REVIEW REPORT

Union Pacific Railroad Company

Second Five-Year Review Report

Liquid Gold Site

Richmond, California

September 2005

Environmental Resources Management
1777 Botelho Drive, Suite 260
Walnut Creek, CA 94596

Five-Year Review Report

Second Five-Year Review Report
for
Liquid Gold Site
Richmond, California
September 2005

PREPARED BY:
Environmental Resources Management
1777 Botelho Drive, Suite 260
Walnut Creek, California 94596
T: 925-946-0455
F: 925-946-9968
for
Union Pacific Railroad Company
Project No. 0020568

Approved By:

Elizabeth J. Adams, Chief
Site Cleanup Branch
Superfund Division
U.S. EPA Region IX

Date:

September 28, 2005

TABLE OF CONTENTS

LIST OF FIGURES

(Figures immediately follow the text)

LIST OF TABLES

(Tables immediately follow the figures)

LIST OF ACRONYMS

bgs	Below ground surface
DTSC	California Department of Toxic Substances Control
ERM	Environmental Resources Management
K/J	Kennedy/Jenks Consultants
MCL	Maximum Contaminant Level
NPL	National Priority List
O&M	Operation and Maintenance
PAHs	Polynuclear Aromatic Hydrocarbons
RI/FS	Remedial Investigation/Feasibility Study
ROD	Record of Decision
RWQCB	San Francisco Bay Regional Water Quality Control Board
SPTCo	Southern Pacific Transportation Company
TPH	Total petroleum hydrocarbons
TPH-D	Diesel range total petroleum hydrocabons
TPH-G	Gasoline range total petroleum hydrocarbons
TPH-O/G	Oil and gas range total petroleum hydrocarbons
UPRR	Union Pacific Railroad Company

EXECUTIVE SUMMARY

The remedy for the Liquid Gold Site in Richmond, California included removal of sediments and debris from two drainage channels leading to the adjacent marsh, installation of a vegetated soil cover (cap) to prevent contact with impacted soils and to control runoff patterns, access controls (fencing), institutional controls to prevent residential development, and groundwater monitoring for a minimum of 5 years. The site achieved construction completion with the signing of the Preliminary Close Out Report on September 27,1995, and was deleted from the National Priorities List on September 11/1996. The trigger for this Five-Year Review is the completion date for the first Five-Year Review, September 12,2000.

The technical assessment performed during this Five-Year Review determined that the remedy was constructed in accordance with the requirements of the Record of Decision (ROD), and is functioning as designed, although several issues need to be addressed. This report establishes milestones for addressing the following issues:

- It is not clear whether fencing around the vegetated cap and the deed-restricted areas are the same, and whether these completely enclose the area of contaminated soils. This issue could affect future protectiveness.

- The parcel numbers in the deed restriction are ambiguous. This issue does not affect either current or future protectiveness.

- Future groundwater samples should measure dissolved concentrations of metals, in addition to total metals. This issue does not affect either current or future protectiveness.

The remedy at Liquid Gold Oil Superfund Site currently protects human health and the environment, because all immediate threats at the site have been addressed through the removal of contaminated material, stabilization and capping of on-site contaminated soils, access restrictions (fencing, warning signs), regular maintenance of engineered control structures, and institutional controls (deed restriction) that restrict land uses. However, in order to ensure long-term protection of human health and the environment, the UPRR must investigate whether the boundaries of the vegetative cap, fencing and deed restriction are the same, and resolve any discrepancies that may exist.

Five-Year Review Summary Form

Site name *(from WasteLAN)*: Liquid Gold Oil Corporation		
EPA ID *(from WasteLAN)*: CAT000646208		
Region: 9	**State:** CA	**City/County:** Richmond/Contra Costa
SITE STATUS		
NPL status: G Final Ξ Deleted G Other (specify)		
Remediation status (choose all that apply): G Under Construction G Operating : Complete		
Multiple OUs?* G YES : NO	**Construction completion date:** September 27, 1995	
Has site been put into reuse? G YES : NO		
Lead agency: G EPA : State G Tribe G Other Federal Agency		
Author name: John Cavanaugh, Environmental Resources Management		
Author title: Project Manager, contractor for	**Author affiliation:** Union Pacific Railroad Co.	
Review period:** March 2005 to September 2005		
Date(s) of site inspection: April 13, 2005		
Type of review: : Post-SARA G Pre-SARA G NPL-Removal only G Non-NPL Remedial Action Site G NPL State/Tribe-lead G Regional Discretion)		
Review number: 1 G (first) : 2 (second) G 3 (third) G Other (specify)		
Triggering action: G Actual RA On-site Construction at OU #___ G Actual RA Start at OU# NA G Construction Completion : Previous Five-Year Review Report G Other (specify)		
Triggering action date *(from WasteLAN)*: September 12, 2000		
Due date *(five years after triggering action date)*: September 12, 2005		

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

Issue 1. Fencing around the vegetated cap may not completely enclose the cap area, based on an overlay of maps of the vegetated cap and deed restricted area (see Appendix F).

Issue 2. The parcel number(s) for the deed restricted area is ambiguous. The legal description states that the deed restricted area is a portion of several parcels beginning at the southwesterly terminus of a course in the general southerly line of Parcel 409921-1 (See the "Plat to Accompany Legal Description for Deed Restriction" (Appendix A of the Covenant To Restrict Use of Property). It is not clear how this relates to Parcel No. 42, which is indicated on the County Assessor's Map of Site and Adjacent Property (Figure 8 of Covenant to Restrict Use of Property).

Issue 3. Future groundwater sampling should measure dissolved concentrations of metals, in addition to total concentrations.

Recommendations and Follow-up Actions:

Issue 1: This issue will be investigated by Union Pacific Railroad Company real estate personnel and the results of the investigation reported to the U.S. Environmental Protection Agency Remedial Project Manager (EPA RPM). The EPA RPM and Regional Counsel will decide whether further follow-up is needed. If the fence is not properly aligned with the boundary of the vegetated cap, Union Pacific Railroad Company has agreed to re-align it.

Issue 2: This issue will be resolved by Union Pacific Railroad Company real estate personnel and the results of the investigation reported to the EPA RPM. The EPA RPM and Regional Counsel will decide whether further follow-up is needed. A revision of the deed restriction may be necessary to ensure future protectiveness.

Issue 3: This issue will be addressed during future groundwater sampling by the Union Pacific Railroad Company, and documented in groundwater monitoring reports.

Protectiveness Statement(s):

The remedy at Liquid Gold Oil Superfund Site currently protects human health and the environment, because all immediate threats at the site have been addressed through the removal of contaminated material, stabilization and capping of on-site contaminated soils, access restrictions (fencing, warning signs), regular maintenance of engineered control structures, and institutional controls (deed restriction) that restrict land uses. However, in order for the remedy to be protective in the long-term, the UPRR must investigate whether the boundaries of the vegetative cap, fencing and deed restriction are the same, and resolve any discrepancies that may exist. Further, the parcel numbers in the deed restriction need clarification to ensure future protectiveness if the property is transferred.

Other Comments: No further comments

1.0 INTRODUCTION

On behalf of Union Pacific Railroad Company (UPRR), Environmental Resources Management (ERM) has prepared this Five-Year Review Report for the former Liquid Gold Oil Corporation (Liquid Gold) site in Richmond, California (site).

The purpose of the Five-Year Review is to evaluate whether or not the selected remedial action remains protective of public health and the environment and is functioning as designed. The objective of this report is to present the findings of the 5-Year Review. This report summarizes the effectiveness of the remedial action to date at the site, focusing on the last 5 years since EPA conducted its Five-Year Review in 2000. In addition, Five-Year Review reports identify issues found during the review, if any, and identify recommendations to address them.

This statutory review of remedial action effectiveness was conducted pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Section 121 (c), the National Oil and Hazardous Substances Pollution Contingency Plan Section 300.430(f)(4)(ii), and Office of Solid Waste and Emergency Response directive 9355.7-03B-P. This document, which will become part of the site file, was prepared in general accordance with the *Comprehensive Five-Year Review Guidance* (United States Environmental Protection Agency [USEPA] 2001). A subsequent review will be performed within 5 years of the date of this report.

This is the second Five-Year Review for the Liquid Gold Site. The triggering action for this statutory review is the completion of the first Five-Year Review Report on September 12,2000. The first report was triggered by the initiation of the remedial action on July 5,1994. The Five-Year Review is required because hazardous substances, pollutants, or contaminants remain at the site above levels that allow for unlimited use and unrestricted exposure.

Two other "five-year reviews" (1998, 2003) were submitted to the Department of Toxic Substances Control (DTSC) by John Cavanaugh of Environmental Resources Management, Inc. (ERM), on behalf of the Union Pacific Railroad Company, and were approved by the DTSC. However, although EPA reviewed these reports and concurred with the overall conclusions, the reports were not utilized to satisfy EPA's requirements for a Five-Year Review.

The current EPA Remedial Project Manager has requested DTSC to coordinate with EPA during its next “five year review,” in 2008, to ensure that it is submitted to EPA for review and approval and that the report satisfies EPA, as well as State requirements for five-year reviews. By synchronizing these review efforts, Union Pacific Railroad Company will not have to complete more than one review every five years. Therefore, the next, third EPA Five-Year Review will occur in 2008, rather than five years from the completion date of this Five-Year Review.

2.0 SITE CHRONOLOGY

Table 1 provides a summary of site chronology.

The site was formerly owned by Southern Pacific Transportation Company (SPTCo), who leased the site to an asphalt manufacturing facility from approximately the 1940s to 1965 and to a waste oil storage and transfer facility (Liquid Gold) during the 1970s to early 1980s. During Liquid Gold's operations, waste oils, solvents, and tank bottom sediments were stored in storage tanks on site.

Investigations conducted in the 1970s at the site by the California Department of Health Services (now the State of California Department of Toxic Substances Control ([DTSC]) and the San Francisco Bay Regional Water Quality Control Board (RWQCB) documented releases of hazardous substances onto the ground and into ponds, sumps, and ditches. Consequently, the site was listed on the California State Superfund List in January 1983. The United States Environmental Protection Agency (EPA) also listed the site on the National Priority List (NPL) in September 1983. The DTSC assumed lead responsibility for overseeing environmental investigations and cleanup actions at the site. EPA issued the Record of Decision (ROD) on June 21,1993 and remedial actions were completed at the site during 1994-1995 under DTSC oversight. EPA and DTSC approved the completion of the remedial actions and construction completion was achieved with the signing of EPA's Preliminary Close Out Report on September 27,1995. The site was removed from the NPL in September 1996.

Long-term monitoring and maintenance activities at the site continue to be overseen by DTSC. Because the remedy selected for the site resulted in hazardous materials remaining on-site, site reviews are required every 5 years after the implementation of the remedial action to evaluate the effectiveness of the selected remedy for protecting human health and the environment. "Five-year review reports" have previously been submitted to DTSC in 1998 and 2003 (ERM 1998 and 2003b). Although DTSC is the lead regulatory agency for the site, CERCLA requires that EPA review and concur with State- lead Five-Year Reviews. Since EPA did not review or approve the reports submitted to DTSC, a separate Five-Year Review was prepared by EPA in September 2000 (EPA 2000).

3.0 BACKGROUND

3.1 PHYSICAL CHARACTERISTICS

The site consists of approximately 18 acres of land within an approximately 40-acre parcel that was owned by SPTCo and now owned by UPRR. The site is located in the City of Richmond, Contra Costa County, California (Figure 1) and is adjacent to the San Francisco Bay, west of Interstate 580, and south of the Bay view Avenue highway overpass. The site is bounded by Hoffman Marsh to the east and southeast and by drainage channels connecting to San Francisco Bay on the west and southwest.

3.2 LAND AND RESOURCE USE

The site is currently unoccupied and is surrounded by a fence to restrict access onto the property. A deed restriction was recorded for the site in 1995 that restricts future use of the site to park land, open space, commercial, or industrial use. Residential development of the site is not permitted.

Due to the proximity of the site to the San Francisco Bay, site groundwater is naturally saline and is, therefore, not a current or potential source of drinking water.

3.3 HISTORY OF CONTAMINATION

From the 1940s until approximately 1965, an asphalt manufacturing facility leased the site from SPTCo. From about 1965 to 1982, the site was leased by a waste oil storage and transfer facility known as Liquid Gold. During Liquid Gold's operations, waste oils, solvents, and tank bottom sediments were stored in storage tanks on site. Liquid Gold's facilities consisted primarily of a former asphalt facility, two tank farms, and several small structures. These facilities were generally located in the central portion of the site.

During the 1970s, inspections by the RWQCB and the California Department of Health Services documented the spills of oils and other chemicals from Liquid Gold operations. Liquid Gold cleaned up some of the surface spills after its operations ceased in 1980. SPTCo, the property owner at the time, assumed control of the investigation and cleanup in 1982. UPRR subsequently assumed liability for the site following its merger with SPTCo. A site chronology is provided in Table 1.

3.4 INTERIM REMEDIAL ACTIONS

Prior to 1982, Liquid Gold performed some limited cleanup during its site operations, but these actions are not well documented. Between 1982 and 1989, SPTCo performed the following interim remedial measures:

- Twenty five storage tanks were removed and disposed off-site in 1982 and 1983;
- More than 70 drums of hazardous waste were removed and disposed off-site in 1984;
- Approximately 760 cubic yards of contaminated soil were excavated and disposed off-site in 1985 from the former east tank farm, former asphalt facility, areas near the former asphalt facility, and the former west tank farm;
- A wooden building in the former asphalt facility was removed in 1985, resulting in an additional 65 cubic yards of wood and metal debris that were disposed off-site; and
- Remaining site buildings were demolished and the resulting debris was disposed off-site in 1989.

4.0 REMEDIAL INVESTIGATION ACTIVITIES

4.1 REMEDIAL PROCESS

DTSC issued SPTCo a Consent Order in January 1988 that required the completion of a Remedial Investigation (RI)/Feasibility Study (FS) for the site. On behalf of SPTCo, Kennedy/Jenks Consultants (K/J) prepared a *Remedial Investigation/Feasibility Study Workplan*, (RI/FS Workplan) for the site in 1988 (K/J 1988). RI/FS activities were conducted at the site during 1988-1992. Findings of the RI/FS were summarized in the *Draft Remedial Action Plan* (Remedial Action Plan) (K/J 1993), which was approved by the DTSC on March 15,1993. EPA concurred with the Remedial Action Plan by signing a Record of Decision on June 21,1993. During the RI and previous investigations, surface and subsurface soils, groundwater, surface water, and marsh sediment samples were submitted for chemical analyses. The findings of the RI and previous investigations are summarized in the following sub-sections.

4.2 SITE SOIL AND SEDIMENT

The soil at the site consists of fill material over bay mud. The fill thickness ranges from 5 to 10 feet, and the bay mud thickness ranges from 7 to 19 feet. The bay mud is underlain by sandy alluvium.

Approximately 500 soil samples have been collected from surface and subsurface soils (to depths of 30 feet) and over 60 sediment samples have been collected from the marsh. Samples were analyzed for metals, polynuclear aromatic hydrocarbons (PAHs), and oil and grease. The results of these analyses are summarized below:

- Metals - Elevated concentrations of lead, copper, and mercury were found at the site. Copper and mercury appear randomly distributed and did not appear to have a source area. Elevated concentrations of lead were detected primarily in a 5-acre area in the central portion of the site. The average lead concentration in soil in this area was approximately 1,000 milligrams per kilogram (mg/kg). The highest concentrations of lead were detected within the fill material at depths between 5 to 6.5 feet below ground surface (bgs).

- PAHs - PAHs were detected in five surface samples. PAHs in the subsurface were primarily confined to the same 5-acre area in the central portion of the site. Levels of total PAHs varied from 0.4 to 14mg/kg.

- Oil and Grease - Soil samples were analyzed for total petroleum hydrocarbons (TPH) as oil and grease (TPH-O/G) as an indicator of the amount of petroleum products in the soil. Elevated levels of TPH-O/G appeared to be randomly distributed throughout the site and obvious sources did not appear to exist.

4.3 SITE GROUNDWATER AND SURFACE WATER

Two permeable ground water zones have been investigated at the site:

- The shallow groundwater zone is within the fill material above the bay mud. This fill unit ranges in thickness from ground surface to between approximately 5 to 10 feet bgs.

- The deep groundwater zone, separated from the shallow zone by bay mud which serves as an aquitard, is in a sandy alluvial unit, the upper limit of which is encountered at depths of 17 feet bgs or greater.

Sixteen groundwater monitoring wells were installed during or prior to the RI. The monitoring well network at that time consisted of 7 deep wells (MW-1, MW-2, MW-3, MW-6, MW-9, MW-16, and MW-18) and 9 shallow wells (MW-4, MW-5, MW-7, MW-8, MW-11, MW-12, MW-13, MW-15, and MW-17). Locations of these wells are shown on Figure 2.

The depth to shallow groundwater varies from approximately 2 to 5 feet bgs. Groundwater in the deeper wells rises within the well casings to approximately the same elevation as that of the shallow groundwater zone wells.

Groundwater flow direction in the shallow zone is generally to the south; however, the flow direction is somewhat varied during the dry season. In the deep groundwater zone, the apparent groundwater flow direction is to the southwest and is independent of seasonal water level variations.

Quarterly sampling of the on-site monitoring wells was conducted between October 1988 and October 1989, in accordance with the RI/FS Workplan (K/J1988). Additional interim quarterly groundwater monitoring began in October 1990. The major constituents analyzed in groundwater include metals (specifically, chromium, copper, lead, mercury, nickel, and zinc) and TPH (specifically, as diesel [TPH-D], as gasoline [TPH-G], and TPH-O/G). Historical groundwater analytical data collected from 1988 through 1992 are presented in Appendix A. Groundwater monitoring results are summarized in Section 6.4 (Data Review).

Surface water is present in two tidally influenced channels that receive freshwater runoff from the site. These channels drain to San Francisco Bay. Site contaminants were not present in surface water samples. Soil remedial activities, including grading, removal and capping, eliminated any potential for re-contaminating marsh sediments with surface water runoff.

4.4 RISK ASSESSMENT

Human health risk assessment activities determined that the only significant potential exposure pathway was contact with soil (groundwater is not a potential drinking water source due to its high salinity). The assessment found that the levels of metals, PAHs, and TPH remaining in the site soil after the completion of the interim remedial measures did not pose unacceptable levels of human health risk (carcinogenic and non-carcinogenic) for all uses permitted under the current zoning, including trespassing children and adults. However, a hypothetical residential scenario was also evaluated during the risk assessment; this exposure scenario was considered hypothetical because, at the time of the risk assessment, the site was currently zoned only for commercial or industrial purposes. This hypothetical exposure scenario indicated that site soils with lead concentrations greater than 370 mg/kg posed an unacceptable level of non-carcinogenic risk to a hypothetical child resident.

