**Jillian Holloway**
Project Manager
Marketing Business Unit

**Chevron Environmental Management Company**
6101 Bollinger Canyon Road
San Ramon, CA 94583
Tel (925) 790-3513
JillianHolloway@chevron.com

December 9, 2014

**RECEIVED**
*By Alameda County Environmental Health at 11:07 am, Dec 12, 2014*

Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

**Re:** **Unocal No. 5484 (351812)**
**18950 Lake Chabot Road, Castro Valley, California**
**ACEH Fuel Leak Case No. RO0000352**
**GeoTracker Global ID T0600101453**

I have reviewed the attached report dated December 9, 2014.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by AECOM, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13257(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

Jillian Holloway

Jillian Holloway
Project Manager

Attachment: Chabot Creek Findings Report by AECOM

AECOM
2020 L Street, Suite 400
Sacramento, CA 95811
www.aecom.com

916 414 5800 tel
916 414 5850 fax

December 9, 2014

Keith Nowell
Alameda County Health Care Services Agency
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577
*(via internet upload)*

**Subject:** **Chabot Creek Findings Report**
**Unocal No. 5484 (351812)**
**18950 Lake Chabot Road, Castro Valley, California**
**Fuel Leak Case No. RO0000352**
**Geotracker Global ID # T0600101453**

Dear Mr. Nowell,

On behalf of Chevron Environmental Management Company's (EMC's) affiliate, Union Oil Company of California ("Union Oil"), AECOM has prepared this Chabot Creek Findings Report for Unocal No. 5484 located at 18950 Lake Chabot Road in Castro Valley, California .

This report is in response to the November 5, 2014 directive letter (**Attachment A**) for the site from Alameda County Environmental Health (ACEH) requesting clarification and additional information regarding Chabot Creek in the area of the site.

## Technical Comments

The following summarizes the technical comments presented in the November 5, 2014 directive letter.

*The 1997 Creek and Watershed Map of Hayward and San Leandro (watershed map) depicts an open channel segment of Chabot creek that approaches within 200 feet of the site with a similar shape to that presented in Figure 1 of the SCM. The site conceptual model (SCM) depicts "creeks, buried or drained" to the east and west of the site within 1,000 feet.*

**Response**: AECOM contacted the San Francisco Estuary Institute (SFEI) and Fugro (map producer); see **Attachment B**, about the data presented on the 1997 watershed map vs. the 2011 watershed map. SFEI and Fugro were unable to speak to the accuracy of the data presented on the 1997 map however they explained that the creek was replaced by the storm drain system in the site area. The old open channel or drained sections of Chabot creek would have to be verified by a field inspection but were likely filled during development in the area. On November 24, 2014, AECOM conducted an inspection of Chabot Creek. The only evidence of potential historic stream features is a shallow swale which extends approximately 100 feet into Castro Valley Park which is located 700 feet upgradient from the site south of the intersection of Quail Avenue and Seven Hills Road.

*Shallow groundwater observed at the site would likely intercept the unlined creek if it was within 200 feet of the site.*

**Response**: There is no unlined creek section within 200 feet, the only remaining feature related to Chabot Creek is the lined culvert that was installed in 1961 which is 580 feet downgradient of the site, see **Attachment C**, **Figure 1** and **Figure 2**.

*Contradictory statements between drained or buried sections of Chabot Creek vs. closest sections of Chabot Creek.*

**Response:** The current status of Chabot Creek is clarified in **Attachment C**.

*Alameda County Flood Control and Water Conservation District (ACFC&WD) may have future plans to naturalize Chabot Creek downgradient of the site.*

**Response:** On November 18, 2014 AECOM contacted ACFC&WD regarding potential future plans to naturalize Chabot Creek. The ACFC&WD noted that there are no current or future plans to naturalize the downgradient sections of Chabot Creek currently within a lined culvert. The culvert has been lined since 1961, the culvert as-builts are included as **Attachment D**. Additionally the downgradient culvert goes through numerous residential properties with no easement which makes the naturalization of the creek unlikely.

## Conclusion

The nearest surface water body to the site is Almond Reservoir located 3,080 feet west of the site. The entire length of Chabot Creek that is downgradient of the site is within a lined culvert with no future plans to naturalize the creek. Therefore there are no surface water bodies downgradient of the site that are likely to be impacted by site groundwater.

## Remarks/Signatures

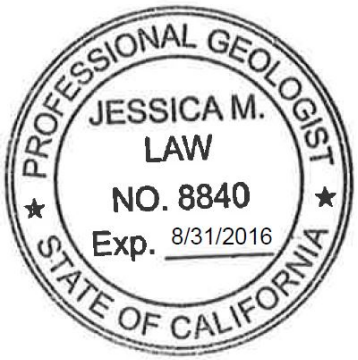
The interpretations in the attached documents represent AECOM's professional opinions which are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

If you have any questions regarding this project, please contact James Harms at (916) 414-5800.

Sincerely,

James Harms
Project Manager

Jessica Law, PG No. 8840
Project Geologist
Stamped:12/9/2014




cc: Jillian Holloway EMC (via electronic copy)
Abdi Fugfugosh and Shukri Noor, property owners (via paper copy)

**Attachments**

| | |
|---|---|
| Attachment A | ACEH Directive Letter |
| Attachment B | Agency Correspondence |
| Attachment C | Focused SCM Update |
| Attachment D | 1961 Culvert As-Builts |

# Attachment A

# ACEH Directive Letter

ALAMEDA COUNTY
**HEALTH CARE SERVICES**
AGENCY
Alex Briscoe, Agency Director

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

November 5, 2014

Jillian Holloway
Chevron Environmental Management Company
6101 Bollinger Canyon Road
San Ramon, CA 94583
(Sent via email to: JillianHolloway@chevron.com)

Abdi Fugfugosh and Shukri Noor
5171 Stone Canyon Drive
Castro Valley, CA 94552-5525

Ed Ralston
ConocoPhillips
76 Broadway
Sacramento, CA 95818
(Sent via email to: Ed.C.Ralston@p66.com)

Subject: Fuel Leak Case No. RO0000352 and Geotracker Global ID T0600101453, UNOCAL #5484, 18950 Lake Chabot Rd., Castro Valley, CA 94546

Dear Ms. Holloway and Ms. Noor and Messrs. Fugfugosh and Ralston:

