KELLEHER & ASSOCIATES
Environmental Mgmt LLC

5655 Silver Creek Valley Road
PMB 281
San Jose, CA 95138
408-677-3307 (P)
408-677-3272 (F)
bkellehr@ix.netcom.com

RECEIVED
8:56 am, Mar 11, 2010
Alameda County
Environmental Health

March 9, 2010

Steven Plunkett
Alameda Country Health Care Services ("County")
1131 Harbor Bay Parkway, Suite 250
Alameda County, CA 94502-6577

LUFT Site: 900 Central Ave, Alameda (Site)
Re: Report Submittal –*Corrective Action Plan Addendum with Fact Sheet and Work Plan to Conduct Soil Vapor Sampling*, March 8, 2010.

Dear Mr. Plunkett:

On behalf of the parties contributing to the 900 Central Avenue Corrective Action Account, please find enclosed herewith a copy of the above-referenced document prepared by RRM, Inc., Santa Cruz, CA (RRM).

On behalf of the parties participating in site-remediation efforts, I declare under penalty of perjury that the information contained in the enclosed document is true and correct to the best of my knowledge.

RRM prepared the CAP Addendum, draft fact sheet and work plan pursuant to directives set forth in County correspondence dated February 17, 2010.

In the Revised CAP that is the subject of the addendum RRM summarizes available information on contaminant distribution in soil and groundwater, identifies and evaluates potential health risks and risk-exposure pathways, establishes appropriate risk-based cleanup goals to mitigate the identified risks, and identifies and evaluates four remedial options for meeting the cleanup goals. On the basis of the evaluations, RRM concluded that remedial excavation is the optimal remedial approach for meeting site-cleanup goals. Specifically, they are recommending excavating and off-hauling the most heavily impacted saturated soils in the central portion of the impacted area described above and then purging the pit of contaminated groundwater.

The attached CAP addendum provides additional goals for deeper soils (8 to 18 feet), provides an estimate of the time needed to restore groundwater quality to drinking water standards, and proposes to collect five soil vapor samples concurrent with the proposed cleanup work.

The targeted remedial-excavation work area is 30-feet long by 25-feet wide by 18-feet deep and involves about 500 bank cubic yards of soil that will be excavated and replaced with clean fill. The upper 7 feet of unsaturated soil (190 yards) is assumed to be free of contamination and will be off-hauled to a Class III landfill since there is nowhere to store it within the site boundaries. The 10-foot-thick interval of heavily-impacted saturated soils from 8 to 18 feet from grade (280 bank cubic yards) will be off-hauled to a Class II landfill. Depending on the groundwater recharge rate, the highly contaminated standing water that enters the pit will either be off-hauled for disposal via vacuum tank trucks or extracted and treated on site under a short-term public works permit with discharge to a sanitary sewer cleanout.

The CAP calls removing and replacing affected areas of street and sidewalk on the corner of Central and Ninth including the underlying storm-water collection system. It also calls for installing interlocking sheet shoring, confirmation sampling, traffic control, and appropriate safety and security measures. The project will require City grading and encroachment permits as well as County final

approval following a 30-day public comment period. It will also require CAL-Trans approval and pre-profiling the soils for disposal to allow for direct loading for Class II and III landfill disposal.

The work is optimally conducted in dry weather and during low-water-table conditions. The project is tentatively scheduled for July 2010 contingent upon securing all necessary permits and approvals.

RRM is in the process of making all the associated Geotracker and FTP uploads that are due in connection with this report.

Thank you for your ongoing courtesy and cooperation.