Ecological risk assessment activities found evidence of possible ecological damage in the drainage channels leading from the site into San Francisco Bay. This was based on the observation that the species composition of sediment-dwelling organisms was typical of a community subject to petroleum contamination. In addition, sediment toxicity to bivalve larvae was observed. However, adverse effects could not be conclusively linked to site chemicals.

4.5 SELECTED REMEDY

The interim remedial measures addressed the principal human health and environment threats at the site. The Remedial Action Plan was prepared to address the relatively low levels of soil and groundwater impacts that were remaining at the site. The objectives of the Remedial Action Plan were:

- Restrict residential development of the site;
- Reduce the potential for disturbance of site soils; and
- Monitor groundwater to detect significant changes in groundwater quality.

The following remedial actions were selected to meet the objectives of the Remedial Action Plan:

- A deed restriction prohibiting residential development at the site;
- Removal of sediments and debris from two drainage channels leading to the adjacent marsh to mitigate possible past adverse impacts from Liquid Gold;
- Installation of a vegetated soil cover (cap) to prevent contact with impacted soils and to control runoff patterns;
- Groundwater monitoring for a minimum of 5 years.

The deed restriction was signed into effect in September 1995. Additional information regarding the drainage channels, cap, and additional post-remediation activities are discussed in the following sub-sections.

4.6 REMEDY IMPLEMENTATION

4.6.1 Drainage Channel Excavations

In 1994, sediments were excavated from two channels in the marsh to a depth of 1 foot at the channel center. In accordance with the Remedial Action Plan, confirmation sampling, which included chemical analysis and bioassay testing, was performed to evaluate the ecological effect of remaining sediment. Sediments from the middle of one of the channels (Transect 6) showed high toxicity to bivalve larvae, prompting additional sampling in February 1995. The February 1995 data confirmed that some sediments were toxic to bivalve larvae, although the data indicated that the toxicity was not due to site contaminants. Naturally occurring ammonia was found to be at least a partial cause of the toxicity. The data also suggested that the toxicity decreased over time.

DTSC requested additional sampling for bivalve toxicity at this location. Additional sampling and analysis were performed in August 1995. The results of the August 1995 sampling and analysis were presented in an October 1995 report (K/J 1995c). The report concluded that the toxicity associated with the sediments in the middle of Transect 6 did not appear to be of concern and that additional marsh sediment sampling was not warranted. In a letter dated November 22,1995, DTSC concurred that additional marsh sediment sampling was not necessary.

4.6.2 Vegetated Soil Cover

The vegetated soil cover was installed in July 1994 and included the placement of 2 feet of clean import fill, graded to maximize site drainage and prevent ponding by altering runoff patterns. Following grading, the area was seeded with natural plants, and a fence was erected to prevent further unauthorized access to the site.

The initial cap installation inspection by regulators in February 1995 resulted in additional sampling and minor cap repairs. The final cap installation inspection occurred in July 1995, and DTSC certified the remedial action as complete in August 1995.

4.6.3 Site Operations and Maintenance

Operations and maintenance (O&M) activities to be conducted at the site after the completion of the remedial activities were outlined in the following documents:

- *Operations and Maintenance Plan, Liquid Gold Site, Richmond, California* (O&M Plan) (K/J 1995b);
- *Draft Remedial Action Plan* (K/J 1993); and
- *Groundwater Monitoring Plan, Liquid Gold Site, Richmond, California* (Monitoring Plan) (K/J, 1995a).

The O&M activities included:

- Marsh sediment deposition monitoring;
- Groundwater monitoring; and
- Site inspections.

Additional information regarding these O&M activities are discussed in the following sub-sections.

4.6.4 Marsh Sediment Deposition Monitoring

After the marsh channel excavations and confirmatory sampling were completed, the channels were allowed to accumulate sediment naturally. The Remedial Action Plan stipulated that the height of the sediments in each channel would be recorded annually until the sediment height returned to pre-excavation levels (July 1994), at which time the monitoring would be discontinued. Measurements made during a December 1997 site inspection revealed that 1 foot of sediment had been redeposited in both the remediated channels. Channel sediment monitoring was discontinued at that time in accordance with the Remedial Action Plan.

4.6.5 Post-Remediation Groundwater Monitoring

After the installation of the cap was completed, two additional shallow zone monitoring wells (MW-21 and MW-22) were installed. The monitoring network at the site then consisted of 18 monitoring wells. The Monitoring Plan stipulated the following sampling schedule and analytical program for the site:

- Quarterly sampling of shallow zone monitoring wells for the first year (beginning in 3rd Quarter 1994);
- Semiannual sampling of deep zone monitoring wells beginning in 3rd Quarter 1994; and
- Groundwater samples to be analyzed for:
    - Chromium, copper, lead, mercury, nickel, and zinc;
    - TPH-G, TPH-D, TPH-M/O;
    - Total dissolved solids (TDS); and
    - Benzene, toluene, ethylbenzene, and total xylenes (BTEX).+

The Monitoring Plan specified that the monitoring program could be modified as follows:

- Monitoring of the shallow zone monitoring wells could be reduced to semiannually after one year if groundwater concentrations did not significantly increase;
- Monitoring of the deep zone could be discontinued in the future with the concurrence of regulatory agencies; and
- Sampling for BTEX could be discontinued after the first year of monitoring if these compounds were not detected.

Based on the results of the groundwater monitoring events conducted through 1998, the modifications listed above (except discontinuing deep zone groundwater monitoring) were implemented at the site with DTSC concurrence. In addition to those modifications, additional changes to the groundwater monitoring program were suggested in the *Remedial Action Effectiveness Report* (ERM, 1998). The additional modifications included:

- Eliminating analyses of TPH-G, TPH-O/G, and IDS from the monitoring program for all monitoring wells; and
- Reducing monitoring frequency in both shallow and deep zone wells from semiannual to annual, to be performed in the spring of each year when the groundwater table is at its highest yearly levels.

The monitoring program modifications listed above were approved by the DTSC on June 29,1998. Therefore, site monitoring wells were sampled on an annual basis for TPH-D and select metals beginning in 1999. The monitoring well network was also reduced from 18 to 15 site monitoring wells in approximately 1998 when wells MW-15R2, MW-16, and MW-17 were abandoned. Tables 2 and 3 summarize the groundwater analytical results for samples collected since 1993.

4.6.6 Site Inspections

As part of the O&M Plan, inspections are required to assess the integrity of the cap and access controls (i.e., perimeter fencing). The plan required that the inspections be performed semiannually for two years, and then annually thereafter. An inspection is also required following heavy rainfall or flooding that is greater

than a 25-year storm event for the area, or after an earthquake greater than 6.0 on the Richter scale within a 100-mile radius, to assess the stability of the vegetated cover. A standard inspection checklist was developed for the site inspections. The site inspections involve the following:

- The site is walked for signs of deterioration, erosion, subsidence, ponding, burrowing, and any other physical threats to the cover.
- Plants are inspected to assess their survival.
- The site is visually checked for the presence of chemicals or unusual soil or sediment coloration. Any unusual odors or coloration are also noted.
- The perimeter fencing, upland drainage, and other site features are inspected for damage and repaired or replaced as needed.
- Evidence of trespassing/illegal dumping, or other uses of the site are noted.
- The condition of the inner and perimeter fence, signs, gates, and locks are inspected.

In accordance with the O&M Plan, site inspections were performed on:

- October 16,1995;
- December 14,1995;
- April 17,1996;
- October 17,1996;
- April 11,1997;
- March 18,1998;
- December 15,1999;
- December 14,2000;
- December 28,2001;
- November 24,2002; and
- April 13,2005.

These site inspections resulted in very minor maintenance and repairs to the cap and perimeter fence. These inspections also did not indicate any significant site security problems, although occasional trespassing and illegal dumping are problems that UPRR has been working to alleviate. The results of these inspections have been reported previously to DTSC.

5.0 PROGRESS SINCE 2000 EPA FIVE-YEAR REVIEW

5.1 GROUNDWATER MONITORING

Since the last EPA Five-Year Review was conducted in 2000, groundwater samples have been collected on an annual basis through June 2003. The results of these monitoring events, as summarized on Tables 2 and 3, were documented in the following reports and provided to the DTSC:

- *2002 Annual Groundwater Monitoring and Site Inspection Report* (ERM 2002);
- *2002 Annual Groundwater Monitoring and Site Inspection Report* (ERM2003a); and
- *2003 Annual Groundwater Monitoring and Site Inspection Report* (ERM 2004).

In addition to the many groundwater monitoring program modifications listed in Section 4.6.5, additional changes to the program have been implemented since the EPA conducted its Five-Year Review in 2000. Based on temporal trends observed between 1998 and 2003, the *Liquid Gold Site, Richmond, California, Five-year Review* (ERM 2003b) recommended the following additional modifications to the groundwater monitoring program:

- Monitoring of all deep zone monitoring wells should be discontinued because metals concentrations in these wells were relatively stable and TPH-D concentrations were less than 200 ug/L.
- Reducing the monitoring of the shallow zone to only shallow monitoring wells MW-4R, MW-7R, MW-8, MW-11, MW-12R, and MW-13.
- Site inspections and groundwater monitoring frequency should be reduced from annually to every 2 years.
- All monitoring wells except MW-4R, MW-7R, MW-8, MW-11, MW-12R, and MW-13 should be abandoned.

DSTC concurred with the above recommendations in correspondence dated June 27,2003. Therefore, groundwater monitoring was not conducted in 2004. The first biannual monitoring event occurred in June 2005. All monitoring wells except MW-4R, MW-7R, MW-8, MW-11, MW-12R, and MW-13 were abandoned in May 2004. The monitoring wells were abandoned in accordance with Contra Costa County requirements. Copies of the well abandonment forms are provided in Appendix B.

5.2 SITE INSPECTIONS

In accordance with the O&M Plan and DTSC-approved modifications to the O&M Plan, site inspections were conducted on an annual basis through 2002 and are currently conducted on a biannual basis. Site inspections have been conducted on the following dates since the EPA last conducted its 5-Year Review in 2000:

- December 14,2000;
- December 28,2001;
- November 28,2002; and
- April 13,2005.

Results of inspections, which have been reported to the DTSC, found the integrity of the soil cap to be in good condition. Fence panels and some locks were observed as broken, indicating that trespassing was likely occurring at the site. Copies of the site inspection reports are provided in Appendix C.

6.0 FIVE-YEAR REVIEW PROCESS

6.1 ADMINISTRATIVE COMPONENTS

The EPA Remedial Project Manager notified the Union Pacific Railroad Company, in early 2005, that a Five-Year Review, following EPA guidelines, was scheduled for completion in September 2005. Since an earlier "five-year review" had been conducted in 2003 and was approved by the Department of Toxic Substances Control, it was agreed that this review would be an update of that review, though it would follow EPA guidance more carefully, particularly with respect to review of Institutional Controls, an EPA priority.

6.2 COMMUNITY INVOLVEMENT

The site was deleted on September 11,1996. There has been no public involvement since that time. This report, once completed and signed, will be made available for public review and comment by publishing a Public Notice in a local newspaper. The comments that are received, if any, will be addressed during the next review cycle.

6.3 DOCUMENT REVIEW

As part of this 5-Year Review, the following documents were reviewed:

- *Final Remedial Investigation Report* (Kennedy/Jenks/Chilton 1990);
- *EPA Superfund Record of Decision* (EPA 1993);
- *Covenant to Restrict Use of Property, The Former "Liquid Gold" Site Richmond, California*, recorded September 13,1995 (Contra Costa Records 1995);
- *Remedial Action Documentation Report* (Kennedy/Jenks 1995c);
- *Remedial Action Effectiveness Report* (ERM1998);
- *Five-Year Review for the Liquid Gold Superfund Site*, Richmond CA (EPA 2000);
- *2001 Annual Groundwater Monitoring and Site Inspection Report* (ERM 2002);
- *2002 Annual Groundwater Monitoring and Site Inspection Report* (ERM 2003a);
- *5-Year Review* (ERM 2003b);
- *Title Report* (First American Title Company, 2003); and
- 2003 Annual Groundwater Monitoring and Site Inspection Report (ERM 2004).
- *Memorandum - Evaluation of ecological risk for the Five-Year Review of Liquid Gold* (Ned Black, Ph. D., August 31,2005).

6.4 DATA REVIEW

Groundwater analytical results collected over the previous 5 years were reviewed to determine if groundwater concentrations at the site are stable or if increasing/decreasing concentration trends are occurring at the site.

In this section, groundwater monitoring data prior to the 1994 remedial actions are compared to the groundwater data accumulated after the remedial action. The data for each monitoring event have been compiled for comparison and are organized by monitoring event (Table 2) and by monitoring well (Table 3). Graphs depicting concentration trends for each well are included in Appendix D. For comparison purposes, non-detect values are plotted as half their detection limits. Because the DTSC has previously

approved the abandonment of all site monitoring wells except MW-4R, MW-7R, MW-8, MW-11, MW-12R, and MW-13, the groundwater concentration trends presented in the following subsections focuses on the six monitoring wells that remain at the site.

6.4.1 Metals Concentrations

As seen on the concentration trend graphs for metals in each well (Figure D-l in Appendix D), the concentrations of the six metals monitored since completion of the vegetated cap appear to be stable at low concentrations. There has not been any distinct increase in metals concentrations in any of the wells over time, except in 2000 and 2003, as discussed below. All the detection values for metals in the 5-year period since the EPA's Five-Year Review in 2000 were below their respective California Maximum Contaminant Levels (MCL), except lead in select samples during 2000 and 2003.

The samples collected in 2000 and 2003 were not field-filtered prior to preservation with nitric acid; therefore, the metals data presented in Tables 2 and 3 for the 2000 and 2003 monitoring events represent total metals. Field filtration is used to remove suspended sediment particles from groundwater and, therefore, provides an accurate measurement of the concentration of dissolved metals. Because the metals samples in 2000 and 2003 were not field-filtered, the results were greater than other sampling events in which samples had been filtered. Therefore, the higher concentrations do not likely represent an increasing trend in metals concentrations. During future monitoring events, ground water samples for metals analyses will be field-filtered prior to preservation so that groundwater metal concentrations can be better monitored and evaluated for trends.

6.4.2 Total Petroleum Hydrocarbons

TPH-D has historically been detected in all groundwater monitoring wells except for MW-1 and MW-16, as summarized in Tables 1 and 2. Silica gel cleanup (SGCU) was performed on the samples collected in 1999,2000, 2001, and 2003. SGCU is used to remove polar organic compounds, such as naturally occurring biogenic compounds. All detectable concentrations of TPH-D decreased with the SGCU procedure. TPH-D concentrations are stable or declining in the site monitoring wells since 2000, as shown on Figure D-2 in Appendix D. Furthermore, TPH-D was non-detect in 2003 in the samples from the six monitoring wells that presently remain at the site. These wells are positioned around the perimeter of the site and the non-detect results indicate that groundwater impacted with TPH-D is not migrating off-site.

6.5 REVIEW OF INSTITUTIONAL CONTROLS

The Covenant to Restrict Use of Property (Appendix F), recorded on September 13,1995, was reviewed by the Remedial Project Manager and the Assistant Regional Counsel, Sarah Mueller. In addition, Union Pacific Railroad Company was asked to perform a Title Search, and submitted a title search performed in 2003 to EPA, which was reviewed by the RPM and Assistant Regional Counsel.

6.6 SITE INSPECTION

A Site Inspection, attended by Michael Grant, representative for the Union Pacific Railroad Company (UPRR), Mr. John Cavanaugh of ERM, consultant to UPRR, and Lynn Suer, EPA Remedial Project Manager was conducted on April 13,2005, specifically as a part of this Five-Year Review Process. The results of this inspection are recorded in a checklist included in Appendix C. This inspection revealed that the vegetation cap is in good condition, with no signs of erosion or ponding of water. Although the fencing

was in good condition, the gate hinges had been compromised by trespassers and were in need of repair. In addition, it appeared that a small portion of the vegetated cap was not enclosed within the fencing. This issue is further described in Section 8 (Protectiveness Issues).

7.0 TECHNICAL ASSESSMENT

As outlined in the Comprehensive Five-Year Review Guidance (EPA 2001), the following questions shall be addressed during the Five-Year Review process:

- Question 1: Is the remedy functioning as intended by the decision documents?
- Question 2: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?
- Question 3: Has any other information come to light that could call into question the protectiveness of the remedy?

Question 1: Is the remedy functioning as intended by the decision documents?

The remedial objectives for this site include restricting development of the site from residential use, reducing the potential for disturbance of the soils, and providing a means for long-term monitoring of groundwater to detect significant changes in groundwater quality.

The implementation of the deed restriction has served to restrict residential development of the site. The installation of the vegetative soil cover (cap) and perimeter fencing reduce the potential for soils to be disturbed at the site. Site inspections, groundwater monitoring, marsh channel sediment sampling, and marsh channel sediment deposition monitoring indicate that the remedial action (completed in 1994) has met the remainder of the remedial objectives.

The following specific conclusions can be made from the available data:

- There has not been any significant disturbance to site soils;
- The marsh channels have been restored with no increase to bivalve toxicity;
- Site security, accomplished by fencing and locked gate, has been adequately maintained, although some trespassing occurs between inspections;
- There have not been any significant changes in groundwater quality;
- There has been no significant increase in dissolved metals concentrations in the on-site monitoring wells;
- Petroleum hydrocarbon detections in the deep zone monitoring wells have remained stable at concentrations less than 200
- Petroleum hydrocarbon detections in the shallow zone monitoring wells have been relatively stable or declining. Concentration increases have not occurred in the past 5 years indicating no migration off-site; and
- The deed restriction has effectively prevented residential development of the site.

Question 2: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of remedy selection still valid?

The exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time the site remedy was selected are still valid. The remedy for the site was risk-based, as no Applicable or Relevant and Appropriate Regulations (ARARs) were identified for soil or groundwater contaminant levels. The human health risk assessment found that the carcinogenic risks at the site were within EPA's acceptable risk range. However, because of lead levels in a limited subsurface portion of the site, the potential non-carcinogenic risk hazard index exceeded acceptable risk levels, for children only, under a hypothetical residential development. Given the site's commercial/industrial zoning and anticipated future use, the selected remedy required the prohibition of residential use and required installation and maintenance of a soil cap, fencing, excavation of marsh sediments, and groundwater monitoring in order to maintain the suitability of the site for commercial/industrial use.

The Ecological Investigation and Environmental Evaluation described in the Remedial Investigation (RI) Report (1990) were thorough and included most types of studies which satisfy current ecological risk assessment guidance documents. The RI work plan for assessing risks to Hoffman Marsh adjacent to the site should have included bulk sediment bioassays, in addition to the soil elutriate tests that were performed. DTSC concluded that risk from site contaminants were acceptable in the marsh, though an evaluation using current guidance might not reach the same conclusion. Regardless, the Remedial Action Documentation Report (1995) and the Remedial Action Effectiveness Report (1998) both indicate that the sediments that were most suspect were removed and the excavated areas re-vegetated to promote sediment re-deposition. In light of the entire effort in Hoffman Marsh, the statement that the remedy is protective of the environment can be supported (EPA Memorandum, 2006).