Thank you for the recently submitted documents entitled *Focused Site Conceptual Model* (SCM), dated September 12, 2014, and *Case Closure Summary* (CCS), dated October 10, 2014, both documents having been prepared by AECOM for the subject site (Site). Alameda County Environmental Health (ACEH) has reviewed the case file, including the recently submitted documents, and is of the opinion that this case may be closable; however, it is the opinion of ACEH that one data gap remains. The CCS indicates that the nearest surface water body is the Almond Reservoir located 3,080 feet west of the Site. However, the SCM depicts what is described as "Creeks, Buried or Drained" and notes that drained or buried sections of Chabot Creek are to the east and west of the site within 1,000 feet. Drained or buried sections of Chabot Creek are not further defined in the SCM. ACEH notes that data presented in the *Creek and Watershed Map of Hayward and San Leandro* (Watershed map), dated 1997 and prepared by the San Francisco Estuary Institute, depicts an open channel segment of Chabot Creek, or an un-named tributary (Chabot Creek), west of the Site, having a similar shape south of that portrayed in Figure 1 of the SCM. The Watershed map shows the creek trending south-southeasterly and appears to enter a culvert to the southwest of the Site. Based on the map, the open channel is down gradient of and approaches to within 200 feet of the Site. It is unclear to ACEH if the Chabot Creek depicted on Figure 1 of the SCM and that on the Watershed map are the same creek, and if so, if the creek occupies an open channel or is within a culvert.

As groundwater beneath the Site has been reported as shallow as 2.99 feet below the ground surface (bgs), ACEH is of the opinion that it is likely groundwater would intercept an unlined Chabot Creek channel if the creek is determined to be within 200 feet. It remains unanswered that if the creek channel is "drained", where the drained water goes, and what happens to the groundwater infiltrating the drained channel.

The most recent groundwater monitoring event, conducted on March 8, 2013, reported concentrations of total petroleum hydrocarbons as gasoline (TPHg), tertiary butyl alcohol (TBA) and 2-methylnaphthalene at 1,900

micrograms per liter (mg/L), 480 mg/L, and 25 mg/L, respectively, in the down gradient monitoring well MW-7. These concentrations are at least an order of magnitude above the Environmental Screening Levels (ESLs) protective of surface water-fresh water aquatic habitats (ESL Table F-2a) of 100 mg/L TPHg, 12 mg/L TBA, and 2.1 mg/L 2-methylnaphthalene. Additionally, concentrations of benzene, naphthalene, and methyl tertiary butyl ether (MTBE) were also reported to exceed ESLs protective of surface water-fresh water aquatic habitats.

The third paragraph of the Sensitive Receptors section of the SCM states the closest section of Chabot Creek is over one-mile to the south. The paragraph continues, stating there are drained or buried sections of Chabot Creek to the east and west within 1,000 feet of the Site. The first sentence appears to contradict the second. ACEH is aware that the Alameda County Flood Control and Water Conservation District (ACFC&WD) has restored sections of Chabot Creek down gradient of the Site to provide natural habitat. To date, the creek restoration project for the bioengineered naturalized stream channel has included removal of concrete channel and underground culvert sections. It is the opinion of ACEH that the one remaining data gap for the subject fuel leak case is the location and status of the creek, including determining if there has been, or if there are plans for, stream-naturalization projects along the portion of the creek in the vicinity of the Site.

Therefore, at this junction, please evaluate the existence of an open channel for Chabot Creek, or an unnamed tributary, west of the Site. If it is found to exist, determine whether or not it occupies a concrete lined trench. If the creek has been diverted, explain the state of the remnant channel, and whether the former channel is a wetland created by intercepting groundwater. Please evaluate or investigate the potential for residual contamination down gradient of MW-7 to impact an open body of water, should the creek be unlined. Additionally, ACFC&WD should be contacted regarding the Chabot Creek restoration project to determine if there has been, or if there are plans for, stream-naturalization projects along the portion of the creek in the vicinity of the Site and present your findings in the report requested below.

**Technical Report Request**

Please upload technical reports to the ACEH ftp site (Attention: Keith Nowell), and to the State Water Resources Control Board's Geotracker website, in accordance with the following specified file naming convention and schedule:

- **January 6, 2015 – Chabot Creek Findings Report** (file name: RO0000352_CORRES_R_yyyy-mm-dd)

If your email address does not appear on the cover page of this notification ACEH is requesting you provide your email address so that we can correspond with you quickly and efficiently regarding your case.

Thank you for your cooperation. ACEH looks forward to working with you and your consultants to advance the case toward closure. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at keith.nowell@acgov.org.

Sincerely,

Keith Nowell, P.G., Ch.G.
Hazardous Materials Specialist

Attachment 1: Responsible Party(ies) Legal Requirements / Obligations and ACEH Electronic Report Upload (ftp) Instructions

cc: Alexis Fischer, Chevron Environmental Management Company, 6101 Bollinger Canyon Road, San Ramon, CA 94583 (Sent via email to: JillianHolloway@chevron.com)

Jim Harms, AECOM, 2020 L Street, Suite 400, Sacramento, CA 95811, (Sent via email to: jim.harms@aecom.com)

Dilan Roe, ACEH
Keith Nowell, ACEH
Geotracker, File

**Attachment 1**

**Responsible Party(ies) Legal Requirements / Obligations**

REPORT REQUESTS

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

ELECTRONIC SUBMITTAL OF REPORTS

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) GeoTracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the GeoTracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in GeoTracker (in PDF format). Please visit the SWRCB website for more information on these requirements (http://www.waterboards.ca.gov/water_issues/programs/ust/electronic_submittal/).

PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "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." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

UNDERGROUND STORAGE TANK CLEANUP FUND

Please note that delays in investigation, later reports, or enforcement actions may result in your becoming ineligible to receive grant money from the state's Underground Storage Tank Cleanup Fund (Senate Bill 2004) to reimburse you for the cost of cleanup.

AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to $10,000 per day for each day of violation.

| Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) | **REVISION DATE:** May 15, 2014 |
|---|---|
| | **ISSUE DATE:** July 5, 2005 |
| | **PREVIOUS REVISIONS:** October 31, 2005; December 16, 2005; March 27, 2009; July 8, 2010, July 25, 2010 |
| **SECTION:** Miscellaneous Administrative Topics & Procedures | **SUBJECT:** Electronic Report Upload (ftp) Instructions |

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

**REQUIREMENTS**

- **Please do not submit reports as attachments to electronic mail.**
- Entire report including cover letter must be submitted to the ftp site as **a single portable document format (PDF) with no password protection**.
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- **Signature pages and perjury statements must be included and have either original or electronic signature.**
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted**.
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:

  RO#_Report Name_Year-Month-Date (e.g., RO#5555_WorkPlan_2005-06-14)

**Submission Instructions**

1) Obtain User Name and Password
   a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
      i) Send an e-mail to deh.loptoxic@acgov.org
   b) In the subject line of your request, be sure to include **"ftp PASSWORD REQUEST"** and in the body of your request, include the **Contact Information, Site Addresses**, and the **Case Numbers (RO# available in Geotracker) you will be posting for**.