Sincerely:

Brian T. Kelleher
Court consultant/project coordinator

Cc with enclosure: Kim Dincel, Esq., Hines, Smith et al, counsel for Pearce Parties; Gail Ward, Senior Claims Specialist, Safeco, for Thompson Parties; Joe Ryan, Esq., Ryan & Lifter, counsel for Thompson Parties; Laurie Sherwood, Esq., Walsworth & Franklin et al counsel for Peterson Parties; Edward Martins, Esq., counsel for Ann Marie Holland and Estate of John Holland Sr.; Hal Reiland, counsel for Barbara Holland; Jack Holland Jr., c/o Mulholland Bros; cc cover letter only, Matt Kaempf, RRM

March 8, 2010
RRM Project # KCE514

900 Central Avenue Corrective Action Account
c/o Brian Kelleher
Kelleher & Associates
5655 Silver Creek Valley Road PMB 281
San Jose, CA 95138

Re: ***Corrective Action Plan Addendum with Fact Sheet and Work Plan for Soil Vapor Sampling***
900 Central Avenue
Alameda, California

Dear Mr. Kelleher:

This letter, prepared by RRM, Inc. (RRM), presents a Corrective Action Plan Addendum (CAP Addendum) for the referenced site (Figure 1). In a February 17, 2010 letter, the Alameda County Health Care Services Agency (County) requested preparation of this CAP Addendum to provide additional information regarding corrective action remediation goals and public notification, and a work plan for soil vapor sampling.

CORRECTIVE ACTION REMEDIATION GOALS

Estimated Time to Reach Groundwater Beneficial Use Cleanup Goals

Consistent with The San Francisco Regional Water Quality Control Board January 5, 1996 document, *Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites*, the proposed beneficial use cleanup goals presented in RRM's CAP (Revised September 16, 2009) were developed to restore groundwater quality in the area of the site to drinking water standards within a reasonable period of time, while the proposed risk-based groundwater cleanup goals were developed to immediately mitigate human health risks associated with the vapor intrusion pathway under a residential land use scenario.

As presented in the CAP, the recommended corrective action alternative is remedial excavation of saturated soils. Under this alternative, cleanup goals will be achieved by excavation of the majority of petroleum-impacted saturated soils and extraction of standing groundwater in the excavation within the area where dissolved gasoline range total petroleum hydrocarbons (TPHg) and benzene concentrations exceed the proposed risk-based groundwater cleanup goals. Based on RRM's experience with this corrective action technique at other similar leaking underground storage tank projects in Alameda

County, the proposed corrective action is expected to achieve the risk-based groundwater cleanup goals and the beneficial use cleanup goals in the area of corrective action within 12 to 24 months of completion of the excavation work.

As further discussed in the CAP, residual groundwater contamination will likely remain beneath Ninth Street (outside the area of corrective action) with levels of TPHg and benzene that will, in the interim, exceed the proposed beneficial use cleanup goals. However, given that the remedial excavation will have removed the secondary sources of petroleum hydrocarbons lying directly up-gradient of the residual contamination, the effect of natural attenuation is expected to be significant. Without corrective action (i.e. remedial excavation of saturated soil), EPA models project that average remediation times for natural attenuation could range between 50 to 200 years[1]; but since the majority of the secondary sources will be removed, the level of residual contamination is expected to decline to the proposed beneficial use cleanup goals at a much faster rate. As previously mentioned, based on RRM's experience using the proposed remedial technique, the rate of natural attenuation will be enhanced by exposure to the atmosphere of the excavation sidewalls and standing groundwater. RRM estimates that 12 to 24 months of follow-up groundwater monitoring data showing a decreasing trend will be sufficient to demonstrate that beneficial use cleanup goals will be met in a reasonable period of time.

Soil Cleanup Goals

The residential land use values presented in Table D of the San Francisco Bay Regional Water Quality Control Board (RWQCB) document *Screening for Environmental Concerns at Sites with Contaminated Soil and Water* (Interim Final-November 2007, Revised May 2008) for deep soils (greater than 3 meters below ground surface) where groundwater is not a current or potential source of groundwater are presented below as proposed cleanup goals for soil deeper than 8 feet below ground surface (bgs).