ARARs, which were identified in the ROD as relevant and appropriate in carrying out remedial actions (site capping, grading, sediment excavation), were the closure requirements of the California Hazardous Waste Control Law and the Coastal Zone Management Act. These were complied with during construction and no longer are ARARs. No other ARARs have been identified during this Five-Year Review.

Question 3: Has any other information come to light that could call into question the protectiveness of the remedy?

The only new information to come to light during this review is that the fencing may not completely enclose the vegetated cap. Also, it is not clear whether the fenced area corresponds exactly to the deed restricted area.

A further issue is that the parcel numbers in the deed restriction are ambiguous. Both of these issues are further discussed in Section 8 (Protectiveness Issues).

8.0 PROTECTIVENESS ISSUES

Although trespassing continues to be an issue with site security, the levels of metals, PAHs, and TPH remaining on-site do not pose unacceptable risks to adult or child trespassers/according to the risk assessment and the cap remains intact. Therefore, the selected remedy continues to be protective of human health.

Review of the map which superimposes the area of the vegetated cap with the deed restricted area indicates there may be a very small portion of the cap along the southwest boundary and southern tip of the vegetated area that is not contained within the deed restricted area. It is also not explicitly clear that the deed restricted area is the same as the fenced area. It is possible that the fence along these boundaries will need to be repositioned slightly and the deed restriction revised to ensure future protectiveness.

The parcel numbers in the deed restriction are ambiguous. This issue could affect future protectiveness, if the property is transferred.

Future groundwater samples should measure dissolved concentrations of metals, in addition to total metals. This issue does not affect either current or future protectiveness, as the current method of measuring total metals is more conservative than the dissolved measure, and it will continue to be implemented.

9.0 RECOMMENDATIONS AND FOLLOW-UP ACTIONS

The following table summarizes recommendations and follow-up actions for each issue, as well as the party responsible for implementation, the agency with oversight authority, a recommended schedule for implementation and completion, and the impact, if any, on current or future protectiveness.

Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Follow-up Actions: Protectiveness (Y/N)	
				Current	Future
Investigate why the area of the vegetated cap and the deed restricted area do not exactly coincide along the southwest boundary and southern tip, as indicated by the map in Appendix F, and provide analysis to EPA Project Manager. The EPA Project Manager and Assistant Regional Counsel will determine, after reviewing this analysis, whether follow-up actions are needed.	UPRR	EPA	1/15/06	N	Y
Investigate why the Legal Description of the deed restricted area, specifically the parcel number (s) are unclear in the Covenant to Restrict Use of Property. Provide an analysis of this issue to the EPA Project Manager. The EPA Remedial Project Manager and Assistant Regional Counsel will determine, after reviewing this analysis, whether follow-up actions are needed.	UPRR	EPA	1/15/06	N	Y
Groundwater samples collected during future monitoring events will be field-filtered and analyzed for dissolved metals. Future groundwater monitoring reports will reflect this change in methodology.	UPPR	DISC	Next Monitoring Event	N	N

10.0 PROTECTIVENESS STATEMENT

The remedy at Liquid Gold Oil Superfund Site currently protects human health and the environment because all immediate threats at the site have been addressed through the removal of contaminated material, stabilization and capping of on-site contaminated soils, access restrictions (fencing, warning signs), regular maintenance of engineered control structures, and institutional controls (deed restriction) that restrict land uses.

Additionally, in order to ensure long-term protection of human health and the environment, the UPPR must investigate whether the boundaries of the vegetative cap, fencing and deed restriction are the same, and resolve any discrepancies that may exist.

11.0 NEXT REVIEW

A Five-Year Review report will be prepared in 2008 for the DTSQ and submitted to EPA for review and concurrence. The current EPA Remedial Project Manager has sent a letter request to the DTSC Remedial Project Manager, requesting that the next DTSC five-year review be submitted to the EPA Remedial Project Manager for review and approval, so that Union Pacific Railroad Company does not have to complete more than one review every five years. The next DTSC five-year review is scheduled for 2008. Therefore, the next EPA Five-Year Review is scheduled for September 12, 2008, just three years from the completion of this report.

12.0 REFERENCES

California Environmental Protection Agency, Department of Toxic Substances Control (DTSC). 2003. Letter to communication to Mr. Mike Grant, Union Pacific Railroad Company. June 27,2003.

Contra Costa County Records, 1995. Covenant to Restrict Use of Property, The Former " Liquid Gold" Site, Richmond, California, Filing No. 95 152781. September 13,1995.

DTSC. *Site Cleanup - Site Mitigation and Brownfields Reuse Program Database. Profile Report ID:07290039 Liquid Gold Oil Corp*. On-line posting. Accessed June 3,2005. http://www.dtsc.ca.gov/database/Calsites/CALP001.DFM?IDNUM= 07290039.

ERM. 1998. *Remedial Action Effectiveness Report, Liquid Gold Site, Richmond, California*. June 1998.

ERM. 2002. *2002 Annual Groundwater Monitoring and Site Inspection Report*. February 2002.

ERM. 2003a. *2002 Annual Groundwater Monitoring and Site Inspection Report*. April 2003.

ERM. 2003b. *Liquid Gold Site, Richmond, California, 5-Year Review*. July 2003.

ERM. 2004. *2003 Annual Groundwater Monitoring and Site Inspection Report*. April 2004.

First American Title Company 2003. *Title Order 584574 Update III*. 345 California Street, Suite 2400, San Francisco, California 94104. September 2003.

Kennedy/Jenks Consultants (K/J). 1988. *Remedial Investigation/Feasibility Study Workplan*. 1988.

Kennedy/Jenks/Chilton. 1990. *Final Remedial Action Report Liquid Gold Site Richmond, California*. December 1990.

K/J. 1995a. *Groundwater Monitoring Plan, Liquid Gold Site, Richmond, California*. January 1995.

K/J. 1995b. *Operations and Maintenance Plan, Liquid Gold Site, Richmond, California*. July 1995.

K/J. 1995c. *Remedial Action Documentation Report, Liquid Gold Site, Richmond, California*. October 1995.

United States Environmental Protection Agency (EPA). 1993. EPA *Superfund Record of Decision: Liquid Gold Oil Corp., EPA ID: CAT000646208, OU 01*, Richmond, California. EPA/ROD/R09-93/091/1993. June 21,1993.

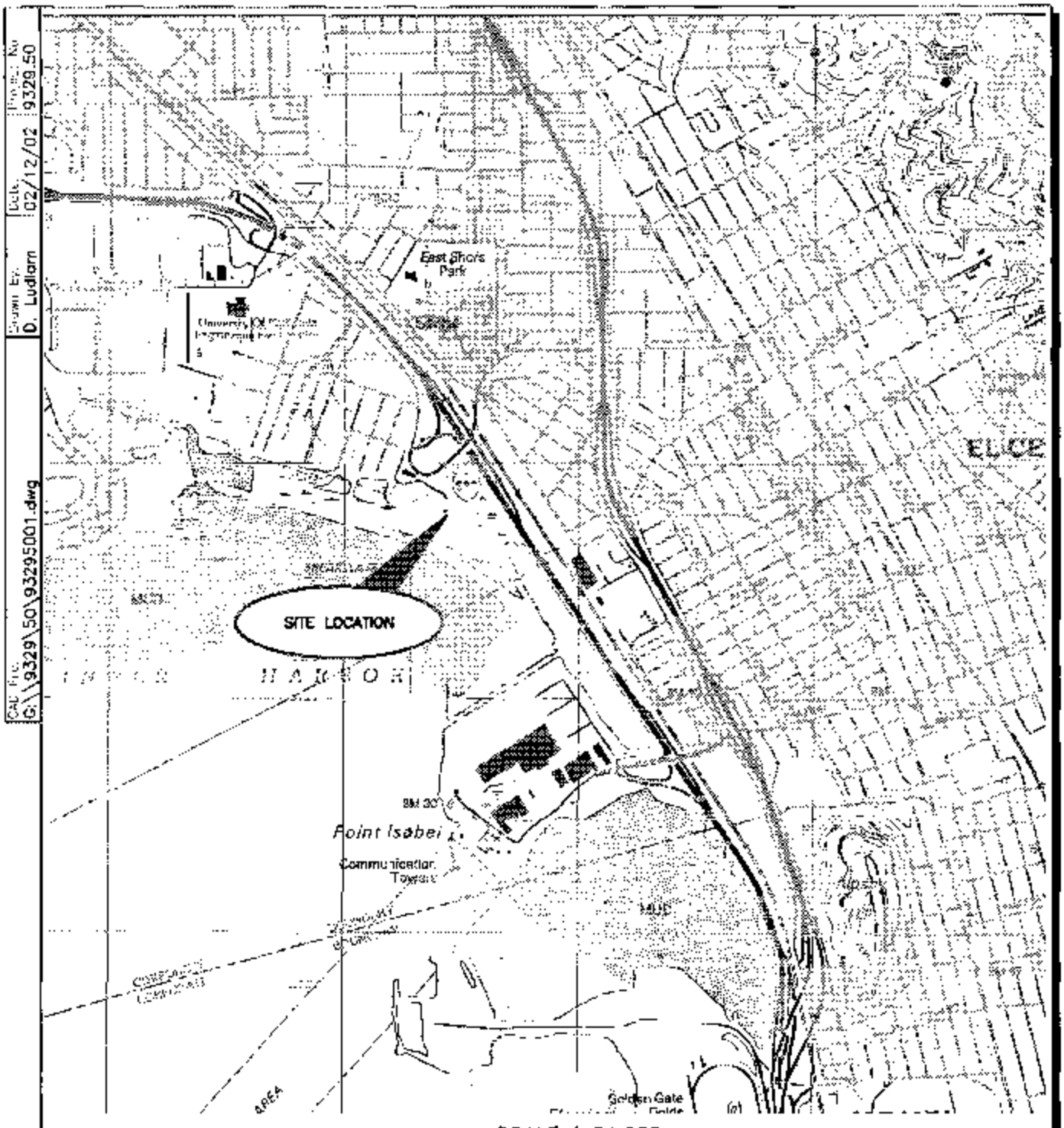
EPA. June 15,2000. *Liquid Gold Oil Corp., California, EPA ID#CAT000646208.* On-line posting. Accessed June 3, 2005. http://yosemite.epa.gov/r9/sfund/overview.nsf/ef81e03bOf6bcdb2882565Of005dc4cl/ ldf486b24e62cl058825660b007ee681?OpenDocument.

EPA, Region IX. 2000. *Memorandum - Five-Year Review for the Liquid Gold Superfund Site, Richmond, CA, EPA ID# CAT000646208*. September 12,2000.

EPA, Region IX. 2005. *Memorandum - Evaluation of ecological risk for the Five-Year Review of Liquid Gold* (Ned Black, Ph.D., August 31,2005).

EPA. 2001. *Comprehensive Five-Year Review Guidance, EPA 540-R-01-007, OSWER No. 9355.7-03B-P*. June 2001.

Figures

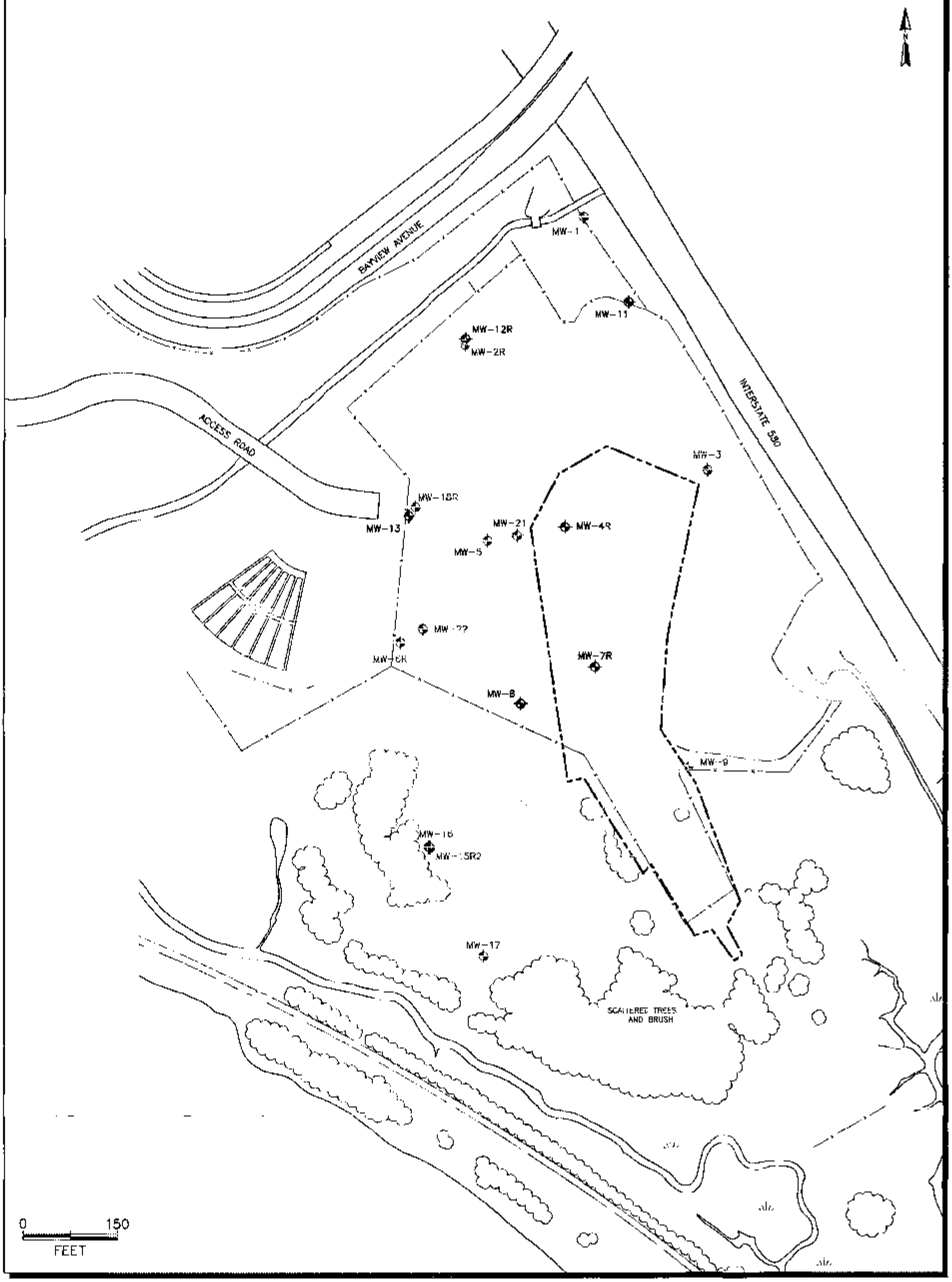


References:
U.S.G.S. 7.5 Minute Series (Topographic Richmond, California Quadrangle,)
Dated: 1993

Figure 1
Site Location Map
Liquid Gold Site
Union Pacific Railroad Company
Richmond, California

LRM 02/02

CAD File:	Drawn By:	Date:	Project No.
g:\\0020568\59\002056859-01.dwg	J. Estrada	06/07/05	0020568.59



LEGEND

- MONITORING WELL
- MONITORING WELL, ABANDONED
- EXISTING FENCE
- VEGETATED COVER

Figure 2
Site Detail Map
Liquid Gold Facility
Union Pacific Railroad Company
Richmond, California
ERM 06/05

Tables

Table 1
Site Chronology
Liquid Gold Site
Richmond, California

Event	Date
Removal activities - storage tanks and contents removed and disposed off-site.	1982-1983
Site listed on the California State Superfund List.	January 1983
Sited listed on the EPA National Priority List.	September 1983
Removal activities - drums of hazardous waste removed and disposed off-site.	1984
Removal activities - 760 cubic yards contaminated soil and demolition debris removed and disposed off-site.	1985
Removal activities - site buildings demolished and debris disposed off-site.	1989
Remedial Investigation/Feasibility Study conducted.	1988-1992
EPA Record of Decision issued.	21 June 1993
Soil cap installed and marsh channel sediment excavated.	July 1994
Final cap installation inspection conducted.	February 1995
Deed restriction signed into effect.	September 1995
Operation and Maintenance Plan certified.	September 1995
Site removed from EPA National Priority List.	September 1996