2) Upload Files to the ftp Site
   a) Using Internet Explorer (IE4+), go to ftp://alcoftp1.acgov.org
      (i) Note: Netscape, Safari, and Firefox browsers will not open the FTP site as they are NOT being supported at this time.
   b) Click on Page located on the Command bar on upper right side of window, and then scroll down to Open FTP Site in Windows Explorer.
   c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
   d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
   e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.

3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
   a) Send email to deh.loptoxic@acgov.org notify us that you have placed a report on our ftp site.
   b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
   c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO#, use the street address instead.
   d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.

# Attachment B

# Agency Correspondence

**From:** DeLeon, Rosemarie L.
**To:** Harms, James
**Cc:** Valderrama, Arthur
**Subject:** RE: 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions
**Date:** Friday, November 21, 2014 9:13:32 AM
**Attachments:** image001.png

---

James,

We don't have any information regarding the condition of tat channel prior to the 1961 culvert installation. I agree that as of 1997 the map should no longer shown an open channel that no longer exist.

Sincerely,

Rosemarie L. De Leon
Assistant Engineer
Construction & Development Services Department | Alameda County Public Works Agency
951 Turner Court, Room 100 | Hayward, CA 94545
e-mail: roseld@acpwa.org | (510) 670-5209 | (510) 670-5269 Fax



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**From:** Harms, James [mailto:James.Harms@aecom.com]
**Sent:** Wednesday, November 19, 2014 4:22 PM
**To:** DeLeon, Rosemarie L.
**Cc:** Valderrama, Arthur
**Subject:** RE: 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions

Thank you both for your help. Is there any record of what the condition of the creek/channel was prior to the 1961 culvert installation? I am thinking that the 1997 watershed map which depicts an open channel in the area was simply an error.

Thank you

**Jim Harms**
Environmental Scientist
Environment
D +1 916.414.5863 M +1 916.919.9210
James.Harms@aecom.com

**AECOM**
2020 L Street, Suite 400, Sacramento, CA 95811 USA

**From:** Marshall Kunze
**To:** Harms, James
**Subject:** Re: Watershed map questions for 351812 Castro Valley site
**Date:** Wednesday, November 19, 2014 2:44:55 PM

---

Jim--

After some investigation, I don't think we have map data for that area for the timeframe you're interested in. Micha Salomon, one of our senior historical ecology specialists, has suggested it's possible the previous classification was an error on an earlier map, but he also recommends that you contact Janet Sowers at Fugro (j.sowers@fugro.com) for more current data from that area. If you haven't already, you might also try looking at pre-1998 DOQQs to see if the channel is visible in earlier imagery.

Good luck--I'm sorry we couldn't provide an answer.

Best,
Marshall

On Wed, Nov 19, 2014 at 10:59 AM, Marshall Kunze <marshallk@sfei.org> wrote:

> Hi Jim--
>
> I am looking into this and will get back to you on whether we have historical data on the stream channel you're querying.
>
> Best,
> Marshall
>
> On Tue, Nov 18, 2014 at 3:17 PM, Harms, James <James.Harms@aecom.com> wrote:
>
> > Marshall,
> >
> > Thanks for talking to me on the phone. I've attached the watershed map and the letter from Alameda County Environmental Health(ACEH) asking us to gather more information. Basically the final part of site closure is investigating the nature of the storm drain/former Chabot Creek southwest of the site. We used the 2011 map attached that shows the creek being in an engineered culvert, the 1997 map (which I haven't seen) referenced by ACEH shows the same Creek being an open channel. My guess is that between 1997 and 2011 the culvert was installed I was curious if there is anything from the way the maps are produced that would support that assumption. I would assume that if there was currently an open channel the 2011 map would show that.
> >
> > Thanks for your time,

**Jim Harms**
Environmental Scientist
Environment
D +1 916.414.5863  M +1 916.919.9210
James.Harms@aecom.com

**AECOM**
2020 L Street, Suite 400, Sacramento, CA 95811 USA
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www.aecom.com

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Marshall Kunze
Senior Technology Specialist
San Francisco Estuary Institute
510-746-7333
marshallk@sfei.org

--
Marshall Kunze
Senior Technology Specialist
San Francisco Estuary Institute
510-746-7333
marshallk@sfei.org

**From:** Sowers, Janet [FWLA]
**To:** Harms, James
**Cc:** marshallk@sfei.org; Micha Salomon
**Subject:** RE: Watershed map questions for 351812 Castro Valley site
**Date:** Thursday, November 20, 2014 10:09:28 AM

---

Jim,
I think the answer lies in the Explanation on the map. The entry "Creeks, buried or drained" is listed under "Historical features", along with other features such as lakes, tidal marshes, and willow groves, which were part of the historical landscape but no longer exist. In the case of Chabot Creek near your site, the creek was replaced by the current storm drain system. Such replacement may involve laying pipe in the channel and backfilling with earth ("buried" ), or laying the pipe in a different location, diverting the flow from the creek into the pipe, and leaving the old channel as is ("drained" but still present as a dry swale). These usually get filled in during urban development. A field inspection would be required determine if any dry swales remain. Regardless, a dry swale would not likely qualify as a creek as it would not carry significant water flow.

The closest open channel creek is represented by the thick red line (engineered channel) near Castro Valley Boulevard. The storm drains that replaced Chabot Creek near your site empty into this channel, and further downstream into a natural reach of creek represented by the blue line (creek).

Hope this helps.
-Janet

---

**From:** Harms, James [mailto:James.Harms@aecom.com]
**Sent:** Wednesday, November 19, 2014 4:28 PM
**To:** Sowers, Janet [FWLA]
**Subject:** FW: Watershed map questions for 351812 Castro Valley site

Janet,
I was giving your name by Marshall at SFEI, see below. We are trying to find out if any of the sections of Chabot Creek noted near the our site are in anything besides a culvert. As you can see in the chain below Alameda County Environmental Health noted that on the 1997 version of the attached watershed map it was noted that open channel portions of Chabot Creek were present downhill from our site. If you have any information about the Creek in the area we are interested in that would be great.