Soil Excavation Cleanup Goals (mg/kg)

Compound	Concentration	Reference
Benzene	2.0	(Table D)
Toluene	9.3	(Table D)
Ethylbenzene	4.7	(Table D)
Xylenes	11	(Table D)
TPHg	180	(Table D)

During the remedial excavation work, efforts will be made to remove soil that exceeds the proposed cleanup goals, however, the extent of the excavation may be limited by physical constraints such as utility lines or public streets and it is likely some lower level contamination will be left in place peripheral to the excavation boundaries. As discussed above, the residual saturated soil contamination is expected to decline relatively quickly once the high-concentration source area immediately up-gradient has been removed.

[1] EPA, *An Overview of Underground Storage Tank Remediation Options*, EPA 510-F-93-029. October 1993.

PUBLIC NOTIFICATION

A draft fact sheet and list of addresses within a 300-foot radius of the site are included in Attachment A, and the proposed truck haul route is shown on Figure 1.

WORK PLAN FOR SOIL VAPOR SAMPLING

Pre-field Activities

Prior to conducting fieldwork, RRM will obtain utility clearance from USA North and drilling permits from the Alameda County Public Works Agency, if applicable. Additionally, a site-specific health and safety plan will be prepared.

Soil Vapor Sampling

To comply with Alameda County directives, RRM proposes to collect five soil vapor samples from areas adjacent to the Site's existing duplex condominium in conjunction with the remedial excavation work (Figure 2). The sampling will be conducted in general accordance with the January 2003 Department of Toxic Substances Control, *Advisory – Active Soil Gas Investigations*.

An expendable point and holder will be attached to a drive rod and the rod will be advanced to approximately 5 feet bgs. After reaching the target sampling depth, the drive rod and expendable point holder will be retracted to create a void. Hydrated bentonite will be used to seal around the drive rod at the ground surface to prevent ambient air intrusion. A post run tubing adapter (PRT) and disposable polyethylene tubing will be advanced down the inner rods and secured to the holder. The sampling procedure will entail drawing a soil vapor sample through the probe, tubing, and into a sample manifold. The sample manifold will be outfitted with Swagelok-type valves, vacuum pressure gauges, and six-liter Summa™ purge and sample canisters.

Purge and leak testing and soil vapor sampling will occur at least 30 minutes after probe installation and will not take place during or after a significant rain event (1/2-inch or greater). Prior to sampling, a purge test to determine the appropriate purge volume will be conducted at the location with the highest expected vapor concentration. The purge volume will be estimated based on the summation of the internal volume of tubing and manifold, expendable holder and PRT adapter. Purge tests of one, three, and seven volumes will be conducted; the purge volume that yields the greatest concentration of volatile organic compounds (VOCs) will be selected as the purge volume to be applied at all subsequent sampling locations. A default of three purge volumes will be used if VOCs are not detected during any of the purge tests. A flow regulator will be placed in-line prior to the Summa™ canisters to maintain purging and sampling rates between 100 and 200 milliliters per minute.

Prior to sampling at each location, a leak test will be conducted. Isopropanol will be used as the leak check compound. The compound will be placed at all locations where ambient air could enter the sampling system (i.e. sample system connections, surface seals, etc.), and all vapor samples will be analyzed for isopropanol.

Soil vapor samples will be collected in clean decontaminated six-liter Summa™ canisters. One duplicate sample will be collected for each day of soil vapor sampling activities; it is expected that only one day of sampling activities will be required. If the samples are shipped for laboratory analyses, a trip blank will travel with the samples, and will be analyzed for the target compounds. After each use, the drive rods and other reusable components will be decontaminated to prevent cross-contamination.

Following sampling, the probe will be removed and the hole will be filled with grout. The surface will be refinished to match the existing surrounding surface.

Laboratory Analyses

Soil vapor samples will be submitted to a State-certified laboratory and analyzed for the presence of gasoline range total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes and isopropanol using EPA Method TO-15. Additionally, methane, O_2, and CO_2 will be analyzed, and the laboratory detection limits for these compounds will be one percent or less.

Reporting

The results of the soil vapor sampling will be included with the results of the remedial excavation work in a Remedial Action Completion Report.

Should you have any questions regarding the contents of this work plan, please call RRM at (831) 475-8141.