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
Ground Water Monitoring Data Before Clay Cap Installation																	
MW-1	D	Feb-93	<0.002	<0.002	<0.01	8.1	<0.0002	<0.005	0.02	11,700	0.5	<5.0	7.3	5,200	<50	<50	-
MW-2R	D	Feb-93	0.0011	<0.01	<0.05	20.2	0.00044	5.2	<0.02	57,700	<5	<5.0	6.5	1,990	<50	66	-
MW-3	D	Feb-93	<0.001	0.003	<0.005	12	<0.0002	0.0085	0.052	12,700	<0.5	<5.0	7.7	2,460	<50	71	-
MW-4R	S	Feb-93	0.0014	<0.001	<0.005	1.5	<0.0002	0.067	0.031	4,770	<0.5	<5.0	5.8	2,430	<50	290	-
MW-5	S	Feb-93	0.0012	<0.01	<0.05	7.9	<0.0002	<0.04	<0.02	52,900	<5	<5.0	6.4	1,816	<50	<50	-
MW-7R	S	Feb-93	0.0012	0.0015	0.0051	0.78	<0.0002	0.013	0.046	993	<0.05	<5.0	7.7	330	<50	490	-
MW-8	S	Feb-93	0.0014	<0.001	<0.001	11.3	<0.0002	<0.005	0.027	8,400	<0.5	<5.0	6.2	1,133	<50	240	-
MW-9	D	Feb-93	<0.001	<0.001	<0.005	8.1	<0.0002	<0.005	0.029	16,200	<0.5	<5.0	6.8	2,960	<50	<50	-
MW-9DUP	D	Feb-93	<0.001	<0.001	<0.005	8.3	<0.0002	<0.005	<0.02	14,600	5.2	<5.0	-	-	<50	<50	-
MW-11	S	Feb-93	<0.001	<0.001	<0.005	0.68	<0.0002	0.0086	<0.02	861	0.53	<5.0	7.1	856	<50	<50	-
MW-12R	S	Feb-93	0.0018	0.0045	<0.005	0.91	<0.0002	<0.005	<0.02	1,900	<0.5	<5.0	6.0	1,593	<50	<50	-
MW-13	S	Feb-93	-	-	-	-	-	-	-	-	-	-	-	-	-	66	-
MW-16	D	Feb-93	<0.001	<0.001	<0.01	7.3	<0.0002	<0.005	0.02	12,700	<0.5	<5.0	6.4	1,646	<50	<50	-
MW-17	S	Feb-93	0.0023	<0.002	<0.001	0.84	<0.0002	<0.005	<0.02	6,390	<0.5	<5.0	6.9	693	<50	270	-
MW-18R	D	Feb-93	<0.002	<0.002	<0.025	22.9	<0.0002	0.07	0.23	44,600	<50	<5.0	6.6	1,622	<50	<50	-
MW-1	D	May-93	<0.001	<0.001	<0.01	-	<0.0002	<0.005	0.02	-	-	<1.0	7.9	9,590	<50	<50	-
MW-2R	D	May-93	<0.001	0.0031	<0.01	-	0.0011	0.053	<0.02	-	-	<1.0	6.7	>20,000	<50	98	-
MW-3	D	May-93	<0.002	0.0012	<0.01	-	<0.0002	<0.01	0.052	-	-	<1.0	7.9	11,010	<50	<50	-
MW-4R	S	May-93	<0.001	<0.001	<0.01	-	<0.0002	0.064	0.031	-	-	<1.0	6.9	6,180	<50	260	-
MW-5	S	May-93	<0.001	<0.001	<0.05	-	<0.0002	0.022	<0.02	-	-	<1.0	7.7	>20,000	<50	<50	-
MW-7R	S	May-93	<0.002	<0.001	<0.001	-	<0.0002	0.023	<0.005	-	-	1	7.5	2,990	<50	240	-
MW-7RDUP	S	May-93	<0.001	<0.001	<0.01	-	<0.0002	0.016	<0.02	-	-	<5.0	-	-	<50	360	-
MW-8	S	May-93	<0.001	<0.001	<0.01	-	<0.0002	<0.005	<0.02	-	-	<1.0	7.2	9,260	<50	140	-
MW-9	D	May-93	<0.002	0.0015	<0.01	-	<0.0002	<0.01	<0.02	-	-	<1.0	7.6	10,740	<50	<50	-
MW-11	S	May-93	<0.002	0.0028	<0.005	-	<0.0002	0.016	<0.02	-	-	-	8.2	4,850	<50	<50	-
MW-12R	S	May-93	0.0035	<0.001	0.02	-	<0.0002	<0.02	<0.02	-	-	<1.0	6.0	>20,000	<50	300	-
MW-13	S	May-93	<0.01	0.02	<0.04	-	<0.0002	0.025	<0.02	-	-	<1.0	7.5	>20,000	<50	<50	-
MW-16	D	May-93	<0.002	<0.001	<0.1	-	<0.0002	<0.005	0.02	-	-	<1.0	6.6	15,310	<50	<50	-
MW-17	S	May-93	<0.002	<0.001	<0.01	-	<0.0002	<0.01	0.02	-	-	5.3	6.4	10,090	<50	260	-
MW-18R	D	May-93	-	<0.001	<0.1	-	<0.0002	0.071	<0.02	-	-	<1.0	7.5	>20,000	<50	<50	-
MW-1	D	Apr-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	7.1	17,500	<50	<50	-
MW-2R	D	Apr-94	<0.001	0.0054	<0.05	-	0.00024	0.096	<0.1	-	-	<5.0	6.6	>20,000	<50	<50	-
MW-3	D	Apr-94	<0.001	0.0048	<0.005	-	<0.0002	0.012	<0.1	-	-	<5.0	6.6	>20,000	<50	<50	-
MW-4R	S	Apr-94	<0.001	<0.001	0.0059	-	<0.0002	0.072	0.024	-	-	<5.0	6.9	11,870	<50	1,000	-
MW-5	S	Apr-94	<0.001	0.0027	<0.005	-	<0.0002	0.035	<0.1	-	-	<5.0	6.6	>20,000	<50	<50	-
MW-7R	S	Apr-94	0.0012	0.0031	<0.01	-	<0.0002	0.02	0.023	-	-	<5.0	7.0	5,810	<50	1,100	-
MW-8	S	Apr-94	0.0012	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	6.7	15,800	<50	280	-
MW-8DUP	S	Apr-94	0.0014	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	-	-	<50	440	-
MW-9	D	Apr-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	6.3	>20,000	<50	<50	-
MW-11	S	Apr-94	<0.001	0.004	<0.005	-	<0.0002	0.013	<0.02	-	-	<5.0	7.2	3,610	<50	170	-
MW-12R	S	Apr-94	0.0012	0.0017	<0.005	-	<0.0002	0.024	<0.02	-	-	<5.0	6.2	>20,000	<50	320	-
MW-13	S	Apr-94	-	-	-	-	-	-	-	-	-	<5.0	6.6	>20,000	<50	290	-
MW-16	D	Apr-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	7.0	19,100	<50	<50	-
MW-17	S	Apr-94	0.003	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	6.5	10,015	<50	740	-
MW-18R	D	Apr-94	<0.001	0.0039	<0.005	-	<0.0002	0.073	<0.1	-	-	<5.0	6.9	>20,000	<50	<50	-

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
Ground Water Monitoring Data After Clay Cap Installation																	
MW-1	D	Sep-94	<0.001	<0.002	<0.005	-	<0.0002	<0.005	<0.04	13,300	-	<5.0	7.4	19,270	<50	<50	-
MW-3	D	Sep-94	<0.001	0.0046	<0.005	-	<0.0002	0.012	0.024	15,600	-	<5.0	7.0	20,060	<50	56	-
MW-4R	S	Sep-94	-	-	-	-	-	-	-	-	-	-	6.9	13,600	<50	-	-
MW-5	S	Sep-94	<0.001	<0.001	<0.025	-	<0.0002	0.058	<0.1	55,100	-	<5.0	6.6	>20,000	<50	<50	-
MW-6R	D	Oct-94	<0.001	0.003	<0.01	-	<0.0002	0.0066	<0.04	17,400	-	<5.0	7.4	19,000	<50	<50	-
MW-7R	S	Sep-94	0.0042	0.0034	0.052	-	<0.0002	0.015	<0.02	6,530	-	5.9	7.0	8,350	<50	1,500	-
MW-8	S	Sep-94	0.016	<0.001	<0.025	-	<0.0002	<0.005	<0.02	19,700	-	5.2	7.0	31,100	<50	180	-
MW-8DUP	S	Sep-94	0.014	<0.001	<0.01	-	<0.0002	<0.01	<0.02	18,200	-	<5.0	-	-	<50	190	-
MW-9	D	Sep-94	<0.001	<0.002	<0.005	-	<0.0002	<0.005	<0.02	20,200	-	-	7.1	25,900	<50	<50	-
MW-11	S	Sep-94	-	-	-	-	-	-	-	-	-	<5.0	7.5	11,170	<50	-	-
MW-12R	S	Sep-94	0.021	<0.001	<0.025	-	<0.0002	<0.01	<0.04	42,700	-	-	6.8	59,300	<50	-	-
MW-13	S	Sep-94	0.021	0.0032	<0.025	-	<0.0002	0.012	0.077	39,900	-	<5.0	6.5	57,800	<50	-	-
MW-15R2	S	Sep-94	0.019	0.0015	<0.005	-	<0.0002	<0.005	<0.02	11,000	-	<5.0	6.9	18,220	<50	280	-
MW-16	D	Sep-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,800	-	<5.0	6.9	19,800	<50	<50	-
MW-17	S	Sep-94	0.0057	<0.001	<0.005	-	<0.0002	<0.005	<0.02	18,600	-	<5.0	6.9	25,600	<50	740	-
MW-18R	D	Sep-94	<0.001	0.0032	<0.025	-	<0.0002	0.068	<0.1	49,500	-	<5.0	6.8	64,700	<50	<50	-
MW-21	S	Sep-94	0.004	0.002	<0.025	-	<0.0002	0.03	0.08	32,900	-	<5.0	7.0	>20,000	<50	420	-
MW-22	S	Sep-94	0.0039	0.013	0.059	-	<0.0002	<0.005	0.043	11,300	-	<5.0	7.2	16,330	<50	330	-
MW-4R	S	Dec-94	-	0.01	<0.005	-	-	0.03	0.042	3,370	-	<5.0	-	-	<50	640	-
MW-7R	S	Dec-94	-	0.019	0.0056	-	-	0.021	0.035	383	-	<5.0	-	-	<50	2,000	-
MW-8	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	0.043	8,720	-	<5.0	-	-	<50	1,500	-
MW-11	S	Dec-94	-	0.003	<0.005	-	-	0.0088	<0.02	778	-	<5.0	-	-	<50	220	-
MW-12R	S	Dec-94	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	760	-
MW-13	S	Dec-94	-	0.0032	<0.025	-	-	0.012	0.077	-	-	<5.0	-	-	<50	860	-
MW-15R2	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	<0.02	4,830	-	<5.0	-	-	78	1,900	-
MW-15R2DUP	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	<0.02	4,980	-	<5.0	-	-	80	2,200	-
MW-17	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	0.024	5,820	-	<5.0	-	-	<50	1,600	-
MW-21	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	<0.02	26,600	-	<5.0	-	-	<50	1,000	-
MW-22	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	0.048	5,170	-	<5.0	-	-	<50	350	-
MW-1	D	Apr-95	0.0012	0.0072	<0.025	-	<0.0002	0.006	<0.02	10,700	-	<5.0	7.2	200,000	<50	<50	-
MW-3	D	Apr-95	<0.001	<0.001	<0.025	-	<0.0002	0.01	<0.02	11,100	-	<5.0	7.2	20,500	<50	<50	-
MW-4R	S	Apr-95	0.0013	0.011	<0.025	-	<0.0002	0.043	0.035	4,950	-	<5.0	-	-	<50	340	-
MW-6R	D	Apr-95	<0.001	<0.002	<0.025	-	<0.0002	0.0058	<0.02	7,500	-	<5.0	7.4	24,300	<50	<50	-
MW-7R	S	Apr-95	0.0011	0.002	<0.005	-	<0.0002	0.029	0.25	13,600	-	<5.0	-	-	<50	1,500	-
MW-8	S	Apr-95	0.0027	<0.001	<0.025	-	<0.0002	<0.005	<0.02	755	-	<5.0	-	-	<50	530	-
MW-9	D	Apr-95	<0.001	<0.001	<0.025	-	<0.0002	<0.005	<0.1	13,000	-	20	6.8	24,800	<50	<50	-
MW-11	S	Apr-95	0.0014	0.0091	<0.05	-	<0.0002	0.0088	<0.02	982	-	<5.0	-	-	<50	<50	-
MW-12R	S	Apr-95	0.0053	<0.001	<0.025	-	<0.0002	0.0053	<0.1	13,600	-	<5.0	-	-	<50	230	-
MW-13	S	Apr-95	0.0056	0.0068	<0.025	-	<0.0002	0.028	<0.1	30,400	-	<5.0	-	-	<50	-	-
MW-15R2	S	Apr-95	0.0024	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,420	-	<5.0	-	-	<50	1,800	-
MW-15RDUP	S	Apr-95	0.0016	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,480	-	<5.0	-	-	<50	1,600	-
MW-16	D	Apr-95	<0.001	<0.001	<0.025	-	<0.0002	<0.005	<0.1	10,300	-	<5.0	6.9	19,400	<50	<50	-
MW-17	S	Apr-95	0.0024	<0.001	<0.005	-	<0.0002	<0.005	<0.02	4,250	-	<5.0	-	-	<50	1,500	-
MW-18R	D	Apr-95	<0.001	<0.002	<0.05	-	<0.0002	0.074	<0.1	39,500	-	<5.0	6.9	63,200	<50	<50	-
MW-21	S	Apr-95	0.0048	<0.001	<0.025	-	<0.0002	0.011	<0.1	28,500	-	<5.0	-	-	<50	880	-
MW-22	S	Apr-95	<0.001	<0.001	<0.005	-	<0.0002	<0.005	0.025	5,040	-	<5.0	-	-	<50	380	-

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
MW-4R	S	Jun-95	-	-	-	-	-	-	-	-	-	-	7.1	5,570	<50	-	-
MW-7R	S	Jun-95	-	0.0017	<0.005	-	-	0.017	<0.02	4,520	-	<5.0	7.0	5,560	<50	370	-
MW-8	S	Jun-95	-	<0.001	<0.005	-	-	<0.005	<0.02	11,600	-	<5.0	7.0	17,100	<50	210	-
MW-8DUP	S	Jun-95	-	0.0022	<0.005	-	-	<0.005	<0.02	10,700	-	<5.0	-	-	<50	310	-
MW-11	S	Jun-95	-	-	-	-	-	-	-	-	-	<5.0	7.0	3,820	-	89	-
MW-12R	S	Jun-95	-	-	-	-	-	-	-	-	-	-	6.8	39,400	<50	160	-
MW-13	S	Jun-95	-	-	-	-	-	-	-	-	-	-	6.8	52,200	<50	-	-
MW-15R2	S	Jun-95	-	0.0021	<0.005	-	-	<0.005	<0.02	4,260	-	<5.0	6.8	6,240	<50	490	-
MW-17	S	Jun-95	-	<0.001	<0.005	-	-	<0.005	<0.02	3,610	-	<5.0	6.8	5,160	<50	420	-
MW-21	S	Jun-95	-	-	-	-	-	-	-	-	-	-	7.0	51,700	<50	290	-
MW-22	S	Jun-95	-	<0.001	<0.005	-	-	<0.005	<0.02	7,280	-	<5.0	7.6	9,770	<50	340	-
MW-1	D	Sep-95	-	<0.001	<0.025	-	-	<0.005	<0.02	11,000	-	<5.0	7.1	18,600	<50	<50	-
MW-3	D	Sep-95	-	0.0022	<0.025	-	-	0.012	<0.02	13,400	-	<5.0	7.2	20,200	<50	<50	-
MW-4R	S	Sep-95	-	<0.001	<0.005	-	-	0.057	<0.02	6,340	-	<5.0	7.2	10,500	<50	-	-
MW-6R	D	Sep-95	-	<0.001	<0.025	-	-	0.0065	<0.02	19,900	-	<5.0	7.5	25,300	<50	<50	-
MW-7R	S	Sep-95	-	0.0061	<0.005	-	-	0.014	<0.02	7,040	-	<5.0	6.8	8,600	<50	280	-
MW-8	S	Sep-95	-	<0.001	<0.025	-	-	<0.025	<0.02	16,600	-	<5.0	7.1	27,100	<50	140	-
MW-9	D	Sep-95	-	<0.001	<0.025	-	-	<0.005	<0.02	18,600	-	<5.0	7.0	24,800	<50	<50	-
MW-11	S	Sep-95	-	<0.001	<0.005	-	-	0.018	<0.02	-	-	<5.0	6.7	9,300	<50	-	-
MW-12R	S	Sep-95	-	<0.001	<0.05	-	-	<0.025	<0.1	38,800	-	<5.0	7.0	57,100	<50	-	-
MW-13	S	Sep-95	-	<0.005	<0.025	-	-	<0.05	<0.1	35,200	-	<5.0	6.7	56,100	<50	390	-
MW-15R2	S	Sep-95	-	<0.001	<0.005	-	-	<0.025	<0.02	7,020	-	<5.0	6.8	11,400	<50	260	-
MW-16	D	Sep-95	-	0.0084	<0.005	-	-	<0.005	<0.02	13,700	-	<5.0	7.1	19,500	<50	<50	-
MW-16DUP	D	Sep-95	-	<0.001	<0.005	-	-	<0.005	<0.02	13,200	-	<5.0	-	-	<50	<50	-
MW-17	S	Sep-95	-	<0.001	<0.025	-	-	<0.01	<0.02	9,420	-	<5.0	6.7	15,600	<50	290	-
MW-18R	D	Sep-95	-	0.0016	<0.05	-	-	<0.079	<0.1	46,600	-	<5.0	6.9	62,100	<50	60	-
MW-21	S	Sep-95	-	<0.001	<0.05	-	-	<0.01	<0.1	33,400	-	<5.0	7.1	60,100	<50	270	-
MW-22	S	Sep-95	-	<0.001	<0.025	-	-	<0.005	<0.02	10,500	-	<5.0	7.6	18,400	<50	110	-
MW-1	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	11,100	-	11	7.2	20,200	<50	<50	-
MW-3	D	Mar-96	<0.001	0.0029	<0.005	-	<0.0002	0.0086	<0.02	14,000	-	<5.0	7.3	38,500	<50	<50	-
MW-4R	S	Mar-96	<0.001	<0.001	0.011	-	<0.0002	0.047	0.038	8,200	-	<5.0	7.0	13,900	<50	170	-
MW-6R	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,600	-	<5.0	7.0	41,900	<50	<50	-
MW-7R	S	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	0.013	<0.02	6,080	-	<5.0	7.1	3,900	<50	190	-
MW-8	S	Mar-96	<0.001	<0.001	0.0078	-	<0.0002	<0.005	<0.02	8,380	-	<5.0	7.0	26,700	<50	250	-
MW-9	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	18,500	-	<5.0	7.1	50,200	<50	<50	-
MW-11	S	Mar-96	<0.001	0.0094	<0.005	-	<0.0002	<0.005	<0.02	579	-	<5.0	7.9	1,100	<50	<50	-
MW-12R	S	Mar-96	<0.001	0.0025	<0.005	-	<0.0002	<0.025	<0.02	1,450	-	<5.0	7.2	18,400	<50	59	-
MW-13	S	Mar-96	0.0098	0.015	<0.005	-	<0.0002	<0.025	<0.08	37,500	-	<5.0	6.8	59,500	<50	100	-
MW-15R2	S	Mar-96	0.0019	<0.001	<0.005	-	<0.0002	<0.025	<0.02	2,780	-	<5.0	6.9	5,500	<50	370	-
MW-15R2DUP	S	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	2,970	-	<5.0	-	-	<50	380	-
MW-16	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	14,600	-	<5.0	6.8	20,400	<50	<50	-
MW-17	S	Mar-96	0.0021	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,800	-	<5.0	7.0	7,600	<50	210	-
MW-18R	D	Mar-96	<0.001	0.0013	<0.064	-	<0.0002	0.064	<0.08	45,300	-	<5.0	6.7	68,900	<50	<50	-
MW-21	S	Mar-96	0.0051	<0.001	<0.05	-	<0.0002	<0.05	<0.08	21,900	-	<5.0	6.9	51,500	<50	590	-
MW-22	S	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	4,140	-	<5.0	7.8	15,300	<50	140	-