Thank you

**Jim Harms**
Environmental Scientist
Environment
D +1 916.414.5863  M +1 916.919.9210
James.Harms@aecom.com

**AECOM**
2020 L Street, Suite 400, Sacramento, CA 95811 USA
T +1 916.414.5800  F +1 916.414.5850
www.aecom.com

**From:** Marshall Kunze [mailto:marshallk@sfei.org]
**Sent:** Wednesday, November 19, 2014 2:44 PM
**To:** Harms, James
**Subject:** Re: Watershed map questions for 351812 Castro Valley site

Jim--

After some investigation, I don't think we have map data for that area for the timeframe you're interested in. Micha Salomon, one of our senior historical ecology specialists, has suggested it's possible the previous classification was an error on an earlier map, but he also recommends that you contact Janet Sowers at Fugro (j.sowers@fugro.com) for more current data from that area. If you haven't already, you might also try looking at pre-1998 DOQQs to see if the channel is visible in earlier imagery.

Good luck--I'm sorry we couldn't provide an answer.

Best,
Marshall

On Wed, Nov 19, 2014 at 10:59 AM, Marshall Kunze <marshallk@sfei.org> wrote:
Hi Jim--

I am looking into this and will get back to you on whether we have historical data on the stream channel you're querying.

Best,
Marshall

On Tue, Nov 18, 2014 at 3:17 PM, Harms, James <James.Harms@aecom.com> wrote:
Marshall,
Thanks for talking to me on the phone. I've attached the watershed map and the letter from Alameda County Environmental Health(ACEH) asking us to gather more information. Basically the final part of site closure is investigating the nature of the storm drain/former Chabot Creek southwest of the site. We used the 2011 map attached that shows the creek being in an engineered culvert, the 1997 map (which I haven't seen) referenced by ACEH shows the same Creek being an open channel. My guess is that between 1997 and 2011 the culvert was installed I was curious if there is anything from the way the maps are produced that would support that assumption. I would assume that if there was currently an open channel the 2011 map would show that.

Thanks for your time,

**Jim Harms**
Environmental Scientist
Environment
D +1 916.414.5863 M +1 916.919.9210
James.Harms@aecom.com

**AECOM**
2020 L Street, Suite 400, Sacramento, CA 95811 USA
T +1 916.414.5800  F +1 916.414.5850
www.aecom.com

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Marshall Kunze
Senior Technology Specialist
San Francisco Estuary Institute
510-746-7333
marshallk@sfei.org

--

Marshall Kunze
Senior Technology Specialist
San Francisco Estuary Institute
510-746-7333
marshallk@sfei.org

**From:** DeLeon, Rosemarie L.
**To:** Harms, James
**Cc:** Valderrama, Arthur
**Subject:** FW: 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions
**Date:** Wednesday, November 19, 2014 12:47:53 PM
**Attachments:** image001.png
CB-104 Sht.6- Zone 2 Line F.pdf

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James,

Per your below request, attached is the record drawing of the culvert improvement in the vicinity of Keith Avenue and Lake Chabot Road. The culvert was constructed in 1961. Regarding your question of the subject line to be naturalize, the Flood Control District has no such plan at this time or in the immediate future.

We hope the information provided here helps you with the closure process with the Environmental health services.

Sincerely,

Rosemarie L. De Leon
Assistant Engineer
Construction & Development Services Department | Alameda County Public Works Agency
951 Turner Court, Room 100 | Hayward, CA 94545
e-mail: roseld@acpwa.org | (510) 670-5209 | (510) 670-5269 Fax



---

**From:** Harms, James [mailto:James.Harms@aecom.com]
**Sent:** Tuesday, November 18, 2014 4:30 PM
**To:** Valderrama, Arthur
**Subject:** 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions

Arthur,
Thanks for the time on the phone. We are working on the final parts of the site closure for a former underground storage tank site that has been cleaned up. As part of this Alameda County Environmental Health (ACEH) asked for some more information about Chabot Creek near our site.

I've attached the request form ACEH, a figure from our closure request, and the watershed map. Basically between the 1997 and 2011 map sections of Chabot creek went from being depicted as open channel to in a culvert. If there is some information on when that happened, particularly near Keith Avenue off of Lake Chabot Rd, that would be great. If there are any drawings showing the culvert construction that would also be helpful. Additionally ACEH wanted us to find out if there are

any plans to naturalize Chabot Creek in the area shown as the maximum plume extent in the aerial photograph figure, note the current plume is all located on the site we are working on.

Thank you

**Jim Harms**
Environmental Scientist
Environment
D +1 916.414.5863  M +1 916.919.9210
James.Harms@aecom.com

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www.aecom.com

---

**From:** DeLeon, Rosemarie L. [mailto:RoseId@acpwa.org]
**Sent:** Wednesday, November 19, 2014 12:47 PM
**To:** Harms, James
**Cc:** Valderrama, Arthur
**Subject:** FW: 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions

James,

Per your below request, attached is the record drawing of the culvert improvement in the vicinity of Keith Avenue and Lake Chabot Road. The culvert was constructed in 1961. Regarding your question of the subject line to be naturalize, the Flood Control District has no such plan at this time or in the immediate future.

We hope the information provided here helps you with the closure process with the Environmental health services.

Sincerely,

Rosemarie L. De Leon
Assistant Engineer
Construction & Development Services Department | Alameda County Public Works Agency
951 Turner Court, Room 100 | Hayward, CA 94545
e-mail: roseld@acpwa.org | (510) 670-5209 | (510) 670-5269 Fax



---

**From:** Harms, James [mailto:James.Harms@aecom.com]
**Sent:** Tuesday, November 18, 2014 4:30 PM
**To:** Valderrama, Arthur
**Subject:** 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions

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I've attached the request form ACEH, a figure from our closure request, and the watershed map. Basically between the 1997 and 2011 map sections of Chabot creek went from being depicted as open channel to in a culvert. If there is some information on when that happened, particularly near

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# Attachment C

# Focused SCM Update

Site Conceptual Model Update
Unocal No. 5484 (351812), RO352
18950 Lake Chabot Road
Castro Valley, California