Sincerely,

RRM, Inc.

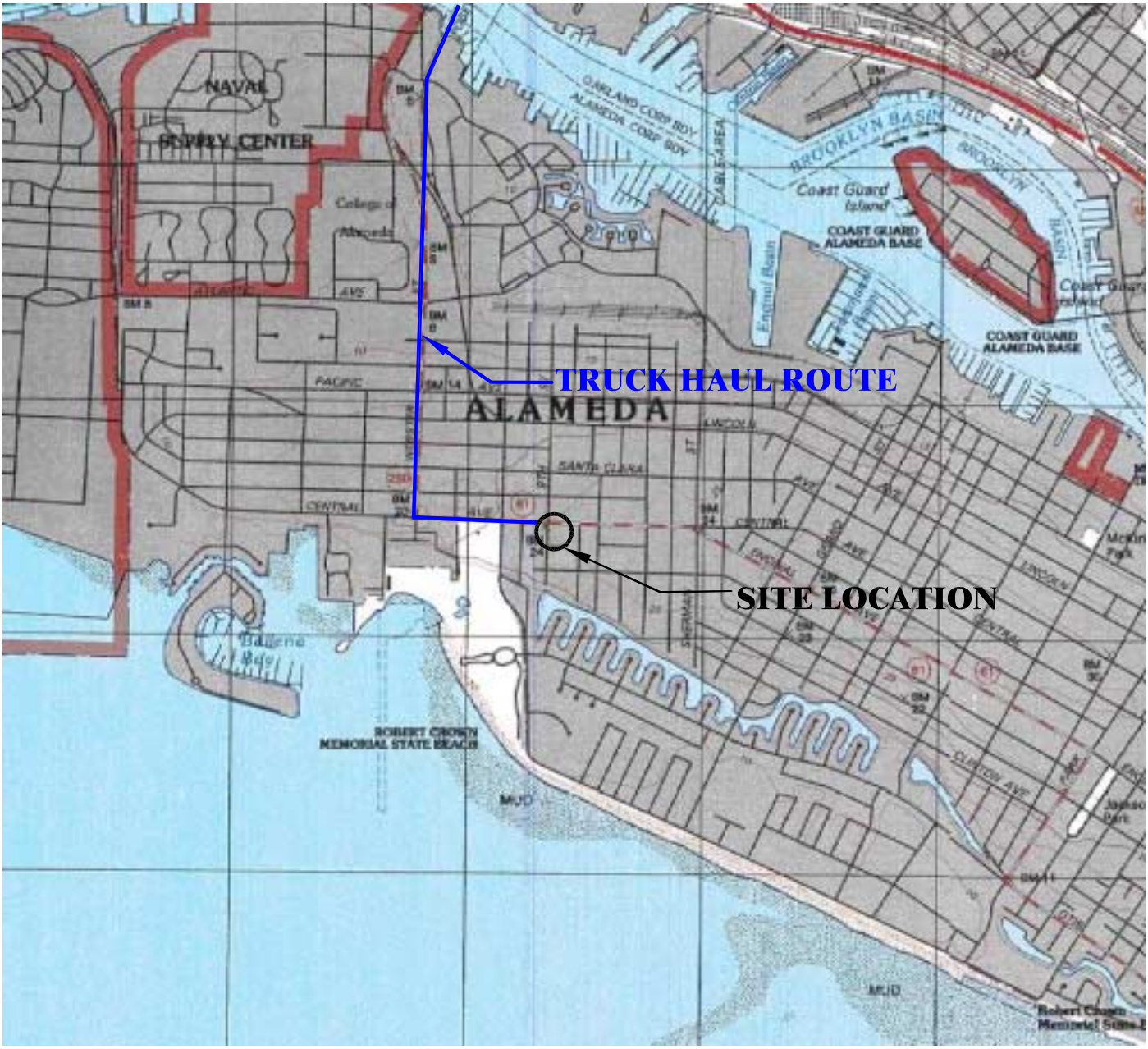
Matt Kaempf
Project Manager

Matthew Paulus
Senior Geologist, PG 8193

PROFESSIONAL GEOLOGIST
MATTHEW J. PAULUS
No. 8193
STATE OF CALIFORNIA

Attachments:

Figure 1	Site Location Map
Figure 2	Site Map Showing Proposed Area of Excavation and Soil Vapor Sampling Locations
Attachment A	300-Foot Radius List of Addresses and Draft Public Participation Fact Sheet



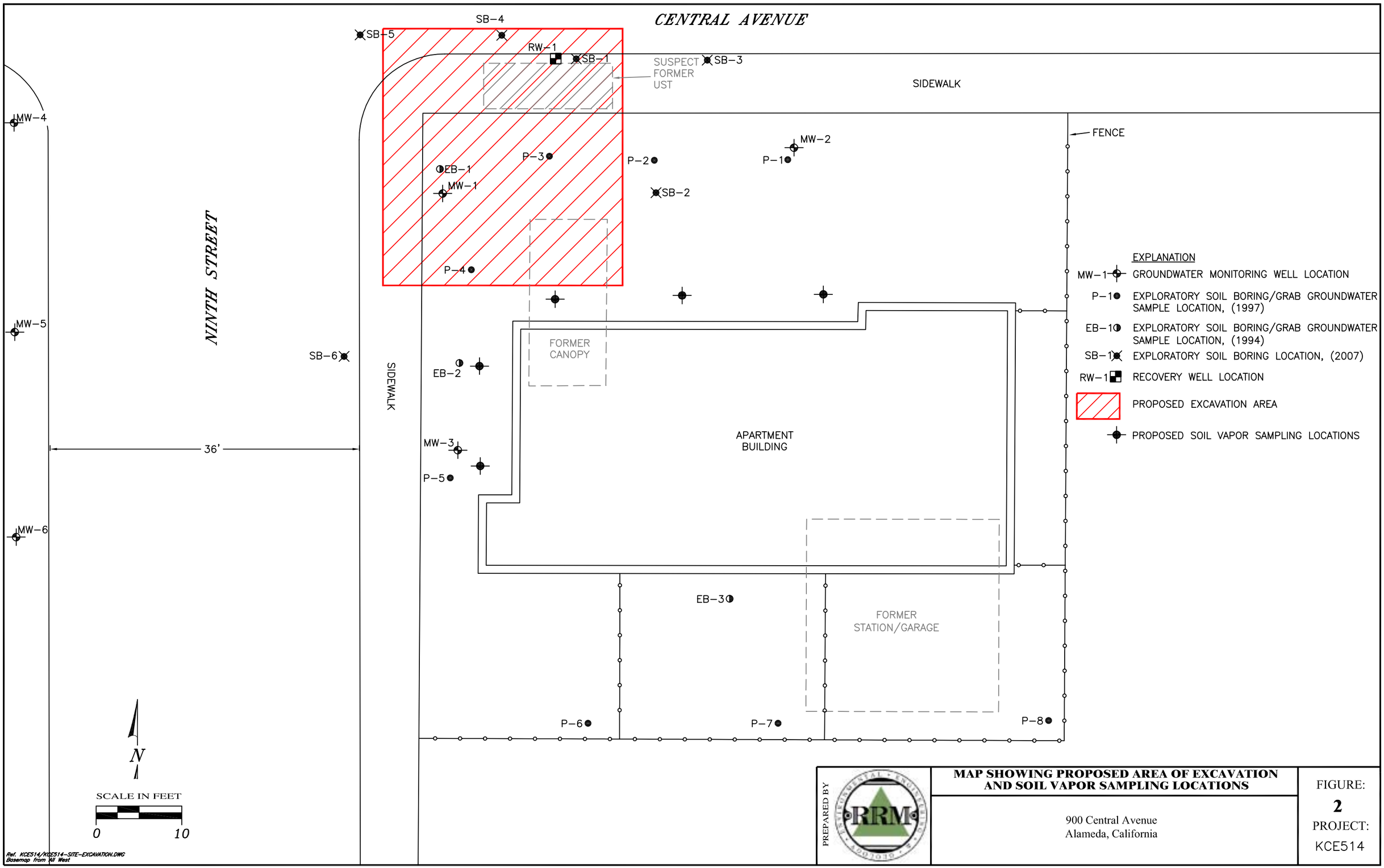
Ref. KCE514/KCE514-SLM.DWG
Base Map from TOPO!! NGH