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015	--	0.002	0.1	11*	--	45	--	--	--	--	--	--
MW-1	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	10,400	-	<5.0	-	-	<50	<50	-
MW-3	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	13,000	-	<5.0	-	-	<50	<50	-
MW-4R	S	Sep-96	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	430	-
MW-6R	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	15,800	-	<5.0	-	-	<50	<50	-
MW-7R	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	6,900	-	5.3	-	-	<50	540	-
MW-8	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	15,200	-	7	-	-	<50	310	-
MW-9	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	14,900	-	<5.0	-	-	<50	<50	-
MW-11	S	Sep-96	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	<50	-
MW-12R	S	Sep-96	-	<0.04	<0.1	-	-	<0.08	<0.04	-	-	<5.0	-	-	<50	<50	-
MW-13	S	Sep-96	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	<50	-
MW-15R2	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	4,080	-	<5.0	-	-	<50	570	-
MW-16	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	12,000	-	<5.0	-	-	<50	<50	-
MW-16DUP	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	11,600	-	<5.0	-	-	<50	<50	-
MW-17	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	8,020	-	5.1	-	-	<50	710	-
MW-18R	D	Sep-96	-	<0.04	<0.1	-	-	<0.08	<0.04	44,400	-	<5.0	-	-	<50	<50	-
MW-21	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	27,800	-	<5.0	-	-	<50	480	-
MW-22	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	10,400	-	<5.0	-	-	<50	140	-
MW-1	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	10,400	-	<5.0	6.96	17,310	<50	<50	-
MW-3	D	Mar-97	<0.001	0.0044	<0.005	-	<0.0002	0.0092	<0.02	14,100	-	<5.0	7.19	20,300	<50	61	-
MW-4R	S	Mar-97	<0.001	0.004	<0.005	-	<0.0002	0.019	<0.02	3,210	-	<5.0	7.10	3,930	<50	360	-
MW-6R	D	Mar-97	<0.001	0.0012	<0.005	-	<0.0002	<0.005	<0.08	16,200	-	<5.0	6.83	19,500	<50	<50	-
MW-7R	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	0.013	<0.02	7,080	-	<5.0	6.83	5,380	<50	770	-
MW-8	S	Mar-97	0.0012	<0.001	<0.005	-	<0.0002	<0.005	<0.02	9,960	-	<5.0	6.98	15,400	<50	580	-
MW-9	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,300	-	<5.0	6.93	24,200	<50	<50	-
MW-9DUP	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,900	-	<5.0	-	-	<50	<50	-
MW-11	S	Mar-97	<0.001	0.0058	<0.005	-	<0.0002	0.0067	<0.02	1,480	-	<5.0	5.98	11,440	<50	210	-
MW-12R	S	Mar-97	<0.001	0.0054	<0.005	-	<0.0002	0.0091	<0.02	7,860	-	<5.0	7.02	33,400	<50	200	-
MW-13	S	Mar-97	-	-	-	-	-	-	-	-	-	-	6.94	54,000	<50	-	-
MW-15R2	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	2,970	-	<5.0	6.78	4,820	<50	730	-
MW-16	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	14,300	-	<5.0	6.90	18,200	<50	<50	-
MW-17	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,460	-	<5.0	6.91	5,190	<50	700	-
MW-18R	D	Mar-97	<0.001	<0.002	<0.01	-	<0.0002	0.065	<0.08	47,100	-	<5.0	6.89	62,100	<50	<50	-
MW-21	S	Mar-97	0.0075	<0.001	<0.005	-	<0.0002	<0.005	<0.08	30,800	-	<5.0	6.98	54,300	<50	700	-
MW-22	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	5,000	-	<5.0	7.47	9,100	<50	310	-

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
MW-1	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	9,150	-	<5.0	7.73	12,700	<50	<50	-
MW-3	D	Sep-97	-	0.01	<0.005	-	-	0.011	<0.02	13,000	-	<5.0	6.31	17,660	<50	95	-
MW-4R	S	Sep-97	-	-	-	-	-	-	-	-	-	-	6.44	8,890	-	-	-
MW-6R	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	13,300	-	<5.0	7.04	10,200	<50	<50	-
MW-7R	S	Sep-97	-	<0.001	<0.005	-	-	0.016	<0.02	7,780	-	<5.0	7.36	8,900	<50	540	-
MW-8	S	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	15,600	-	<5.0	6.89	21,800	<50	360	-
MW-9	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	15,400	-	<5.0	7.15	13,200	<50	<50	-
MW-11	S	Sep-97	-	-	-	-	-	-	-	5,300	-	-	6.44	7,410	<50	-	-
MW-12R	S	Sep-97	-	<0.005	<0.005	-	-	0.0052	<0.002	36,400	-	<5.0	6.74	46,400	<50	210	-
MW-13	S	Sep-97	-	-	-	-	-	-	-	36,400	-	-	6.14	43,000	<50	-	-
MW-15R2	S	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.002	5,560	-	<5.0	6.07	5,880	<50	620	-
MW-16	D	Sep-97	-	<0.001	<0.025	-	-	<0.005	<0.02	12,200	-	<5.0	5.93	10,190	<50	<50	-
MW-16DUP	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	13,000	-	<5.0	-	-	<50	<50	-
MW-17	S	Sep-97	-	<0.001	<0.025	-	-	<0.005	<0.02	13,000	-	<5.0	5.65	13,490	<50	960	-
MW-18R	D	Sep-97	-	0.0014	<0.1	-	-	0.078	<0.008	42,400	-	<5.0	6.21	45,000	<50	<50	-
MW-21	S	Sep-97	-	-	-	-	-	-	-	40,500	-	<5.0	7.32	42,300	<50	240	-
MW-22	S	Sep-97	-	0.011	<0.005	-	-	<0.005	<0.002	9,960	-	<5.0	8.08	13,000	<50	170	-
MW-1	D	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	9,960	-	<5.0	6.87	5,270	<50	<50	-
MW-3	D	Feb-98	-	0.0037	<.005	-	-	0.011	<0.02	12,000	-	<5.0	6.87	4,780	<50	<50	-
MW-4R	S	Feb-98	-	<0.001	<0.005	-	-	0.017	<0.02	2,350	-	<5.0	7.50	2,030	<50	220	-
MW-6R	D	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.08	12,900	-	<5.0	6.89	4,200	<50	<50	-
MW-7R	S	Feb-98	-	0.0051	0.0058	-	-	0.0097	<0.02	346	-	<5.0	8.90	307	<50	370	-
MW-8	S	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	10,700	-	8.9	7.30	6,200	<50	390	-
MW-9	D	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	13,600	-	<5.0	6.85	5,260	<50	<50	-
MW-11	S	Feb-98	-	0.0026	<0.005	-	-	<0.005	<0.02	485	-	<5.0	7.96	523	<50	140	-
MW-12R	S	Feb-98	-	0.0018	<0.005	-	-	<0.005	<0.02	1,860	-	<5.0	7.02	4,450	<50	170	-
MW-13	S	Feb-98	-	0.004	<0.025	-	-	0.068	<0.080	45,400	-	<5.0	6.66	9,880	<50	78	-
MW-15R2	S	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	2,890	-	<5.0	6.31	1,886	<50	600	-
MW-16	D	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	11,100	-	<5.0	6.72	4,530	<50	<50	-
MW-16DUP	D	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	11,400	-	<5.0	-	-	<50	<50	-
MW-17	S	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	2,260	-	<5.0	7.63	15,500	<50	170	-
MW-18R	D	Feb-98	-	<0.002	<0.025	-	-	0.029	<0.080	-	-	-	6.72	1,439	-	-	-
MW-21	S	Feb-98	-	<0.001	<0.025	-	-	0.0054	<0.080	20,900	-	6.5	6.20	10,020	<50	1,500	-
MW-22	S	Feb-98	-	<0.001	<0.005	-	-	<0.005	<0.02	5,820	-	6.4	7.51	4,190	<50	240	-
MW-1	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.66	14,760	-	<68	<68
MW-2R	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	0.048	<0.02	-	-	-	6.63	>20,000	-	<51	<51
MW-3	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	0.024	-	-	-	7.12	19,100	-	<51	<51
MW-4R	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.55	2,860	-	250 A	<63
MW-5	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.54	>20,000	-	1,200 A	1,100 A
MW-6R	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.90	17,250	-	<61	<61
MW-7R	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	0.022	<0.02	-	-	-	7.60	9,660	-	2,600 A	<52
MW-8	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.20	19,360	-	1,800 A	530 A
MW-9	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.21	>20,000	-	<65	<65
MW-11	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.05	3,120	-	68 A	<59
MW-12R	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	4.22	>20,000	-	340 A	<56
MW-13	S	Jun-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	4.86	-	-	5,700 A	2,000 A
MW-18R	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	0.044	<0.02	-	-	-	6.85	>20,000	-	160 A	160A
MW-21	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.75	>20000	-	4,700 A	250 A
MW-22	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.15	11,480	-	680 A	<52

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
MW-1	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.17	-	-	<50	<50
MW-2R	D	May-00	<0.01	<0.01	<0.003	-	<0.0002	0.031	<0.02	-	-	-	7.03	-	-	75	<50
MW-3	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.16	-	-	85 AY	<50
MW-4R	S	Jun-00	0.017	0.14	0.27	-	<0.0002	0.041	0.19	-	-	-	7.00	-	-	640AY	<50
MW-5	S	May-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.83	-	-	220 AY	120 AY
MW-6R	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.09	-	-	<50	<50
MW-7R	S	Jun-00	0.013	0.15	0.32	-	0.00028	0.055	0.08	-	-	-	7.01	-	-	5,200 AY	250 AY
MW-8	S	Jun-00	0.01	0.019	0.029	-	<0.0002	0.023	0.049	-	-	-	7.02	-	-	1,900 AY	300 AY
MW-9	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.09	-	-	<50	<50
MW-11	S	Jun-00	0.076	0.07	0.028	-	<0.0002	0.097	0.12	-	-	-	6.88	-	-	140 AY	<50
MW-12R	S	Jun-00	0.024	0.016	0.0084	-	<0.0002	0.021	0.068	-	-	-	6.64	-	-	420 AY	<50
MW-13	S	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.72	-	-	1,100 AY	380 AY
MW-18R	D	May-00	<0.01	<0.01	<0.003	-	<0.0002	0.04	<0.02	-	-	-	6.78	-	-	58 AY	<50
MW-21	S	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.29	-	-	1,600 AY	62 AY
MW-22	S	Jun-00	<0.01	<0.01	0.03	-	<0.0002	<0.02	0.041	-	-	-	7.49	8,670	-	1,200 AY	<50
MW-1	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.47	-	-	<50	-
MW-2R	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.044	<0.02	-	-	-	7.83	-	-	65 HY	<50
MW-3	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.38	-	-	<50	-
MW-4R	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.85	-	-	1400 HY	<50
MW-5	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.28	-	-	52 HY	<50
MW-5 DUP	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	-	-	-	82 HY	<50
MW-6R	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.66	-	-	<50	-
MW-7R	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.022	<0.02	-	-	-	8.47	-	-	2,000 HY	93 HY
MW-8	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.51	-	-	2,200 HY	130 HY
MW-9	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.17	-	-	<50	-
MW-11	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.022	<0.02	-	-	-	8.41	-	-	230 HY	<50
MW-12R	S	Jun-01	0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.55	-	-	490 HY	<50
MW-13	S	Jun-01	<0.01	<0.01	<0.003	-	0.0003	<0.02	<0.02	-	-	-	7.49	-	-	2,700 HY	<50
MW-18R	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.04	<0.02	-	-	-	7.53	-	-	<50	-
MW-21	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.30	-	-	4,500 HY	570 HY
MW-22	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	9.35	1,110	-	840 HY	<50
MW-1	D	Jun-02	<0.05	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.04	14,390	-	<50 s	-
MW-2R	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.081	<0.02	-	-	-	6.70	>20,000	-	<100	-
MW-3	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.015	<0.02	-	-	-	7.20	>20,000	-	88	-
MW-4R	S	Jun-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-5	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.025	<0.02	-	-	-	7.03	>20,000	-	180	-
MW-6R	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.12	17,890	-	116	-
MW-7R	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.016	<0.02	-	-	-	6.79	11,800	-	<100	-
MW-8	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.06	>20,000	-	339	-
MW-9	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.02	>20,000	-	70	-
MW-11	S	Jun-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-12R	S	Jun-02	0.014	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	6.88	>20,000	-	<100	-
MW-13	S	Jun-02	0.018	<0.01	<0.003	-	0.0003	<0.01	<0.02	-	-	-	6.80	>20,000	-	718	-
MW-18R	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.075	<0.02	-	-	-	6.79	>20,000	-	<100	-
MW-21	S	Jun-02	0.01	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.12	>20,000	-	<100	-
MW-22	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.58	15,840	-	123	-
MW-22DUP	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	-	-	-	158	-

Table 2
1993-2003 Ground Water Analytical Data by Event
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos/cm)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
MW-1	D	Jun-03	<0.005	0.031	<0.005	-	<0.0002	<0.005	0.02	-	-	-	6.98	14,800	-	-	<50 sl
MW-2R	D	Jun-03	<0.005	<0.005	<0.005	-	<0.0002	0.079	<0.01	-	-	-	6.51	>20,000	-	-	<50 sl
MW-2R(DUP)	D	Jun-03	<0.005	<0.005	<0.005	-	<0.0002	0.079	<0.01	-	-	-			-	-	<50 sl
MW-3	D	Jun-03	<0.005	0.015	<0.005	-	<0.0002	0.015	0.019	-	-	-	6.65	16,930	-	-	<50 sl
MW-4R	S	Jun-03	<0.005	0.043	0.093	-	<0.0002	0.011	0.069	-	-	-	6.67	3,610	-	-	<50
MW-5	S	Jun-03	<0.005	<0.005	<0.005	-	<0.0002	0.025	<0.01	-	-	-	6.66	>20,000	-	-	<58
MW-6R	D	Jun-03	<0.005	<0.005	<0.005	-	<0.0002	<0.005	<0.01	-	-	-	6.83	>20,000	-	-	<50 sl
MW-7R	S	Jun-03	<0.005	0.031	0.043	-	<0.0002	0.017	0.014	-	-	-	6.82	>20,000	-	-	<57
MW-8	S	Jun-03	<0.005	0.0094	<0.005	-	<0.0002	<0.005	<0.01	-	-	-	6.79	>20,000	-	-	<59
MW-9	D	Jun-03	<0.005	<0.005	<0.005	-	<0.0002	<0.005	<0.01	-	-	-	6.74	>20,000	-	-	<57
MW-11	S	Jun-03	<0.005	0.046	<0.005	-	<0.0002	0.014	0.04	-	-	-	6.46	7,080	-	-	<50
MW-12R	S	Jun-03	0.0081	<0.005	<0.005	-	<0.0002	0.0059	<0.01	-	-	-	6.64	>20,000	-	-	<50
MW-13	S	Jun-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-18R	D	Jun-03	<0.005	0.005	<0.005	-	<0.0002	0.066	0.018	-	-	-	6.50	>20,000	-	--	<50
MW-21	S	Jun-03	<0.005	<0.005	<0.005	-	<0.0002	0.0063	<0.01	-	-	-	6.88	>20,000	-	-	56 ndp
MW-22	S	Jun-03	<0.005	0.016	0.027	-	<0.0002	<0.005	0.027	-	-	-	7.26	>20,000	-	-	<58

Notes:
R - Replacement well.
S - Well screen in shallow unit.
D - Well screen in deep unit.
DUP - Duplicate sample.
"-" Analysis not performed.
SCGU - Silica Gel Cleanup
TDS - Total Dissolved Solids
TPH - Total Petroleum Hydrocarbons
µmhos/cm = Micromhos per centimeter
Y- fuel pattern does not resemble standard
H - Heavier hydrocarbons contributed to the quantitation.
s - Surrogate recovery outside acceptable range
mg/L - Milligrams per Liter
µg/L - Micrograms per Liter
MCL - Maximum Contaminant Level
PRE-CAP - Groundwater monitoring was performed before Remedial Actions were implemented.
POST-CAP - Groundwater monitoring was performed after Remedial Actions were implemented.
Bolded values represent results from the most current sampling round.
A - Sample exhibits heavier hydrocarbon pattern than indicated standard.
*California MCL has not been established; standard referenced is USEPA Region IX PRG

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
PRE-CAP																	
MW-1	D	Feb-93	<0.002	<0.002	<0.01	8.1	<0.0002	<0.005	0.02	11,700	0.5	<5.0	7.30	5,200	<50	<50	-
MW-1	D	May-93	-	-	<0.01	-	<0.0002	<0.005	0.02	-	-	<1.0	7.90	9,590	<50	<50	-
MW-1	D	Apr-94	-	-	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	7.10	17,500	<50	<50	-
POST-CAP																	
MW-1	D	Sep-94	-	<0.002	<0.005	-	<0.0002	<0.005	<0.04	13,300	-	<5.0	7.40	19,270	<50	<50	-
MW-1	D	Apr-95	0.0012	0.0072	<0.025	-	<0.0002	0.006	<0.02	10,700	-	<5.0	7.20	200,000	<50	<50	-
MW-1	D	Sep-95	-	<0.001	<0.025	-	-	<0.005	<0.02	11,000	-	<5.0	7.10	18,600	<50	<50	-
MW-1	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	11,100	-	11	7.20	20,200	<50	<50	-
MW-1	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	10,400	-	<5.0	-	-	<50	<50	-
MW-1	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	10,400	-	<5.0	6.96	17,310	<50	<50	-
MW-1	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	9,150	-	<5.0	7.73	12,700	<50	<50	-
MW-1	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.66	14,760	-	<68	<68
MW-1	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.17	-	-	<50	<50
MW-1	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.47	-	-	<50	-
MW-1	D	Jun-02	<0.05	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.04	14,390	-	<50 s	-
MW-1	**D**	**Jun-03**	**<0.005**	**0.031**	**<0.005**	**-**	**<0.0002**	**<0.005**	**0.02**	**-**	**-**	**-**	**6.98**	**14,800**	**-**	**-**	**<50 sl**
PRE-CAP																	
MW-2R	D	Feb-93	0.0011	<0.01	<0.05	20.2	0.00044	5.2	<0.02	57,700	<5	<5.0	6.50	1,990	<50	66	-
MW-2R	D	May-93	-	0.0031	<0.01	-	0.0011	0.053	<0.02	-	-	<1.0	6.70	>20,000	<50	98	-
MW-2R	D	Apr-94	-	0.0054	<0.05	-	0.00024	0.096	<0.1	-	-	<5.0	6.60	>20,000	<50	<50	-
POST-CAP																	
MW-2R	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	0.048	<0.02	-	-	-	6.63	>20,000	-	<51	<51
MW-2R	D	May-00	<0.01	<0.01	<0.003	-	<0.0002	0.031	<0.02	-	-	-	7.03	-	-	75	<50
MW-2R	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.044	<0.02	-	-	-	7.83	-	-	65 HY	<50
MW-2R	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.081	<0.02	-	-	-	6.70	>20,000	-	<100	-
MW-2R	**D**	**Jun-03**	**<0.005**	**<0.005**	**<0.005**	**-**	**<0.0002**	**0.079**	**<0.01**	**-**	**-**	**-**	**6.51**	**>20,000**	**-**	**-**	**<50 sl**
MW-2R(DUP)	**D**	**Jun-03**	**<0.005**	**<0.005**	**<0.005**	**-**	**<0.0002**	**0.079**	**<0.01**	**-**	**-**	**-**			**-**	**-**	**<50 sl**