| SCM Element | SCM Sub-Element | Description | Reference | Data Tables/Graphics | Data Gaps | Work to Address Data Gap |
|---|---|---|---|---|---|---|
| Sensitive receptors | Surface water and water supply wells | An Alameda County Public Works Agency (ACPW) well search was conducted in July 2014 within a half-mile radius of the site. A Department of Water Resources (DWR) well search was performed in 2006 within a one-mile radius of the site for the sensitive receptor survey (Delta 2006). **Table 1** contains the well search information, the well locations are also shown on **Figure 1.**<br><br>While the MTBE plume has been delineated to below the ESL by the existing monitoring wells, there is the potential for the plume to pass between downgradient well MW-5 and previously abandoned well MW-4. Therefore, this potential scenario has been considered and the potential maximum plume length for MTBE (which is the site contaminant that typically has the greatest plume lengths) is 1,046 feet according to Low Threat Closure Technical Justification Paper for Groundwater (SWRCB 2012). The nearest surface water or water supply well from the 2006 DWR search and 2014 ACPW search is greater than 1,000 feet beyond the maximum plume boundary (**Figure 1 and Figure 2**). Therefore, further delineation of the plume boundary is not necessary. No additional groundwater monitoring is planned as monitoring has been conducted for nearly 20 years and installing an additional well in the narrow downgradient gap between MW-5 and now abandoned MW-4 is not feasible (**Figure 3**).<br><br>The nearest surface water body is Almond Reservoir located 3,080 feet to the northeast. The closest open section of Chabot Creek is over one-mile to the south. The portion of Chabot Creek to the west of the site was directed into a culvert in 1961 (**Attachment A**). The culvert connects to an engineered channel approximately 4,800 feet south of the site and then finally to an open section of Chabot Creek (2011). AECOM contacted the Alameda County Flood Control and Water Conservation District (ACFC&WD) about future plans to naturalize Chabot Creek in the area of the site, there are no current or future plans to do so (**Attachment B**). Additionally the downgradient culvert goes through numerous residential properties which makes the naturalization of the creek unlikely.<br><br>The 2011 Creek and Watershed Map of Hayward and San Leandro noted that there are drained or buried sections of Chabot Creek within 1,000 feet to the east and west of the site. Additionally, ACEH noted on the 1997 Creek and Watershed Map of Hayward and San Leandro an open channel 200 feet to the west of the site. AECOM contacted the San Francisco Estuary Institute (SFEI) and Fugro (map producer) for additional information regarding the drained or buried sections of Chabot Creek. The drained or buried sections of creeks are taken from historical data layers and are not verified (REFERENCE). During a telephone conversation with Fugro, it was confirmed that the current storm drain replaced Chabot Creek downgradient of the site and that the drained or buried creeks are typically filled during development unless they remain as a swale. On November 24, 2014, AECOM conducted a site reconnaissance visit. The only evidence of potential historic stream features is a shallow swale which extends approximately 100 feet into Castro Valley Park which is located approximately 700 feet upgradient near the intersection of Quail Avenue and Seven Hills Road. | Delta, 2006. Sensitive Receptor Survey Report, August 22.<br><br>SWRCB 2012, Technical Justification for Groundwater Media-Specific Criteria, April 24.<br><br>Creek and Watershed Map of Hayward & San Leandro, 2011 | Table 1 - Water Supply Well Search<br><br>Figure 1 - Receptor Map<br><br>Figure 2 - Plume Extents Map<br><br>Figure 3 - Groundwater Elevation Contour Map<br><br>Attachment A - Culvert As-Builts<br><br>Attachment B - ACFC&WD Emails | November 5, 2014 Directive Letter :<br>Evaluate the existance of an open channel or unlined section of Chabot Creek downgradient of site. | Contacted ACFC&WD, SFEI, and Fugro. Conducted site reconnaissance on November 24, 2014. |

# Tables

Table 1
Water Supply Well Search
Unocal No. 5484 (351812), RO352
18950 Lake Chabot Road
Castro Valley, California

| Well Owner | Date Installed | Total Depth (feet) | Use | Distance from Site (ft) | Direction from site | Source | Comment |
|---|---|---|---|---|---|---|---|
| Wilbert Martin | 3/1977 | 50 | Irrigation | 3200 | northeast | 2006 DWR and 2014 ACPW | |
| Lorri Timond | not specified | unknown | not specified | 4000 | southeast | 2006 DWR | |
| Eden Township Hospital | not specified | unknown | not specified | 3900 | south | 2006 DWR | |
| Foothill Baptist Church | not specified | unknown | not specified | 2700 | south-southeast | 2006 DWR | |
| C.H. Gossett | 6/29/1954 | 70 | Domestic | 7,900 | east | 2014 ACPW | |
| Rees | 8/1964 | 76 | Domestic | 6,000 | south-southeast | 2014 ACPW | |
| Bill Jensen | 8/1/1980 | 220 | Domestic | 6,000 | south-southeast | 2014 ACPW | Deepening of well installed in 1964 |

Notes:
Well address not included due to privacy concerns.
DWR - Department of Water Resources
ACPW = Alameda County Public Works Department

# Figures

## Legend

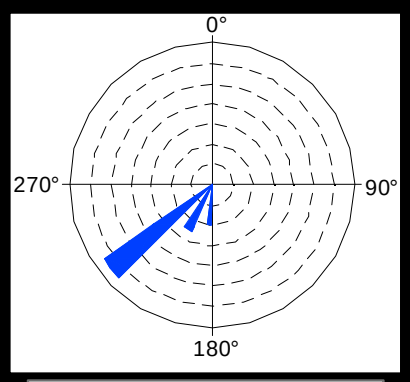
- Abandoned Monitoring Well
- Active Monitoring Well
- Supply Well, 2006 DWR Search
- Supply Well 2014 ACPW Search
- Maximum Plume plus 1,000 foot Buffer
- Estimated MTBE Plume Extent
- Source Area

**Sensitive Receptors**

- Community Center
- Church
- School

**Surface Water**

- Underground Culverts and Storm Drains




**Historical Groundwater Flow Direction 4Q90 to 1Q13**

2,000 Feet

Central Chinese Christian Church

1,000 Feet

The Church of Jesus Christ Latter-Day Saints

Almond Reservoir 3,080 Feet

Site Location

Casto Valley Community Center

Chabot Elementary School

Castro Valley Church of the Nazarene

East Bay Chinese Church

Path: P:\ENV\01231-Chevron\76Products_transfer_sites\351812_5484_Castro Valley\7.0 Deliverables\7.2 CADD\GIS\Projects\Chabot Creek Report\Figure 1_Receptor_Map_351812.mxd

Map Source: ESRI Data Resource Center 2013.