PREPARED BY

SITE LOCATION MAP WITH TRUCK HAUL ROUTE

900Central Avenue
Alameda, California

FIGURE:
1
PROJECT:
KCE514



Ref. KCE514/KCE514-SITE-EXCAVATION.DWG
Basemap from NI West

PREPARED BY

MAP SHOWING PROPOSED AREA OF EXCAVATION AND SOIL VAPOR SAMPLING LOCATIONS

900 Central Avenue
Alameda, California

FIGURE:
2
PROJECT:
KCE514

A

300-FOOT RADIUS LIST OF ADDRESSES AND DRAFT PUBLIC PARTICIPATION FACT SHEET

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
ALEX BRISCOE, Acting Director

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

DRAFT FACT SHEET
HOLLAND OIL/PEARCE PROPERTY
March 8, 2010

Site Location: 900 Central Avenue, Alameda
SLIC Case #RO0000084 and Geotracker Global ID #T0600102089

Summary – This fact sheet has been prepared to inform community members and other interested parties of a proposed cleanup plan for a former retail gasoline service station and repair shop at 900 Central Avenue in Alameda, California. The property is located on the southeast corner of Central Avenue and Ninth Street in Alameda. This property was occupied by a gas station from approximately 1931 until 1975. Three 500-gallon underground storage tanks (USTs) were removed from the sidewalk along the Central Avenue boundary of the property in September 1975. The service station facilities were demolished in 1978, at which time the property was redeveloped for its current residential use (duplex condominium).

Soil and groundwater contamination associated with historic unauthorized releases from the USTs was discovered on the property in 1994. The results of subsequent investigations have revealed that a plume of gasoline-contaminated groundwater approximately 60 feet long by 30 feet wide extends west under the former UST area across the northwest corner of the property and then approximately halfway under Ninth Street. The contaminated groundwater occurs at approximately 8 to 15 feet below the ground surface. The levels of benzene and other petroleum hydrocarbon constituents within the central portion of the plume are high enough to require corrective actions under existing environmental statutes intended to conservatively protect public health. Accordingly, the responsible parties retained the consulting firm Remediation Risk Management, Santa Cruz, CA (RRM) to conduct feasibility studies and develop a formal corrective action plan (CAP) to mitigate the risk pursuant to statutory requirements.

Next Step – The proposed formal CAP, prepared by RRM, which is the subject of this fact sheet, calls for removing a portion of the sidewalk including the catch basins where the USTs were originally located, and then over-excavating the former UST area. Contaminated soils over an area 30 feet long by 25 feet wide by 18 feet deep will be quickly removed using a large excavator. Shoring will be installed along three of the walls of the excavation to prevent collapse. In this fashion, approximately 300 cubic yards of contaminated soil and 200 cubic yards of clean overburden will be removed from the property and replaced with clean-imported fill. Assuming the clean fill is backhauled, this amounts to approximately 30 truckloads of soil entering and leaving the property over a period of two or three days. In addition, approximately 10,000 to 20,000 gallons of contaminated groundwater will be removed from the excavation pit using 5,000-gallon vacuum tank trucks while the work is in progress. After the remedial excavation is complete, two replacement groundwater monitoring wells will be installed to allow for follow-up groundwater monitoring. Five soil gas samples and excavation bottom and sidewall samples will also be collected to document remedial effectiveness. The work area will be fully secured at all times. The work will require lane closure and associated traffic control for two or three days, but is not expected to result in the need for closing the street or diverting traffic. There will be periods of localized gasoline odors and noise during normal working hours. The final step will be to restore the lawn and replace the sidewalk and catch basin.