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			**0.05**	**1.3**	**0.015**		**0.002**	**0.1**	**11***	--	**45**	--	--	--	--	--	--
PRE-CAP																	
MW-3	D	Feb-93	-	0.003	<0.005	12	<0.0002	0.0085	0.052	12,700	<0.5	<5.0	7.70	2,460	<50	71	-
MW-3	D	May-93	<0.002	0.0012	<0.01	-	<0.0002	<0.01	0.052	-	-	<1.0	7.90	11,010	<50	<50	-
MW-3	D	Apr-94	-	0.0048	<0.005	-	<0.0002	0.012	<0.1	-	-	<5.0	6.60	>20,000	<50	<50	-
POST-CAP																	
MW-3	D	Sep-94	-	0.0046	<0.005	-	<0.0002	0.012	0.024	15,600	-	<5.0	7.00	20,060	<50	56	-
MW-3	D	Apr-95	-	-	<0.025	-	<0.0002	0.01	<0.02	11,100	-	<5.0	7.20	20,500	<50	<50	-
MW-3	D	Sep-95	-	0.0022	<0.025	-	-	0.012	<0.02	13,400	-	<5.0	7.20	20,200	<50	<50	-
MW-3	D	Mar-96	<0.001	0.0029	<0.005	-	<0.0002	0.0086	<0.02	14,000	-	<5.0	7.30	38,500	<50	<50	-
MW-3	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	13,000	-	<5.0	-	-	<50	<50	-
MW-3	D	Mar-97	<0.001	0.0044	<0.005	-	<0.0002	0.0092	<0.02	14,100	-	<5.0	7.19	20,300	<50	61	-
MW-3	D	Sep-97	-	0.01	<0.005	-	-	0.011	<0.02	13,000	-	<5.0	6.31	17,660	<50	95	-
MW-3	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	0.024	-	-	-	7.12	19,100	-	<51	<51
MW-3	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.16	-	-	85 AY	<50
MW-3	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.38	-	-	<50	-
MW-3	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.015	<0.02	-	-	-	7.20	>20,000	-	88	-
MW-3	**D**	**Jun-03**	**<0.005**	**0.015**	**<0.005**	**-**	**<0.0002**	**0.015**	**0.019**	**-**	**-**	**-**	**6.65**	**16,930**	**-**	**-**	**<50 sl**
PRE-CAP																	
MW-4R	S	Feb-93	0.0014	-	<0.005	1.5	<0.0002	0.067	0.031	4,770	<0.5	<5.0	5.80	2,430	<50	290	-
MW-4R	S	May-93	-	-	<0.01	-	<0.0002	0.064	0.031	-	-	<1.0	6.90	6,180	<50	260	-
MW-4R	S	Apr-94	-	-	0.0059	-	<0.0002	0.072	0.024	-	-	<5.0	6.90	11,870	<50	1,000	-
POST-CAP																	
MW-4R	S	Sep-94	-	-	-	-	-	-	-	-	-	-	6.90	13,600	<50	-	-
MW-4R	S	Dec-94	-	0.01	<0.005	-	-	0.03	0.042	3,370	-	<5.0	-	-	<50	640	-
MW-4R	S	Apr-95	0.0013	0.011	<0.025	-	<0.0002	0.043	0.035	4,950	-	<5.0	-	-	<50	340	-
MW-4R	S	Jun-95	-	-	-	-	-	-	-	-	-	-	7.10	5,570	<50	-	-
MW-4R	S	Sep-95	-	<0.001	<0.005	-	-	0.057	<0.02	6,340	-	<5.0	7.20	10,500	-	-	-
MW-4R	S	Mar-96	<0.001	<0.001	0.011	-	<0.0002	0.047	0.038	8,200	-	<5.0	7.00	13,900	<50	170	-
MW-4R	S	Sep-96	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	430	-
MW-4R	S	Mar-97	<0.001	0.004	<0.005	-	<0.0002	0.019	<0.02	3,210	-	<5.0	7.10	3,930	<50	360	-
MW-4R	S	Sep-97	-	-	-	-	-	-	-	-	-	-	6.44	8,890	-	-	-
MW-4R	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.55	2,860	-	250 A	<63
MW-4R	S	Jun-00	0.017	0.14	0.27	-	<0.0002	0.041	0.19	-	-	-	7.00	-	-	640AY	<50
MW-4R	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.85	-	-	1400 HY	<50
MW-4R	S	Jun-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-4R	**S**	**Jun-03**	**<0.005**	**0.043**	**0.093**	**-**	**<0.0002**	**0.011**	**0.069**	**-**	**-**	**-**	**6.67**	**3,610**	**-**	**-**	**<50**

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
PRE-CAP																	
MW-5	S	Feb-93	0.0012	<0.01	<0.05	7.9	<0.0002	<0.04	<0.02	52,900	<5	<5.0	6.40	1,816	<50	<50	-
MW-5	S	May-93	<.001	<.001	<0.05	-	<0.0002	0.022	<0.02	-	-	<1.0	7.70	>20,000	<50	<50	-
MW-5	S	Apr-94	<0.001	0.0027	<0.005	-	<0.0002	0.035	<0.1	-	-	<5.0	6.60	>20,000	<50	<50	-
POST-CAP																	
MW-5	S	Sep-94	<0.001	<0.001	<0.025	-	<0.0002	0.058	<0.1	55,100	-	<5.0	6.60	>20,000	<50	<50	-
MW-5	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.54	>20,000	-	1,200 A	1,100 A
MW-5	S	May-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.83	-	-	220 AY	120 AY
MW-5	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.28	-	-	52 HY	<50
MW-5 DUP	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.28	-	-	82 HY	<50
MW-5	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.025	<0.02	-	-	-	7.03	>20,000	-	180	-
MW-5	**S**	**Jun-03**	**<0.005**	**<0.005**	**<0.005**	**-**	**<0.0002**	**0.025**	**<0.01**	**-**	**-**	**-**	**6.66**	**>20,000**	**-**	**-**	**<58**
POST-CAP																	
MW-6R	D	Oct-94	<0.001	0.003	<0.01	-	<0.0002	0.0066	<0.04	17,400	-	<5.0	7.40	19,000	<50	<50	-
MW-6R	D	Apr-95	<0.001	<0.002	<0.025	-	<0.0002	0.0058	<0.02	7,500	-	<5.0	7.40	24,300	<50	<50	-
MW-6R	D	Sep-95	-	<0.001	<0.025	-	-	0.0065	<0.02	19,900	-	<5.0	7.50	25,300	<50	<50	-
MW-6R	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,600	-	<5.0	7.00	41,900	<50	<50	-
MW-6R	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	15,800	-	<5.0	-	-	<50	<50	-
MW-6R	D	Mar-97	<0.001	0.0012	<0.005	-	<0.0002	<0.005	<0.08	16,200	-	<5.0	6.83	19,500	<50	<50	-
MW-6R	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	13,300	-	<5.0	7.04	10,200	<50	<50	-
MW-6R	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.90	17,250	-	<61	<61
MW-6R	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.09	-	-	<50	<50
MW-6R	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.66	-	-	<50	-
MW-6R	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.12	17,890	-	116	-
MW-6R	**D**	**Jun-03**	**<0.005**	**<0.005**	**<0.005**	**-**	**<0.0002**	**<0.005**	**<0.01**	**-**	**-**	**-**	**6.83**	**>20,000**	**-**	**-**	**<50 sl**

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
PRE-CAP																	
MW-7R	S	Feb-93	0.0012	0.0015	0.0051	0.78	<0.0002	0.013	0.046	993	<0.05	<5.0	7.70	330	<50	490	-
MW-7R	S	May-93	<0.002	<0.001	<0.001	-	<0.0002	0.023	<0.005	-	-	1	7.50	2,990	<50	240	-
MW-7RDUP	S	May-93	<0.001	<0.001	<0.01	-	<0.0002	0.016	<0.02	-	-	<5.0	-	-	<50	360	-
MW-7R	S	Apr-94	0.0012	0.0031	<0.01	-	<0.0002	0.02	0.023	-	-	<5.0	7.00	5,810	<50	1,100	-
POST-CAP																	
MW-7R	S	Sep-94	0.0042	0.0034	0.052	-	<0.0002	0.015	<0.02	6,530	-	5.9	7.00	8,350	<50	1,500	-
MW-7R	S	Dec-94	-	0.019	0.0056	-	-	0.021	0.035	383	-	<5.0	-	-	<50	2,000	-
MW-7R	S	Apr-95	0.0011	0.002	<0.005	-	<0.0002	0.029	0.25	13,600	-	<5.0	-	-	<50	1,500	-
MW-7R	S	Jun-95	-	0.0017	<0.005	-	-	0.017	<0.02	4,520	-	<5.0	7.00	5,560	<50	370	-
MW-7R	S	Sep-95	-	0.0061	<0.005	-	-	0.014	<0.02	7,040	-	<5.0	6.80	8,600	<50	280	-
MW-7R	S	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	0.013	<0.02	6,080	-	<5.0	7.10	3,900	<50	190	-
MW-7R	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	6,900	-	5.3	-	-	<50	540	-
MW-7R	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	0.013	<0.02	7,080	-	<5.0	6.83	5,380	<50	770	-
MW-7R	S	Sep-97	-	<0.001	<0.005	-	-	0.016	<0.02	7,780	-	<5.0	7.36	8,900	<50	540	-
MW-7R	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	0.022	<0.02	-	-	-	7.60	9,660	-	2,600 A	<52
MW-7R	S	Jun-00	0.013	0.15	0.32	-	0.00028	0.055	0.08	-	-	-	7.01	-	-	5,200 AY	250 AY
MW-7R	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.022	<0.02	-	-	-	8.47	-	-	2,000 HY	93 HY
MW-7R	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.016	<0.02	-	-	-	6.79	11,800	-	<100	-
MW-7R	**S**	**Jun-03**	**<0.005**	**0.031**	**0.043**	**-**	**<0.0002**	**0.017**	**0.014**	**-**	**-**	**-**	**6.82**	**>20,000**	**-**	**-**	**<57**
PRE-CAP																	
MW-8	S	Feb-93	0.0014	<0.001	<0.001	11.3	<0.0002	<0.005	0.027	8,400	<0.5	<5.0	6.20	1,133	<50	240	-
MW-8	S	May-93	<0.001	<0.001	<0.01	-	<0.0002	<0.005	<0.02	-	-	<1.0	7.20	9,260	<50	140	-
MW-8	S	Apr-94	0.0012	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	6.70	15,800	<50	280	-
MW-8DUP	S	Apr-94	0.0014	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	-	-	<50	440	-
POST-CAP																	
MW-8	S	Sep-94	0.016	<0.001	<0.025	-	<0.0002	<0.005	<0.02	19,700	-	5.2	7.00	31,100	<50	180	-
MW-8DUP	S	Sep-94	0.014	<0.001	<0.01	-	<0.0002	<0.01	<0.02	18,200	-	<5.0	-	-	<50	190	-
MW-8	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	0.043	8,720	-	<5.0	-	-	<50	1,500	-
MW-8	S	Apr-95	0.0027	<0.001	<0.025	-	<0.0002	<0.005	<0.02	755	-	<5.0	-	-	<50	530	-
MW-8	S	Jun-95	-	<0.001	<0.005	-	-	<0.005	<0.02	11,600	-	<5.0	7.00	17,100	<50	210	-
MW-8DUP	S	Jun-95	-	0.0022	<0.005	-	-	<0.005	<0.02	10,700	-	<5.0	-	-	<50	310	-
MW-8	S	Sep-95	-	<0.001	<0.025	-	-	<0.025	<0.02	16,600	-	<5.0	7.10	27,100	<50	140	-
MW-8	S	Mar-96	<0.001	<0.001	0.0078	-	<0.0002	<0.005	<0.02	8,380	-	<5.0	7.00	26,700	<50	250	-
MW-8	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	15,200	-	7	-	-	<50	310	-
MW-8	S	Mar-97	0.0012	<0.001	<0.005	-	<0.0002	<0.005	<0.02	9,960	-	<5.0	6.98	15,400	<50	580	-
MW-8	S	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	15,600	-	<5.0	6.89	21,800	<50	360	-
MW-8	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.20	19,360	-	1,800 A	530 A
MW-8	S	Jun-00	0.01	0.019	0.029	-	<0.0002	0.023	0.049	-	-	-	7.02	-	-	1,900 AY	300 AY
MW-8	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.51	-	-	2,200 HY	130 HY

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			**0.05**	**1.3**	**0.015**		**0.002**	**0.1**	**11***	--	**45**	--	--	--	--	--	--
MW-8	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.06	>20,000	-	339	-
MW-8	**S**	**Jun-03**	**<0.005**	**0.0094**	**<0.005**	-	**<0.0002**	**<0.005**	**<0.01**	-	-	-	**6.79**	**>20,000**	-	-	**<59**

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			**0.05**	**1.3**	**0.015**		**0.002**	**0.1**	**11[a]**	--	**45**	--	--	--	--	--	--
PRE-CAP																	
MW-9	D	Feb-93	<0.001	<0.001	<0.005	8.1	<0.0002	<0.005	0.029	16,200	<0.5	<5.0	6.80	2,960	<50	<50	-
MW-9DUP	D	Feb-93	<0.001	<0.001	<0.005	8.3	<0.0002	<0.005	<0.02	14,600	5.2	<5.0	-	-	<50	<50	-
MW-9	D	May-93	<0.002	0.0015	<0.01	-	<0.0002	<0.01	<0.02	-	-	<1.0	7.60	10,740	<50	<50	-
MW-9	D	Apr-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	6.30	>20,000	<50	<50	-
POST-CAP																	
MW-9	D	Sep-94	<0.001	<0.002	<0.005	-	<0.0002	<0.005	<0.02	20,200	-	-	7.10	25,900	<50	<50	-
MW-9	D	Apr-95	<0.001	<0.001	<0.025	-	<0.0002	<0.005	<0.1	13,000	-	20	6.80	24,800	<50	<50	-
MW-9	D	Sep-95	-	<0.001	<0.025	-	-	<0.005	<0.02	18,600	-	<5.0	7.00	24,800	<50	<50	-
MW-9	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	18,500	-	<5.0	7.10	50,200	<50	<50	-
MW-9	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	14,900	-	<5.0	-	-	<50	<50	-
MW-9	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,300	-	<5.0	6.93	24,200	<50	<50	-
MW-9DUP	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,900	-	<5.0	-	-	<50	<50	-
MW-9	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	15,400	-	<5.0	7.15	13,200	<50	<50	-
MW-9	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.21	>20,000	-	<65	<65
MW-9	D	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.09	-	-	<50	<50
MW-9	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.17	-	-	<50	NA
MW-9	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.02	>20,000	-	70	-
MW-9	**D**	**Jun-03**	**<0.005**	**<0.005**	**<0.005**	**-**	**<0.0002**	**<0.005**	**<0.01**	**-**	**-**	**-**	**6.74**	**>20,000**	**-**	**-**	**<57**
PRE-CAP																	
MW-11	S	Feb-93	<0.001	<0.001	<0.005	0.68	<0.0002	0.0086	<0.02	861	0.53	<5.0	7.10	856	<50	<50	-
MW-11	S	May-93	<0.002	0.0028	<0.005	-	<0.0002	0.016	<0.02	-	-	-	8.20	4,850	<50	<50	-
MW-11	S	Apr-94	<0.001	0.004	<0.005	-	<0.0002	0.013	<0.02	-	-	<5.0	7.20	3,610	<50	170	-
POST-CAP																	
MW-11	S	Sep-94	-	-	-	-	-	-	-	-	-	<5.0	7.50	11,170	<50	-	-
MW-11	S	Dec-94	-	0.003	<0.005	-	-	0.0088	<0.02	778	-	<5.0	-	-	<50	220	-
MW-11	S	Apr-95	0.0014	0.0091	<0.05	-	<0.0002	0.0088	<0.02	982	-	<5.0	-	-	<50	<50	-
MW-11	S	Jun-95	-	-	-	-	-	-	-	-	-	<5.0	7.00	3,820	-	89	-
MW-11	S	Sep-95	-	<0.001	<0.005	-	-	0.018	<0.02	-	-	<5.0	6.70	9,300	-	-	-
MW-11	S	Mar-96	<0.001	0.0094	<0.005	-	<0.0002	<0.005	<0.02	579	-	<5.0	7.90	1,100	<50	<50	-
MW-11	S	Sep-96	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	<50	-
MW-11	S	Mar-97	<0.001	0.0058	<0.005	-	<0.0002	0.0067	<0.02	1,480	-	<5.0	5.98	11,440	<50	210	-
MW-11	S	Sep-97	-	-	-	-	-	-	-	5,300	-	-	6.44	7,410	<50	-	-
MW-11	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.05	3,120	-	68 A	<59
MW-11	S	Jun-00	0.076	0.07	0.028	-	<0.0002	0.097	0.12	-	-	-	6.88	-	-	140 AY	<50
MW-11	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.022	<0.02	-	-	-	8.41	-	-	230 HY	<50
MW-11	S	Jun-02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-11	**S**	**Jun-03**	**<0.005**	**0.046**	**<0.005**	**-**	**<0.0002**	**0.014**	**0.04**	**-**	**-**	**-**	**6.46**	**7,080**	**-**	**-**	**<50**