AECOM
2020 L Street, Suite 400
Sacramento, CA 958211
916.414.5800

N

0 0.125 0.25 Miles

**Figure 1:** Receptor Map

**Unocal No. 5484 (351812), RO352**
**18950 Lake Chabot Road**
**Castro Valley, California**

## Legend

- Abandoned Monitoring Well
- Active Monitoring Well
- Low Threat Closure Policy Plume Extents
- Estimated MTBE Plume Extent
- Source Area

**Sensitive Receptors**

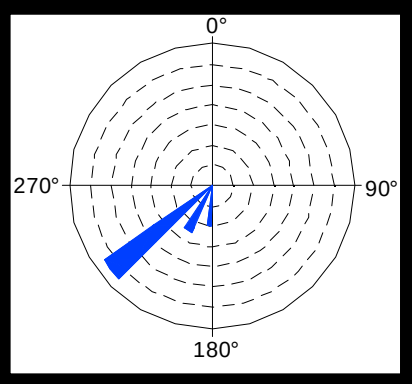
- Community Center
- Church
- School

**Surface Water**

- Creeks, Buried or Drained
- Underground Culverts and Storm Drains

1,000 Feet

Almond Reservoir 3,080 Feet




**Historical Groundwater Flow Direction 4Q90 to 1Q13**

Site Location

MW-3
MW-6
MW-1
MW-2
MW-4B
MW-4A
MW-7
MW-4
MW-5

Average MTBE Plume Length from LTC Justification Paper

90th Percentilel MTBE Plume Length from LTC Justification Paper

Area of Potential MTBE Plume Migration from LTC Justification Paper and Historical Groundwater Flow Direction

Hillside: Elevation Increases to Above the Site Elevation

Maximum MTBE Plume Length from LTC Justification Paper

1,000 Foot Buffer Beyond Maximum MTBE Plume Length

2,000 Feet

Map Source: ESRI Data Resource Center 2013.

AECOM
2020 L Street, Suite 400
Sacramento, CA 958211
916.414.5800

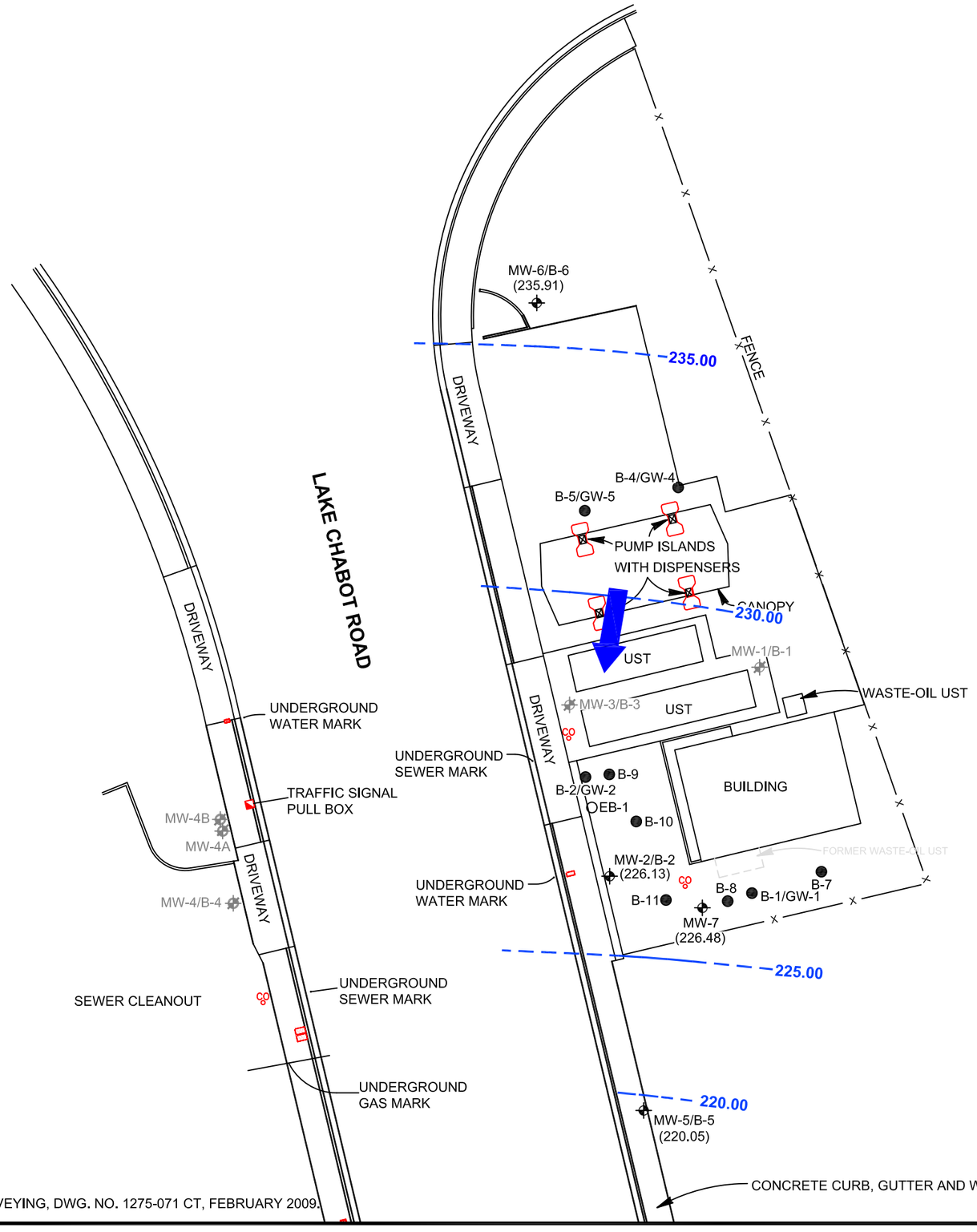
N

0 300 600 Feet

**Figure 2:** Plume Extent Map

**Unocal No. 5484 (351812), RO352**
**18950 Lake Chabot Road**
**Castro Valley, California**

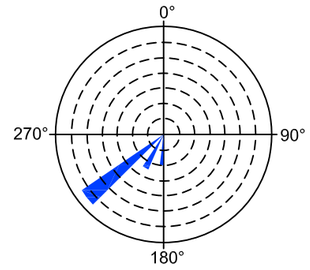
Path: P:\ENV\01231-Chevron\76Products_transfer_sites\351812_5484_Castro Valley\7.0 Deliverables\7.2 CADD\GIS\Projects\Chabot Creek Report\Figure2_Plume_extents_351812_.mxd



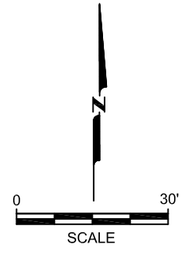

SOURCE: MORROW SURVEYING, DWG. NO. 1275-071 CT, FEBRUARY 2009.