The work will be conducted as quickly and as safely as possible. All due efforts will be made to minimize the brief period of adverse impacts on the local community and respond to any and all concerns that are raised before, during or after the work.

Subject to obtaining all the necessary permits and approvals, RRM plans to conduct the remedial excavation work in July 2010, as the work is required to be conducted during dry weather.

More Information – The revised draft CAP dated September 16, 2009 and a recent amendment dated March 8, 2010 prepared by RRM on behalf of multiple potentially responsible parties are currently available for review along with other case files. The public is invited to review this report and entire case file, which 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.swrcb.ca.gov).

General comments or inquiries:
Mr. Steven Plunkett, Case worker, Alameda County Department of Environmental Health, 1131 Harbor Bay Parkway, Alameda, CA 94502
510-383-1767 or by email at steve.plunkett@acgov.org

Questions regarding plans for future work:
Mr. Matt Paulus, RRM.
831-475-8141 or by email at mpaulus@rrmsc.com

300-Foot Radius Address List
900 Central Avenue
Alameda, CA

Address	City, State, Zip	Assessor Parcel #
818 Taylor Avenue	Alameda, CA 94501	73-404-27
820 Taylor Avenue	Alameda, CA 94501	73-404-28-1
822 Taylor Avenue	Alameda, CA 94501	73-404-28-2
824 Taylor Avenue	Alameda, CA 94501	73-404-29
828 Taylor Avenue	Alameda, CA 94501	73-404-30
830 Taylor Avenue	Alameda, CA 94501	73-404-31
832 Taylor Avenue	Alameda, CA 94501	73-404-32
834 Taylor Avenue	Alameda, CA 94501	73-404-33
836 Taylor Avenue	Alameda, CA 94501	73-404-34
842 Taylor Avenue	Alameda, CA 94501	73-404-1
910 Taylor Avenue	Alameda, CA 94501	73-392-62
914 Taylor Avenue	Alameda, CA 94501	73-392-63
916 Taylor Avenue	Alameda, CA 94501	73-392-64-2
920 Taylor Avenue	Alameda, CA 94501	73-392-64-3
924 Taylor Avenue	Alameda, CA 94501	73-392-66
926 Taylor Avenue	Alameda, CA 94501	73-392-67
928A Taylor Avenue	Alameda, CA 94501	73-392-68
934 Taylor Avenue	Alameda, CA 94501	73-392-69
936 Taylor Avenue	Alameda, CA 94501	73-392-70
938 Taylor Avenue	Alameda, CA 94501	73-392-71
1428 9th Street	Alameda, CA 94501	73-392-61
1422 9th Street	Alameda, CA 94501	73-392-60
1420 9th Street	Alameda, CA 94501	73-392-59
1418 9th Street	Alameda, CA 94501	73-392-58-2
1417 9th Street	Alameda, CA 94501	73-404-2-1
1416 9th Street	Alameda, CA 94501	73-392-58-1
1413 9th Street	Alameda, CA 94501	73-404-4
1411 9th Street	Alameda, CA 94501	73-404-5
1410 9th Street	Alameda, CA 94501	73-392-57-1
1409 9th Street	Alameda, CA 94501	73-404-6
1407 9th Street	Alameda, CA 94501	73-404-7
1406 9th Street	Alameda, CA 94501	73-392-54
1320 9th Street	Alameda, CA 94501	73-398-48
1317 9th Street	Alameda, CA 94501	73-402-7
1316 9th Street	Alameda, CA 94501	73-398-47
1315 9th Street	Alameda, CA 94501	73-402-8
1313 9th Street	Alameda, CA 94501	73-402-9
1312 9th Street	Alameda, CA 94501	73-398-46
1308 9th Street	Alameda, CA 94501	73-398-45
1306 9th Street	Alameda, CA 94501	73-398-44
1305 9th Street	Alameda, CA 94501	73-402-10
1304 9th Street	Alameda, CA 94501	73-398-43
1303 9th Street	Alameda, CA 94501	73-402-11
1301 9th Street	Alameda, CA 94501	73-402-12
819 Central Avenue	Alameda, CA 94501	73-404-13
823 Central Avenue	Alameda, CA 94501	73-404-12
831 Central Avenue	Alameda, CA 94501	73-404-11
833 Central Avenue	Alameda, CA 94501	73-404-10
834 Central Avenue	Alameda, CA 94501	73-402-2
835 Central Avenue	Alameda, CA 94501	73-404-9
836 Central Avenue	Alameda, CA 94501	73-402-3