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015	--	0.002	0.1	11*	--	45	--	--	--	--	--	--
PRE-CAP																	
MW-12R	S	Feb-93	0.0018	0.0045	<0.005	0.91	<0.0002	<0.005	<0.02	1,900	<0.5	<5.0	6.00	1,593	<50	<50	-
MW-12R	S	May-93	0.0035	<0.001	0.02	-	<0.0002	<0.02	<0.02	-	-	<1.0	6.00	>20,000	<50	300	-
MW-12R	S	Apr-94	0.0012	0.0017	<0.005	-	<0.0002	0.024	<0.02	-	-	<5.0	6.20	>20,000	<50	320	-
POST-CAP																	
MW-12R	S	Sep-94	0.021	<0.001	<0.025	-	<0.0002	<0.01	<0.04	42,700	-	-	6.80	59,300	<50	-	-
MW-12R	S	Dec-94	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	760	-
MW-12R	S	Apr-95	0.0053	<0.001	<0.025	-	<0.0002	0.0053	<0.1	13,600	-	<5.0	-	-	<50	230	-
MW-12R	S	Jun-95	-	-	-	-	-	-	-	-	-	-	6.80	39,400	<50	160	-
MW-12R	S	Sep-95	-	<0.001	<0.05	-	-	<0.025	<0.1	38,800	-	<5.0	7.00	57,100	<50	-	-
MW-12R	S	Mar-96	<0.001	0.0025	<0.005	-	<0.0002	<0.025	<0.02	1,450	-	<5.0	7.20	18,400	<50	59	-
MW-12R	S	Sep-96	-	<0.04	<0.1	-	-	<0.08	<0.04	-	-	<5.0	-	-	<50	<50	-
MW-12R	S	Mar-97	<0.001	0.0054	<0.005	-	<0.0002	0.0091	<0.02	7,860	-	<5.0	7.02	33,400	<50	200	-
MW-12R	S	Sep-97	-	<0.005	<0.005	-	-	0.0052	<0.002	36,400	-	<5.0	6.74	46,400	<50	210	-
MW-12R	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	4.22	>20,000	-	340 A	<56
MW-12R	S	Jun-00	0.024	0.016	0.0084	-	<0.0002	0.021	0.068	-	-	-	6.64	-	-	420 AY	<50
MW-12R	S	Jun-01	0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.55	-	-	490 HY	<50
MW-12R	S	Jun-02	0.014	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	6.88	>20,000	-	<100	-
MW-12R	**S**	**Jun-03**	**0.0081**	**<0.005**	**<0.005**	**-**	**<0.0002**	**0.0059**	**<0.01**	**-**	**-**	**-**	**6.64**	**>20,000**	**-**	**-**	**<50**
PRE-CAP																	
MW-13	S	Feb-93	-	-	-	-	-	-	-	-	-	-	-	-	-	66	-
MW-13	S	May-93	<0.01	0.02	<0.04	-	<0.0002	0.025	<0.02	-	-	<1.0	7.50	>20,000	<50	<50	-
MW-13	S	Apr-94	-	-	-	-	-	-	-	-	-	<5.0	6.60	>20,000	<50	290	-
POST-CAP																	
MW-13	S	Sep-94	0.021	0.0032	<0.025	-	<0.0002	0.012	0.077	39,900	-	<5.0	6.50	57,800	<50	-	-
MW-13	S	Dec-94	-	0.0032	<0.025	-	-	0.012	0.077	-	-	<5.0	-	-	<50	860	-
MW-13	S	Apr-95	0.0056	0.0068	<0.025	-	<0.0002	0.028	<0.1	30,400	-	<5.0	-	-	<50	-	-
MW-13	S	Jun-95	-	-	-	-	-	-	-	-	-	-	6.80	52,200	<50	-	-
MW-13	S	Sep-95	-	<0.005	<0.025	-	-	<0.05	<0.1	35,200	-	<5.0	6.70	56,100	<50	390	-
MW-13	S	Mar-96	0.0098	0.015	<0.005	-	<0.0002	<0.025	<0.08	37,500	-	<5.0	6.80	59,500	<50	100	-
MW-13	S	Sep-96	-	-	-	-	-	-	-	-	-	<5.0	-	-	<50	<50	-
MW-13	S	Mar-97	-	-	-	-	-	-	-	-	-	-	6.94	54,000	<50	-	-
MW-13	S	Sep-97	-	-	-	-	-	-	-	36,400	-	-	6.14	43,000	<50	-	-
MW-13	S	Jun-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	4.86	-	-	5,700 A	2,000 A
MW-13	S	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	6.72	-	-	1,100 AY	380 AY
MW-13	S	Jun-01	<0.01	<0.01	<0.003	-	0.0003	<0.02	<0.02	-	-	-	7.49	-	-	2,700 HY	<50
MW-13	S	Jun-02	0.018	<0.01	<0.003	-	0.0003	<0.01	<0.02	-	-	-	6.80	>20,000	-	718	-
MW-13	S	Jun-03	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
POST-CAP																	
MW-15R2	S	Sep-94	0.019	0.0015	<0.005	-	<0.0002	<0.005	<0.02	11,000	-	<5.0	6.90	18,220	<50	280	-
MW-15R2	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	<0.02	4,830	-	<5.0	-	-	78	1,900	-
MW-15R2DUP	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	<0.02	4,980	-	<5.0	-	-	80	2,200	-
MW-15R2	S	Apr-95	0.0024	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,420	-	<5.0	-	-	<50	1,800	-
MW-15RDUP	S	Apr-95	0.0016	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,480	-	<5.0	-	-	<50	1,600	-
MW-15R2	S	Jun-95	-	0.0021	<0.005	-	-	<0.005	<0.02	4,260	-	<5.0	6.80	6,240	<50	490	-
MW-15R2	S	Sep-95	-	<0.001	<0.005	-	-	<0.025	<0.02	7,020	-	<5.0	6.80	11,400	<50	260	-
MW-15R2	S	Mar-96	0.0019	<0.001	<0.005	-	<0.0002	<0.025	<0.02	2,780	-	<5.0	6.90	5,500	<50	370	-
MW-15R2DUP	S	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	2,970	-	<5.0	-	-	<50	380	-
MW-15R2	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	4,080	-	<5.0	-	-	<50	570	-
MW-15R2	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	2,970	-	<5.0	6.78	4,820	<50	730	-
MW-15R2	S	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.002	5,560	-	<5.0	6.07	5,880	<50	620	-
PRE-CAP																	
MW-16	D	Feb-93	<0.001	<0.001	<0.01	7.3	<0.0002	<0.005	0.02	12,700	<0.5	<5.0	6.40	1,646	<50	<50	-
MW-16	D	May-93	<0.002	<0.001	<0.1	-	<0.0002	<0.005	0.02	-	-	<1.0	6.60	15,310	<50	<50	-
MW-16	D	Apr-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	7.00	19,100	<50	<50	-
POST-CAP																	
MW-16	D	Sep-94	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	16,800	-	<5.0	6.90	19,800	<50	<50	-
MW-16	D	Apr-95	<0.001	<0.001	<0.025	-	<0.0002	<0.005	<0.1	10,300	-	<5.0	6.90	19,400	<50	<50	-
MW-16	D	Sep-95	-	0.0084	<0.005	-	-	<0.005	<0.02	13,700	-	<5.0	7.10	19,500	<50	<50	-
MW-16DUP	D	Sep-95	-	<0.001	<0.005	-	-	<0.005	<0.02	13,200	-	<5.0	-	-	<50	<50	-
MW-16	D	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	14,600	-	<5.0	6.80	20,400	<50	<50	-
MW-16	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	12,000	-	<5.0	-	-	<50	<50	-
MW-16DUP	D	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	11,600	-	<5.0	-	-	<50	<50	-
MW-16	D	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	14,300	-	<5.0	6.90	18,200	<50	<50	-
MW-16	D	Sep-97	-	<0.001	<0.025	-	-	<0.005	<0.02	12,200	-	<5.0	5.93	10,190	<50	<50	-
MW-16DUP	D	Sep-97	-	<0.001	<0.005	-	-	<0.005	<0.02	13,000	-	<5.0	-	-	<50	<50	-

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
PRE-CAP																	
MW-17	S	Feb-93	0.0023	<0.002	<0.001	0.84	<0.0002	<0.005	<0.02	6,390	<0.5	<5.0	6.90	693	<50	270	-
MW-17	S	May-93	<0.002	<0.001	<0.01	-	<0.0002	<0.01	0.02	-	-	5.3	6.40	10,090	<50	260	-
MW-17	S	Apr-94	0.003	<0.001	<0.005	-	<0.0002	<0.005	<0.02	-	-	<5.0	6.50	10,015	<50	740	-
POST-CAP																	
MW-17	S	Sep-94	0.0057	<0.001	<0.005	-	<0.0002	<0.005	<0.02	18,600	-	<5.0	6.90	25,600	<50	740	-
MW-17	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	0.024	5,820	-	<5.0	-	-	<50	1,600	-
MW-17	S	Apr-95	0.0024	<0.001	<0.005	-	<0.0002	<0.005	<0.02	4,250	-	<5.0	-	-	<50	1,500	-
MW-17	S	Jun-95	-	<0.001	<0.005	-	-	<0.005	<0.02	3,610	-	<5.0	6.80	5,160	<50	420	-
MW-17	S	Sep-95	-	<0.001	<0.025	-	-	<0.01	<0.02	9,420	-	<5.0	6.70	15,600	<50	290	-
MW-17	S	Mar-96	0.0021	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,800	-	<5.0	7.00	7,600	<50	210	-
MW-17	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	8,020	-	5.1	-	-	<50	710	-
MW-17	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	3,460	-	<5.0	6.91	5,190	<50	700	-
MW-17	S	Sep-97	-	<0.001	<0.025	-	-	<0.005	<0.02	13,000	-	<5.0	5.65	13,490	<50	960	-
PRE-CAP																	
MW-18R	D	Feb-93	<0.002	<0.002	<0.025	22.9	<0.0002	0.07	0.23	44,600	<50	<5.0	6.60	1,622	<50	<50	-
MW-18R	D	May-93	-	<0.001	<0.1	-	<0.0002	0.071	<0.02	-	-	<1.0	7.50	>20,000	<50	<50	-
MW-18R	D	Apr-94	<0.001	0.0039	<0.005	-	<0.0002	0.073	<0.1	-	-	<5.0	6.90	>20,000	<50	<50	-
POST-CAP																	
MW-18R	D	Sep-94	<0.001	0.0032	<0.025	-	<0.0002	0.068	<0.1	49,500	-	<5.0	6.80	64,700	<50	<50	-
MW-18R	D	Apr-95	<0.001	<0.002	<0.05	-	<0.0002	0.074	<0.1	39,500	-	<5.0	6.90	63,200	<50	<50	-
MW-18R	D	Sep-95	-	0.0016	<0.05	-	-	<0.079	<0.1	46,600	-	<5.0	6.90	62,100	<50	60	-
MW-18R	D	Mar-96	<0.001	0.0013	<0.064	-	<0.0002	0.064	<0.08	45,300	-	<5.0	6.70	68,900	<50	<50	-
MW-18R	D	Sep-96	-	<0.04	<0.1	-	-	<0.08	<0.04	44,400	-	<5.0	-	-	<50	<50	-
MW-18R	D	Mar-97	<0.001	<0.002	<0.01	-	<0.0002	0.065	<0.08	47,100	-	<5.0	6.89	62,100	<50	<50	-
MW-18R	D	Sep-97	-	0.0014	<0.1	-	-	0.078	<0.008	42,400	-	<5.0	6.21	45,000	<50	<50	-
MW-18R	D	May-99	<0.01	<0.01	<0.003	-	<0.0002	0.044	<0.02	-	-	-	6.85	>20,000	-	160 A	160A
MW-18R	D	May-00	<0.01	<0.01	<0.003	-	<0.0002	0.04	<0.02	-	-	-	6.78	-	-	58 AY	<50
MW-18R	D	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	0.04	<0.02	-	-	-	7.53	-	-	<50	NA
MW-18R	D	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	0.075	<0.02	-	-	-	6.79	>20,000	-	<100	-
MW-18R	**D**	**Jun-03**	**<0.005**	**0.005**	**<0.005**	**-**	**<0.0002**	**0.066**	**0.018**	**-**	**-**	**-**	**6.50**	**>20,000**	**-**	**--**	**<50**

Table 3
1993-2003 Ground Water Analytical Data by Well
Liquid Gold Site
Richmond, California

Well	Well Depth	Sampling Date	Chromium (mg/L)	Copper (mg/L)	Lead (mg/L)	Manganese (mg/L)	Mercury (mg/L)	Nickel (mg/L)	Zinc (mg/L)	TDS (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH	Specific Conductivity (µmhos)	TPH Gas (µg/L)	TPH Diesel (µg/L)	TPH Diesel (SGCU) (µg/L)
California MCL			0.05	1.3	0.015		0.002	0.1	11*	--	45	--	--	--	--	--	--
POST-CAP																	
MW-21	S	Sep-94	0.004	0.002	<0.025	-	<0.0002	0.03	0.08	32,900	-	<5.0	7.00	>20,000	<50	420	-
MW-21	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	<0.02	26,600	-	<5.0	-	-	<50	1,000	-
MW-21	S	Apr-95	0.0048	<0.001	<0.025	-	<0.0002	0.011	<0.1	28,500	-	<5.0	-	-	<50	880	-
MW-21	S	Jun-95	-	-	-	-	-	-	-	-	-	-	7.00	51,700	<50	290	-
MW-21	S	Sep-95	-	<0.001	<0.05	-	-	<0.01	<0.1	33,400	-	<5.0	7.10	60,100	<50	270	-
MW-21	S	Mar-96	0.0051	<0.001	<0.05	-	<0.0002	<0.05	<0.08	21,900	-	<5.0	6.90	51,500	<50	590	-
MW-21	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	27,800	-	<5.0	-	-	<50	480	-
MW-21	S	Mar-97	0.0075	<0.001	<0.005	-	<0.0002	<0.005	<0.08	30,800	-	<5.0	6.98	54,300	<50	700	-
MW-21	S	Sep-97	-	-	-	-	-	-	-	40,500	-	<5.0	7.32	42,300	<50	240	-
MW-21	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.75	>20000	-	4,700 A	250 A
MW-21	S	Jun-00	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	7.29	-	-	1,600 AY	62 AY
MW-21	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	8.30	-	-	4,500 HY	570 HY
MW-21	S	Jun-02	0.01	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.12	>20,000	-	<100	-
MW-21	**S**	**Jun-03**	**<0.005**	**<0.005**	**<0.005**	**-**	**<0.0002**	**0.0063**	**<0.01**	**-**	**-**	**-**	**6.88**	**>20,000**	**-**	**-**	**56 ndp**
POST-CAP																	
MW-22	S	Sep-94	0.0039	0.013	0.059	-	<0.0002	<0.005	0.043	11,300	-	<5.0	7.20	16,330	<50	330	-
MW-22	S	Dec-94	-	<0.001	<0.005	-	-	<0.005	0.048	5,170	-	<5.0	-	-	<50	350	-
MW-22	S	Apr-95	<0.001	<0.001	<0.005	-	<0.0002	<0.005	0.025	5,040	-	<5.0	-	-	<50	380	-
MW-22	S	Jun-95	-	<0.001	<0.005	-	-	<0.005	<0.02	7,280	-	<5.0	7.60	9,770	<50	340	-
MW-22	S	Sep-95	-	<0.001	<0.025	-	-	<0.005	<0.02	10,500	-	<5.0	7.60	18,400	<50	110	-
MW-22	S	Mar-96	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	4,140	-	<5.0	7.80	15,300	<50	140	-
MW-22	S	Sep-96	-	<0.02	<0.05	-	-	<0.04	<0.02	10,400	-	<5.0	-	-	<50	140	-
MW-22	S	Mar-97	<0.001	<0.001	<0.005	-	<0.0002	<0.005	<0.02	5,000	-	<5.0	7.47	9,100	<50	310	-
MW-22	S	Sep-97	-	0.011	<0.005	-	-	<0.005	<0.002	9,960	-	<5.0	8.08	13,000	<50	170	-
MW-22	S	May-99	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	5.15	11,480	-	680 A	<52
MW-22	S	Jun-00	<0.01	<0.01	0.03	-	<0.0002	<0.02	0.041	-	-	-	7.49	8,670	-	1,200 AY	<50
MW-22	S	Jun-01	<0.01	<0.01	<0.003	-	<0.0002	<0.02	<0.02	-	-	-	9.35	1,110	-	840 HY	<50
MW-22	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.58	15,840	-	123	-
MW-22DUP	S	Jun-02	<0.005	<0.01	<0.003	-	<0.0002	<0.01	<0.02	-	-	-	7.58	15,840	-	158	-
MW-22	**S**	**Jun-03**	**<0.005**	**0.016**	**0.027**	**-**	**<0.0002**	**<0.005**	**0.027**	**-**	**-**	**-**	**7.26**	**>20,000**	**-**	**-**	**<58**

Notes:

R - Replacement well.
S - Well screen in shallow unit.
D - Well screen in deep unit.
DUP - Duplicate sample.
"-" Analysis not performed.
SCGU - Silica Gel Cleanup
ndp - Diesel analytical chromatogram exhibits non-diesel pattern
TDS - Total Dissolved Solids
TPH - Total Petroleum Hydrocarbons
µmhos = Microholms
s - Surrogate recovery outside acceptable range
sl - Surrogate recovery outside acceptable limits due to matrix interference; confirmed by reanalysis
Y- fuel pattern does not resemble standard
mg/L - Milligrams per Liter
µg/L - Micrograms per Liter
MCL - Maximum Contaminant Level
*California MCL has not been established; standard referenced is USEPA Region IX PRG
PRE-CAP - Groundwater monitoring was performed before Remedial Actions were implemented.
POST-CAP - Groundwater monitoring was performed after Remedial Actions were implemented.
H - Heavier hydrocarbons contributed to the quantitation.
A - Sample exhibits heavier hydrocarbon pattern than indicated standard.