## Legend

- Monitoring Well
- Destroyed Monitoring Well
- Soil Boring
- UST — Underground Storage Tank
- (#) — Groundwater Elevation in Feet Above Mean Sea Level
- 230.00 — Groundwater Contour Line in Feet Above Mean Sea Level (Dashed Where Inferred)
- Groundwater Flow Direction
- Hydraulic Gradient = 0.15 Feet per Foot




HISTORICAL GROUNDWATER
FLOW DIRECTION
4Q90 TO 1Q13




| REVISIONS | | | |
|---|---|---|---|
| NO.: | DESCRIPTION: | DATE: | BY: |

| DESIGNED BY: | DRAWN BY: | CHECKED BY: | APPROVED BY: |
|---|---|---|---|
| TQ | TQ | JH | JH |


AECOM TECHNICAL SERVICES
10461 OLD PLACERVILLE ROAD, SUITE 170
SACRAMENTO, CALIFORNIA 95827
PHONE: (916) 361-6400
FAX: (916) 361-6401
WEB: HTTP://WWW.AECOM.COM


# Groundwater Elevation Contour Map

Unocal Service Station #5484 (351812), RO352
18950 Lake Chabot Road
Castro Valley, California

| PROJECT NUMBER: | DATE: | SCALE: |
|---|---|---|
| 60284081 | 2/12/2013 | 1" = 30' |

FIGURE NUMBER:

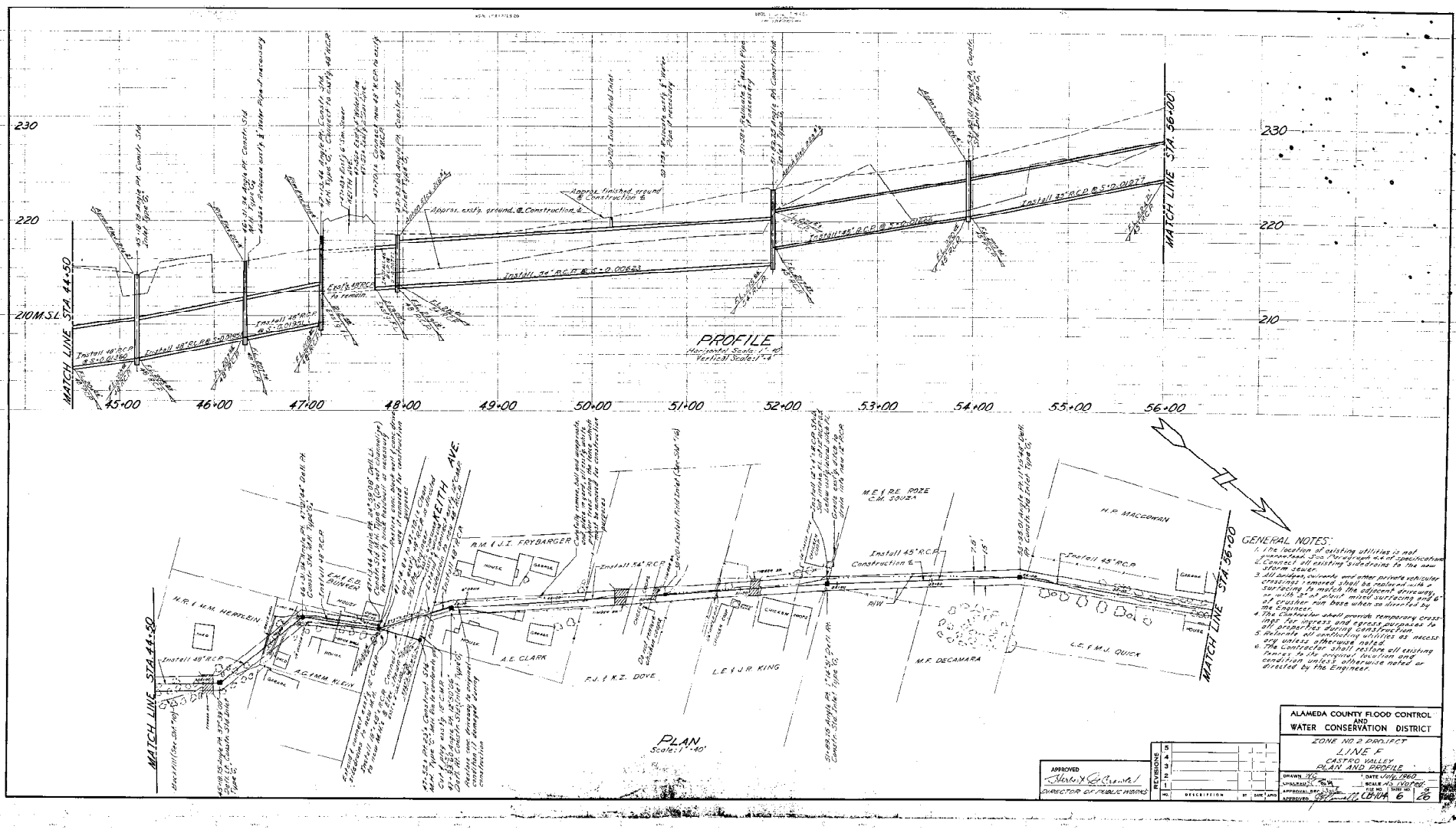
3

SHEET NUMBER:

1 of 1

P:\ENV\01231-Chevron\76Products_transfer_sites\351812_5484_Castro Valley\7.0 Deliverables\7.2_CADD\CSM\Fig 2 - GW Elevation.dwg Jul 21, 2014 - 4:46pm HarmsJ

# Attachments


PROFILE
Horizontal Scale: 1" = 40'
Vertical Scale: 1" = 4'
MATCH LINE STA. 44+50
MATCH LINE STA. 56+00
45+00
46+00
47+00
48+00
49+00
50+00
51+00
52+00
53+00
54+00
55+00
56+00
230
220
210
Approx. finished ground @ Construction &
Approx. existg. ground @ Construction &
Install 48" R.C.P. @ S=0.00683
Install 45" R.C.P. @ S=0.01077
Install 45" R.C.P. @ S=0.01360
Install 48" R.C.P. @ S=0.01361
Install 48" R.C.P. @ S=0.01361
Existg. MH to remain.
PLAN
Scale: 1" = 40'
M.R. & M.M. HERRLEIN
E.M. & E. DUNCAN
A.G. & M.M. KLEIN
P.M. & J.I. FRYBARGER
A.E. CLARK
F.J. & K.Z. DOVE
L.E. & J.R. KING
M.E. & R.E. ROZE
C.M. SOUZA
M.F. DECAMARA
H.P. MACGOWAN
L.E. & M.J. QUICK
KEITH AVE.
Install 54" R.C.P.
Install 45" R.C.P.
Construction &
R/W
Install 48" R.C.P.
GENERAL NOTES:
1. The location of existing utilities is not guaranteed. See Paragraph 4.4 of Specifications.
2. Connect all existing sidedrains to the new storm sewer.
3. All bridges, culverts and other private vehicular crossings removed shall be replaced with a similar facility to match the adjacent driveway or with 6" of plant mixed surfacing and 6" of crusher run base when so directed by the Engineer.
4. The Contractor shall provide temporary crossings for streets and private purposes to all properties during construction.
5. He shall do all earthwork grading as necessary unless otherwise noted.
6. The Contractor shall restore all existing fences to the original location and condition unless otherwise noted or directed by the Engineer.
ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
ZONE NO 2 PROJECT
LINE F
CASTRO VALLEY
PLAN AND PROFILE
DRAWN JMG
DATE July 1960
CHECKED JM
SCALE AS NOTED
APPROVAL DATE
FILE NO.
SHEET NO. 6
OF 26
APPROVED
DIRECTOR OF PUBLIC WORKS
REVISIONS
DESCRIPTION
BY
DATE
APVD

