseworker, Keith Nowell at 510-567-6764 or by email at keith.nowell@acgov.org. Please refer to ACEH case RO0003169 in any correspondence.

ATTACHMENT A

PUBLIC NOTIFICATION

Invitation to Comment – Potential Case Closure

| Parcel APN | Name | StreetAddress | Unit | City | Zip | Zip_4 |
|-------------|--|---------------------------|-----------|-----------------|--------|-------|
| 4-103-19 | ACARA REAL ESTATE INVESTMENTS LLC & BOOT LLC | 1526 3RD ST | | OAKLAND CA | 94607 | 1208 |
| 4-107-6-4 | BEASLEY BRUCE & LAURENCE TRS | 322 LEWIS ST | | OAKLAND CA | 94607 | 1236 |
| 4-103-20 | BITTER SEA 4 LLC | PO BOX 1094 | | SAUSALITO CA | 94966 | 1094 |
| 4-107-26-1 | CHURCH OF THE LIVING GOD FAITH TABERNACLE | PO BOX 21951 | | SAN JOSE CA | 95151 | 1951 |
| 18-392-4 | CITY OF OAKLAND | PO BOX 23440 | | OAKLAND CA | 94623 | 0440 |
| 4-103-16 | DOMINGUEZ PEDRO & RUTH | 1220 PARK AVE | Α | ALAMEDA CA | 94501 | 5280 |
| 18-392-6 | DONALD MARY E & RUCKS MACK K | 1525 3RD ST | | OAKLAND CA | 94607 | 1207 |
| 18-392-5 | GUZMAN ABBY | 5724 E 17TH ST | | OAKLAND CA | 94621 | 4237 |
| 18-392-8 | GUZMAN RUBEN & BELIA | 1519 3RD ST | | OAKLAND CA | 94607 | 1207 |
| 18-392-7 | GUZMAN VICENTE G & CASTELLANOS CARMEN | 1523 3RD ST | | OAKLAND CA | 94607 | 1207 |
| 18-390-10-3 | NATIONAL RAILROAD PASSENGER CORPORATION | 530 WATER ST | | OAKLAND CA | 94607 | 3532 |
| 4-103-18 | OCCUPANT | 1510 3RD ST | | OAKLAND CA | 94607 | |
| 18-391-3-2 | OCCUPANT | 1603 3RD ST | | OAKLAND CA | 94607 | |
| 18-390-9-2 | OCCUPANT | 1504 MIDDLE HARBOR RD | | OAKLAND CA | 94607 | |
| 4-103-20 | OCCUPANT | 1538 3RD ST | | OAKLAND CA | 94607 | |
| 6-1-1-6 | OCCUPANT | 1675 7TH ST | | OAKLAND CA | 94615 | |
| 4-107-6-4 | OCCUPANT | 323 LEWIS ST | | OAKLAND CA | 94607 | |
| 4-107-26-1 | OCCUPANT | 310 PERALTA ST | | OAKLAND CA | 94607 | |
| 4-103-16 | OCCUPANT | 1506 3RD ST | | OAKLAND CA | 94607 | |
| 18-392-15 | OCCUPANT | 1561 3RD ST | | OAKLAND CA | 94606 | |
| 18-392-5 | OCCUPANT | 1529 3RD ST | | OAKLAND CA | 94607 | |
| 4-105-29-1 | OCCUPANT | 1574 3RD ST | | OAKLAND CA | 94606 | |
| 4-105-16 | OCCUPANT | 1554 3RD ST | | OAKLAND CA | 94606 | |
| 4-105-26 | OCCUPANT | 303 HENRY ST | | OAKLAND CA | 94607 | |
| 18-380-3-6 | S P CO 872-1-77R-POR 96 | PO BOX 2500 | | BROOMFIELD CO | 80038 | |
| 18-391-3-2 | STATE OF CALIFORNIA | PO BOX 23440 MS 11A | | OAKLAND CA | 94623 | 0440 |
| 18-392-9 | TOVAR JOSE M & AMPARO | 1507 3RD ST | | OAKLAND CA | 94607 | 1207 |
| 4-103-17 | TRAN JENNIFER T | 1508 3RD ST | | OAKLAND CA | 94607 | 1208 |
| 6-1-1-6 | UNITED STATES POSTAL SERVICE | 395 OYSTER POINT BLVD | 225 | SOUTH SAN FRANC | 194080 | 1930 |
| 4-103-18 | WILLIAMS PETER B & SAMMEL CHELSEA | 1520 3RD ST | | OAKLAND CA | 94607 | 1208 |
| | CITY OF OAKLAND PLANNING & BUILDING | 250 FRANK H. OGAWA PLAZ | SUITE 211 | 40AKLAND CA | 94612 | 2 |
| | CITY OF OAKLAND PUBLIC WORKS | | SUITE | | | |
| | ENVIRONMENTAL SERVICES | 250 FRANK H. OGAWA PLAZA | 5301 | OAKLAND CA | 94612 | 2 |
| | SAN FRANCISCO BAY REGIONAL WATER QUALITY | | SLUTE 440 | COALLIAND CA | 0464 | 2 |
| | CONTROL BOARD | 1515 CLAY STREET | SUITE 140 | COAKLAND CA | 94612 | |
| | EAST BAY MUNICIPAL UTILITY DISTRICT | P.O. BOX 24055 | | OAKLAND, CA | 94623 | |
| | EAST BAY MUNICIPAL UTILITY DISTRICT | P.O. BOX 24055, MS 702, | | OAKLAND, CA | 94623 | |
| | UNION PACIFIC RAILROAD | 9451 ATKINSON, SUITE 100 | | ROSEVILLE, CA | 95747 | |
| | UNION PACIFIC RAILROAD | 1408 MIDDLE HARBOR ROAD | | OAKLAND, CA | 94607 | / |
| | UNION PACIFIC RAILROAD | 404 Constant Plant Const | Ctr 200 | Describe CA | ٥٢٥٦ | 0 |
| | Arcadis U.S. Inc. | 101 Creekside Ridge Court | Suite 200 | Roseville, CA | 95678 | 5 |
| | | | | | | |