300-Foot Radius Address List
900 Central Avenue
Alameda, CA

Address	City, State, Zip	Assessor Parcel #
838 Central Avenue	Alameda, CA 94501	73-402-4
842 Central Avenue	Alameda, CA 94501	73-402-5-1
845 Central Avenue	Alameda, CA 94501	73-404-8
900 Central Avenue	Alameda, CA 94501	73-398-49/50/51
901 Central Avenue	Alameda, CA 94501	73-392-53
906 Central Avenue	Alameda, CA 94501	73-398-2
910 Central Avenue	Alameda, CA 94501	73-398-3
913 Central Avenue	Alameda, CA 94501	73-392-51
914 Central Avenue	Alameda, CA 94501	73-398-4
915 Central Avenue	Alameda, CA 94501	73-392-50
917 Central Avenue	Alameda, CA 94501	73-392-49
918 Central Avenue	Alameda, CA 94501	73-398-5
919 Central Avenue	Alameda, CA 94501	73-392-48
921A/B Central Avenue	Alameda, CA 94501	73-392-47
922 Central Avenue	Alameda, CA 94501	73-398-7
923 Central Avenue	Alameda, CA 94501	73-392-46
925 Central Avenue	Alameda, CA 94501	73-392-45
929 Central Avenue	Alameda, CA 94501	73-392-44
931& 931 1/2 Central Avenue	Alameda, CA 94501	73-392-43
935 Central Avenue	Alameda, CA 94501	73-392-42
939 Central Avenue	Alameda, CA 94501	73-392-41
827 Centennial Avenue	Alameda, CA 94501	73-402-14-2
830 Centennial Avenue	Alameda, CA 94501	73-401-2
832 Centennial Avenue	Alameda, CA 94501	73-401-3
835 Centennial Avenue	Alameda, CA 94501	73-402-14-3
905 Centennial Avenue	Alameda, CA 94501	73-398-42
909 Centennial Avenue	Alameda, CA 94501	73-398-41
915 Centennial Avenue	Alameda, CA 94501	73-398-40
917 Centennial Avenue	Alameda, CA 94501	73-398-39
921 Centennial Avenue	Alameda, CA 94501	73-398-39
1355 Weber Street	Alameda, CA 94501	73-398-8
1351 Weber Street	Alameda, CA 94501	73-398-9
1349 Weber Street	Alameda, CA 94501	73-398-10
1345 Weber Street	Alameda, CA 94501	73-398-12
1341 Weber Street	Alameda, CA 94501	73-398-13
1333 Weber Street	Alameda, CA 94501	73-398-14
1331 Weber Street	Alameda, CA 94501	73-398-15
1321 Weber Street	Alameda, CA 94501	73-398-18
1378 Burbank Street	Alameda, CA 94501	73-402-1
1374 Burbank Street	Alameda, CA 94501	73-402-21
1372 Burbank Street	Alameda, CA 94501	73-402-20
1368 Burbank Street	Alameda, CA 94501	73-402-19
1364 Burbank Street	Alameda, CA 94501	73-402-18
1360 Burbank Street	Alameda, CA 94501	73-402-17
1356 Burbank Street	Alameda, CA 94501	73-402-16
1352 Burbank Street	Alameda, CA 94501	73-402-15
1348 Burbank Street	Alameda, CA 94501	73-401-1
1344 Burbank Street	Alameda, CA 94501	73-401-18