**From:** DeLeon, Rosemarie L.
**To:** Harms, James
**Cc:** Valderrama, Arthur
**Subject:** RE: 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions
**Date:** Friday, November 21, 2014 9:13:32 AM
**Attachments:** image001.png

---

James,

We don't have any information regarding the condition of tat channel prior to the 1961 culvert installation. I agree that as of 1997 the map should no longer shown an open channel that no longer exist.

Sincerely,

Rosemarie L. De Leon
Assistant Engineer
Construction & Development Services Department | Alameda County Public Works Agency
951 Turner Court, Room 100 | Hayward, CA 94545
e-mail: roseld@acpwa.org | (510) 670-5209 | (510) 670-5269 Fax



---

**From:** Harms, James [mailto:James.Harms@aecom.com]
**Sent:** Wednesday, November 19, 2014 4:22 PM
**To:** DeLeon, Rosemarie L.
**Cc:** Valderrama, Arthur
**Subject:** RE: 18950 Lake Chabot Rd (351812 Site) Chabot Creek questions

Thank you both for your help. Is there any record of what the condition of the creek/channel was prior to the 1961 culvert installation? I am thinking that the 1997 watershed map which depicts an open channel in the area was simply an error.

Thank you

**Jim Harms**
Environmental Scientist
Environment
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James.Harms@aecom.com

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Thank you

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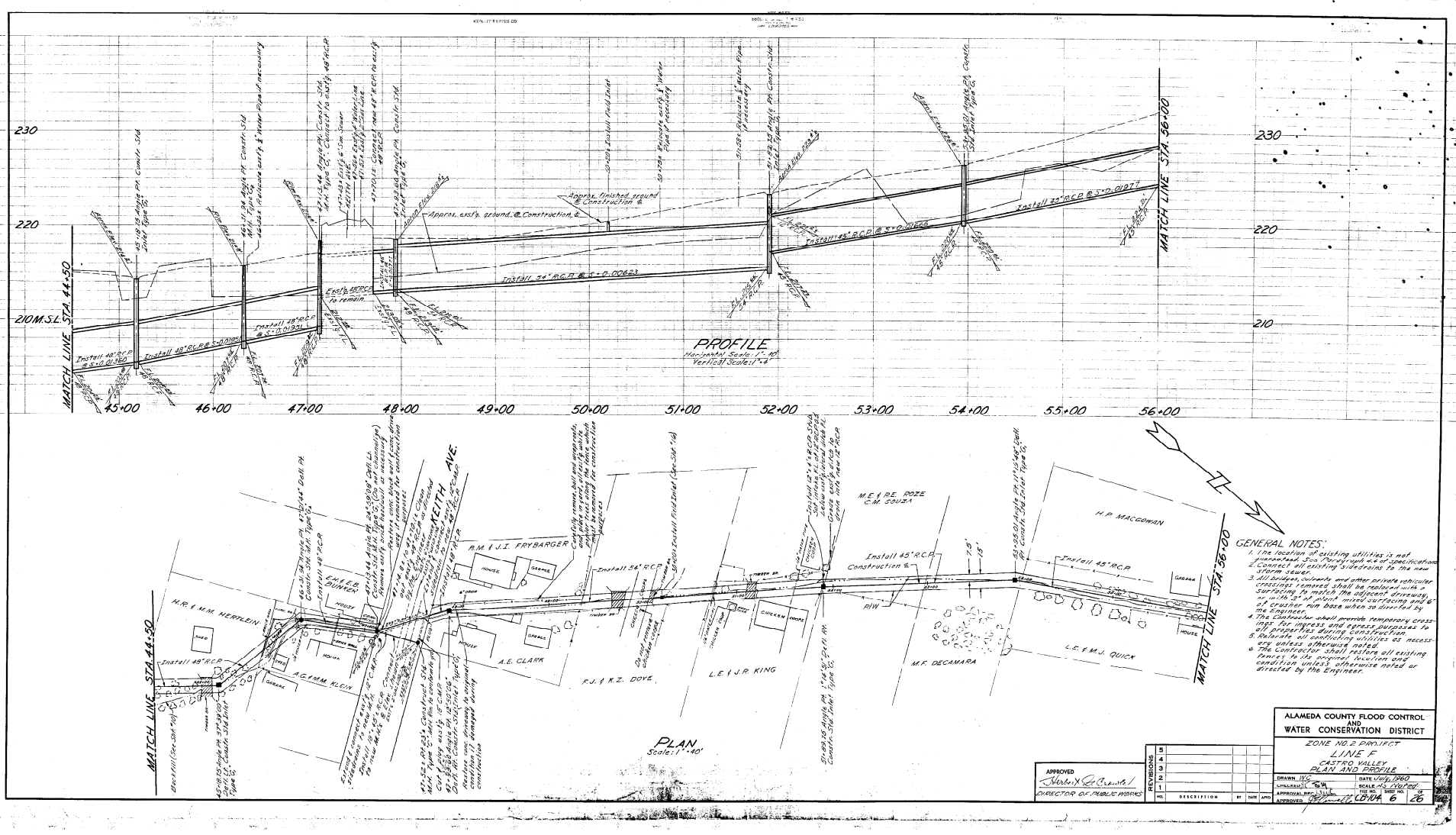
www.aecom.com

# Attachment D

# 1961 Culvert As-builts




APPROVED
Herbert L. Carroll
DIRECTOR OF PUBLIC WORKS

| REVISIONS | | | | |
|---|---|---|---|---|
| NO. | DESCRIPTION | BY | DATE | APPD |
| 1 | | | | |
| 2 | | | | |
| 3 | | | | |
| 4 | | | | |
| 5 | | | | |

ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
ZONE NO. 2 PROJECT
LINE F
CASTRO VALLEY
PLAN AND PROFILE

DRAWN: WG
TRACED: SM
APPROVAL REC'D:
APPROVED:
DATE: July, 1960
SCALE: As Noted
FILE NO. 6.04.04
SHEET NO. 6
OF 26