Appendix A
Historical Groundwater Analytical Data
(1998-1992)

Table 18
Groundwater Analytical Results 1988-1992
Liquid Gold Site, Richmond, California
K/J 855018.14

Well[1]	Well Depth[2]	Sampling Date	Chromium[3] (mg/L)	Copper[3] (mg/L)	Lead[3] (mg/L)	Manganese[3] (mg/L)	Mercury[3] (mg/L)	Nickel[3] (mg/L)	Zinc[3] (mg/L)	TDS[4] (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH (units)	Specific Conductivity (umhos/cm)	Coliform[5]	TPH[6] Gas (mg/L)	TPH[6] Diesel (mg/L)
MW-01	D	Nov88	0.024	<0.008	<0.010	9.100	<0.0002	0.02	0.003	12000	<0.03	<2.00	7.6	33000	<5.0	<0.06	<0.06
MW-01DUP	D	Nov88	0.026	0.006	<0.010	9.600	<0.0002	0.03	<0.003	12000	<0.03	<2.00	7.6	33000	<5.0	<0.06	<0.06
MW-01	D	Jan89	<0.001	<0.005	<0.010	10.000	<0.0002	<0.01	0.005	11000	<0.03	<2.00	6.9	15000	17.0	<0.05	<0.05
MW-01	D	Apr89	<0.001	<0.005	<0.010	10.000	<0.0002	<0.01	<0.020	12000	0.07	<2.00	7.0	27000	300.0	<0.05	<0.05
MW-01	D	Jul89	0.018	<0.005	<0.009	8.300	<0.0002	<0.01	0.020	12000	0.08	<5.00	7.0	20000	2.0	<0.05	<0.05
MW-01DUP	D	Jul89	0.025	<0.005	<0.009	8.500	<0.0002	<0.01	<0.020	12000	0.09	<5.00	7.0	20000	<2.0	<0.05	<0.05
MW-01	D	Oct89	<0.001	0.048	<0.010	9.600	<0.0002	0.03	<0.020	13000	0.04	<5.00	7.0	17000	170.0	<0.05	<0.05
MW-01	D	Oct90	<0.005	<0.006	<0.003	9.400	<0.0002	0.01	<0.020	11000	0.03	<5.00	7.0	19000	36.0	<0.05	<0.05
MW-01	D	Feb91	<0.010	<0.020	<0.0500	8.700	<0.0002	<0.04	0.028	12200	<0.50	<5.00	7.0	18970	4.0	<0.50	<0.050
MW-01	D	May91	<0.0010	<0.002	<0.0100	8.300	<0.0200	<0.005	<0.020	11500	<0.50	6.70	7.2	11120	<2.0	<0.050	<0.050
MW-01	D	Aug91	<0.0010	0.0027	<0.0200	9.200	<0.0004	<0.005	<0.020	11700	<0.50	20.00	7.2	18300	<2.0	<0.050	<0.050
MW-01	D	Nov91	<0.0010	0.0052	<0.1000	12.200	<0.0002	<0.005	<0.080	12300	<0.50	<5.00	7.1	15430	<2.0	<0.050	<0.050
MW-01	D	Feb92	<0.0010	0.013	<0.0050	8.200	<0.0002	<0.005	<0.020	12000	<5.00	<5.00	6.9	1530	170.0	<0.050	0.0520
MW-01	D	May92	<0.0010	0.0044	<0.0050	8.1	<0.0002	<0.005	<0.020	12200	<0.05	<5.00	6.9	1584	11.0	<50.00	<50.00
MW-01	D	Aug92	<0.0010	0.029	<0.02	9.3	<0.0002	<0.005	<0.10	12000	<5.00	<5.00	6.8	19630	<2.0	<50.00	<50.00
MW-02	D	Oct88	<0.001	0.030	<0.010	34.000	<0.0002	0.05	0.220	54000	0.41	<2.00	6.6	98000	<2.2	<0.05	<0.05
MW-02	D	Jan89	<0.001	0.007	<0.010	31.000	<0.0002	0.06	0.012	53000	<0.15	<2.00	6.5	50000	4.0	<0.05	<0.05
MW-02	D	Apr89	0.004	0.008	<0.010	34.000	0.0006	0.05	0.035	54000	0.65	<2.00	6.7	38000	<2.0	<0.05	<0.05

Table 16
Groundwater Analytical Results 1988-1992
Liquid Gold Site, Richmond, California
K/J 855018.14

Well[1]	Well Depth[2]	Sampling Date	Chromium[3] (mg/L)	Copper[3] (mg/L)	Lead[3] (mg/L)	Manganese[3] (mg/L)	Mercury[3] (mg/L)	Nickel[3] (mg/L)	Zinc[3] (mg/L)	TDS[4] (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH (units)	Specific Conductivity (umhos/cm)	Coliform[5]	TPH[6] Gas (mg/L)	TPH[6] Diesel (mg/L)
MW-02	D	Jul89	0.038	<0.006	<0.009	25.000	0.0018	0.02	<0.020	55000	0.15	<5.00	6.7	67000	<2.0	<0.05	<0.05
MW-02	D	Oct89	<0.001	0.009	<0.010	3.200	0.0022	0.05	0.030	56000	<0.02	<5.00	6.5	55000	<2.0	<0.05	<0.05
MW-02	D	Oct90	<0.005	<0.006	<0.012	29.000	<0.0002	0.06	<0.020	54000	0.58	<5.00	6.9	66000	<2.0	<0.05	<0.05
MW-02DUP	D	Oct90	<0.005	<0.006	<0.012	28.000	0.0006	0.07	<0.020	56000	0.49	<5.00	6.8	67000	<2.0	<0.05	<0.05
MW-02	D	Feb91	<0.050	<0.1	<0.25	27.000	<0.0002	<0.2	<0.1	79800	<0.50	5.70	6.5	<20000	130.0	<0.50	<0.050
MW-02	D	May91	<0.0010	<0.012	<0.0500	25.000	<0.0200	0.042	<0.06	60800	<5.00	6.60	7.7	<20000	<2.0	<0.050	<0.050
MW-02	D	Aug91	0.0016	0.012	<0.1000	29.500	0.0002	0.058	<0.100	59900	<5.00	<5.00	7.3	<20000	<2.0	<0.050	<0.050
MW-02	D	Nov91	<0.0010	0.0033	<0.0500	31.600	0.00074	0.057	<0.020	53800	<5.00	<5.00	6.8	<20000	<2.0	<0.050	<0.050
MW-02	D	May92	<0.0010	0.014	<0.0050	28.600	0.00057	0.056	<0.020	52000	<0.05	<5.00	6.6	1092	7.0	<50.00	<50.00
MW-02	D	Aug92	<0.0010	0.0085	<0.10	27.300	0.00034	0.11	<0.10	60000	<5.00	<5.00	6.9	14500	<2.0	<50.00	<50.00
MW-03	D	Oct88	<0.001	<0.010	<0.010	13.000	<0.0002	<0.01	0.080	12000	0.20	<2.00	6.8	37000	17.0	<0.05	<0.05
MW-03	D	Jan89	0.001	<0.005	<0.010	26.000	<0.0002	0.03	0.055	11000	0.05	<2.00	6.5	15000	4.0	<0.05	<0.05
MW-03	D	Apr89	<0.001	<0.005	<0.010	15.000	<0.0002	0.01	0.025	11000	0.20	<2.00	6.8	21000	<2.0	<0.05	<0.05
MW-03	D	Jul89	0.024	0.008	<0.009	13.000	<0.0002	0.02	0.040	12000	0.10	<5.00	6.9	20000	<2.0	<0.05	<0.05
MW-03	D	Oct89	<0.001	0.008	0.020	13.000	<0.0002	0.06	0.030	12000	0.15	<5.00	6.8	16000	<2.0	<0.05	<0.05
MW-03	D	Oct90	<0.005	<0.006	<0.0030	13.000	<0.0002	0.01	<0.020	11000	0.05	<5.00	6.9	19000	<2.0	<0.05	<0.05
MW-03	D	Feb91	<0.010	<0.0200	<0.0500	12.000	<0.0002	<0.04	<0.020	13600	<0.50	<5.00	5.7	17030	<2.0	<0.50	<0.050
MW-03	D	May91	<0.0010	<0.0010	<0.0100	11.400	<0.0200	0.013	<0.020	13100	<5.00	5.90	7.5	11440	<2.0	<0.050	<0.050

Table 16
Groundwater Analytical Results 1988-1992
Liquid Gold Site, Richmond, California
K/J 855018.14

Well[1]	Well Depth[2]	Sampling Date	Chromium[3] (mg/L)	Copper[3] (mg/L)	Lead[3] (mg/L)	Manganese[3] (mg/L)	Mercury[3] (mg/L)	Nickel[3] (mg/L)	Zinc[3] (mg/L)	TDS[4] (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH (units)	Specific Conductivity (umhos/cm)	Coliform[5]	TPH[6] Gas (mg/L)	TPH[6] Diesel (mg/L)
MW-03	D	Aug91	<0.0010	0.016	<0.0200	11.600	<0.0002	0.012	<0.020	12000	<0.50	16.00	7.5	18690	<2.0	<0.050	<0.050
MW-03	D	Nov91	<0.0010	0.014	<0.0500	12.600	<0.0002	0.011	<0.100	12700	<0.50	<5.00	6.9	14010	<2.0	<0.050	<0.050
MW-03	D	Feb92	<0.0010	0.0074	<0.0050	11.200	<0.002	0.012	<0.020	13300	<5.00	<5.00	6.7	20100	170.0	<0.050	<0.050
MW-03	D	May92	<0.0010	0.0045	<0.0050	11.500	<0.002	0.011	0.023	12100	<0.05	<5.00	6.8	1472	8-17	<0.050	<0.050
MW-03	D	Aug92	<0.0010	0.014	<0.0200	13.800	<0.002	0.012	<0.100	13700	0.56	<1.00	6.5	19600	≥1600	<50.00	0.440[7]
MW-04R	S	Jan89	<0.001	<0.005	0.050	4.600	<0.0002	0.12	0.350	6800	0.35	<2.00	6.6	7500	13000.0	<0.05	<0.05
MW-04R	S	Apr89	<0.001	0.007	0.020	2.900	0.0002	0.09	0.037	4400	0.25	<2.00	6.9	7500	900.0	<0.05	<0.05
MW-04R	S	Jul89	0.011	<0.006	0.012	2.000	<0.0002	0.07	0.020	5400	0.35	<5.00	7.2	9900	30.0	<0.05	<0.05
MW-04R	S	Oct89	0.001	<0.006	0.020	1.300	<0.0002	0.07	0.080	NA	0.30	NA	6.5	NA	7000.0	<0.05	<0.05
MW-04R	S	Dec90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
MW-04R	S	Feb91	<0.010	0.022	<0.0500	3.000	<0.0002	0.12	0.230	7940	<0.50	<5.00	5.5	12020	17.0	<0.50	<0.050
MW-04R	S	May91	<0.010	<0.001	0.0068	1.700	<0.0200	0.073	<0.020	4160	<0.50	8.70	7.2	5330	8.0	<0.050	0.0690
MW-04R	S	Aug91	NA	NA	NA	NA	NA	NA	NA	6770	<0.50	37.00	6.9	1167	2.0	<0.050	<0.090
MW-04R	S	Nov91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10220	<2.0	<0.050	NA
MW-04R	S	Feb92	<0.0010	0.0048	0.0100	1.900	<0.002	0.077	<0.020	6140	<5.00	<5.00	6.8	10500	<2.0	<0.050	<0.050
MW-04R	S	May92	<0.0010	0.0055	0.0050	1.800	<0.002	0.078	<0.020	6650	<0.05	<5.00	7.0	1672	14.0	<50.00	0.920[7]
MW-04R	S	Aug92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7.5	16510	NA	NA	NA

Table 16
Groundwater Analytical Results 1988-1992
Liquid Gold Site, Richmond, California
K/J 855018.14

Well[1]	Well Depth[2]	Sampling Date	Chromium[3] (mg/L)	Copper[3] (mg/L)	Lead[3] (mg/L)	Manganese[3] (mg/L)	Mercury[3] (mg/L)	Nickel[3] (mg/L)	Zinc[3] (mg/L)	TDS[4] (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH (units)	Specific Conductivity (umhos/cm)	Coliform[5]	TPH[6] Gas (mg/L)	TPH[6] Diesel (mg/L)
MW-05	S	Oct88	<0.001	<0.0050	<0.010	13.000	0.0003	0.04	0.090	53000	0.81	<2.00	6.8	73000	<2.0	<0.05	<0.05
MW-05DUP	S	Oct88	<0.001	<0.0050	<0.010	12.000	<0.0002	0.03	0.090	52000	0.24	<2.00	7.8	79000	<2.0	<0.05	<0.05
MW-05	S	Jan89	0.003	<0.0050	<0.010	14.000	<0.0002	0.05	0.017	51000	0.14	<2.00	6.5	50000	<2.0	<0.05	<0.05
MW-05	S	Jan89	0.003	0.0120	<0.010	13.000	0.0003	0.06	0.030	52000	0.13	<2.00	NA	NA	<2.0	<0.05	<0.05
MW-05	S	Apr89	0.001	<0.0050	<0.010	13.000	0.0002	0.05	<0.020	52000	0.26	<2.00	6.8	39000	<2.0	<0.05	<0.05
MW-05	S	Jul89	0.024	0.0610	<0.009	11.000	0.0006	0.03	0.050	52000	2.40	<5.00	6.8	66000	<2.0	<0.05	<0.05
MW-05	S	Oct89	0.01	<0.0060	<0.010	9.000	<0.0002	0.02	<0.020	53000	0.21	<5.00	7.3	61000	<2.0	<0.05	<0.05
MW-05DUP	S	Oct89	0.003	<0.0060	<0.010	9.500	<0.0002	0.04	<0.020	53000	0.14	<5.00	7.1	56000	<2.0	<0.05	<0.05
MW-05	S	Oct90	<0.005	<0.0060	<0.012	9.300	<0.0002	0.04	<0.020	52000	0.11	<5.00	6.6	64000	<2.0	<0.05	<0.05
MW-05	S	Feb91	<0.050	<0.1000	<0.25	10.900	<0.0002	<0.2	<0.100	52900	<0.50	<5.00	6.9	<20000	<2.0	<0.50	<0.050
MW-05	S	May91	<0.010	<0.0060	<0.0500	8.700	<0.0200	0.038	<0.040	49900	<5.00	8.10	6.9	<20000	<2.0	<0.050	<0.050
MW-05	S	Aug91	0.0011	0.0071	<0.010	11.900	<0.0002	0.016	<0.020	55200	<5.00	NA	6.8	<20000	<2.0	<0.050	<0.050
MW-05	S	Nov91	<0.0010	0.0380	<0.0500	11.400	0.00029	0.05	<0.040	48100	<5.00	<5.00	6.9	<20000	<2.0	<0.050	<0.050
MW-05	S	Feb92	<0.0010	0.0110	<0.0050	11.000	<0.0002	0.028	<0.020	53600	<5.00	<5.00	6.7	20000	<2.0	<0.050	<0.050
MW-05	S	May92	<0.0010	0.0022	<0.0050	10.300	<0.0002	0.030	<0.020	48400	<0.05	<5.00	6.6	920	<2.0	<50.00	<50.00
MW-05	S	Aug92	<0.0025	0.0160	<0.0500	11.500	<0.0002	0.045	<0.010	53000	<5.00	<5.00	6.5	10030	<2.0	<50.00	<50.00
MW-06	D	Oct88	0.001	<0.0050	<0.010	15.000	<0.0002	<0.01	0.020	10000	0.50	<2.00	6.8	15000	<2.0	<0.05	<0.05
MW-06	D	Jan89	0.002	0.0150	<0.010	13.000	<0.0002	<0.01	<0.005	8600	0.06	<2.00	6.7	11000	<2.0	<0.05	<0.05

Table 16
Groundwater Analytical Results 1988-1992
Liquid Gold Site, Richmond, California
K/J 855018.14

Well[1]	Well Depth[2]	Sampling Date	Chromium[3] (mg/L)	Copper[3] (mg/L)	Lead[3] (mg/L)	Manganese[3] (mg/L)	Mercury[3] (mg/L)	Nickel[3] (mg/L)	Zinc[3] (mg/L)	TDS[4] (mg/L)	Nitrate (mg/L)	Oil & Grease (mg/L)	pH (units)	Specific Conductivity (umhos/cm)	Coliform[5]	TPH[6] Gas (mg/L)	TPH[6] Diesel (mg/L)
MW-06	D	Apr89	0.002	<0.0050	<0.010	16.000	<0.0002	<0.01	0.054	9600	0.34	<2.00	6.9	23000	<2.0	<0.05	<0.05
MW-06	D	Jul89	0.03	<0.0060	<0.009	14.000	0.0002	<0.01	0.060	10000	<0.02	<5.00	6.9	18000	<2.0	<0.05	<0.05
MW-06	D	Oct89	0.003	<0.0060	<0.010	17.000	<0.0002	<0.01	<0.020	13000	0.18	<5.00	6.9	17000	<2.0	<0.05	<0.05
MW-07R	S	Oct88	<0.001	<0.005	<0.010	0.750	0.0002	<0.01	0.010	5900	0.10	<2.00	7.2	9200	240.0	<0.05	<0.05
MW-07R	S	Jan89	<0.001	<0.005	<0.010	0.650	<0.0002	0.02	<0.006	3200	0.13	<2.00	6.9	2400	9000.0	<0.05	<0.05
MW-07R	S	Apr89	<0.001	<0.005	<0.010	2.200	0.0002	0.01	0.027	3000	0.21	<2.00	7.0	8600	50000.0	<0.05	<0.05
MW-07R	S	Jul89	0.009	<0.006	<0.009	0.810	<0.0002	0.01	<0.020	4600	<0.02	<5.00	7.1	7800	22000.0	<0.05	<0.05
MW-07RDUP	S	Jul89	0.011	<0.006	<0.009	0.700	<0.0002	<0.01	<0.020	3900	<0.02	<5.00	7.2	6900	30000.0	<0.05	<0.05
MW-07R	S	Oct89	<0.001	0.010	<0.010	1.100	<0.0002	0.04	<0.020	4600	<0.02	<5.00	7.1	6400	30000.0	<0.05	<0.05
MW-07R	S	Oct90	<0.005	<0.006	<0.003	1.000	<0.0002	0.01	<0.020	6100	0.23	<5.00	7.2	11000	50.0	<0.05	<0.05
MW-07R	S	Feb91	<0.010	<0.0200	<0.0500	0.370	<0.0002	<0.04	0.024	2150	<0.50	7.10	5.4	2740	30.0	<0.50	<0.050
MW-07R	S	May91	0.0012	<0.0010	<0.0050	1.600	<0.0200	0.015	0.020	4520	<0.50	6.90	6.9	2900	2.0	<0.050	<0.090
MW-07R	S	Aug91	0.0016	0.0150	<0.0100	1.500	<0.0002	0.018	<0.020	4670	<0.50	16.00	6.8	9680	2.0	<0.050	<0.150
MW-07R	S	Nov91	<0.0010	0.0110	<0.1000	1.500	<0.0002	0.012	<0.020	3950	<0.50	9.40	7.2	6070	<2.0	<0.050	<0.050
MW-07R	S	Feb92	0.0026	0.0170	0.0053	0.580	<0.0002	0.012	<0.020	3280	<5.00	<5.00	7.0	5980	1600.0	<0.050	<0.050
MW-07R	S	May92	<0.0010	0.0055	<0.005	3.800	<0.0002	0.012	0.0220	3860	<0.05	8.40	6.9	670	54.0	<50.00	1.500[7]
MW-07R	S	Aug92	0.0011	0.0074	<0.020	1.500	<0.0002	0.016	<0.020	5990	<0.05	7.30	7.2	6820	2.0	<50.00	1.300[7]

Appendix B
Well Abandonment Forms

ORIGINAL
File with DWR

Page 1 of 9

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720440

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MW - 1
Date Work Began 5/5/04, Ended 5/5/04
Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DIV.
Permit No. 04-1264 Permit Date 3/25/04

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		OVERDRILLED 8" BORING W/ 10" HOLLOW STEM AUGER AND FILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 30 (Feet)
TOTAL DEPTH OF COMPLETED WELL 30 (Feet)

WELL OWNER
Name UPRR - MIKE GRANT
Mailing Address 49 STEVENSON ST. SUITE 1050
CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION
Address WEST OF I-580 @ BAYVIEW EXIT
City RICHMOND
County CONTRA COSTA
APN Book 0560 Page 1 Parcel 872-7-2A
Township 1N Range 4W Section 29
Latitude 37 DEG. 54.67 MIN. NORTH Longitude 122 DEG. 19.42 MIN. WEST

LOCATION SKETCH
NORTH
SEE ATTACHED
WEST EAST
SOUTH
Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)
___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)
WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL
DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)
___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP
ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT
I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.
NAME V1 BONIX, INC (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
2110 Adams Ave ADDRESS San Leandro CITY CA STATE 94577 ZIP
Signed Trisha Uhler WELL OWNER/AUTHORIZED REPRESENTATIVE
8/19/04 DATE SIGNED
705927 C-57 LICENSE NUMBER

DWR 188 REV 11-97
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 2 of 9

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720441

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MW-2R
Date Work Began 5/3/04, Ended 5/5/04
Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DIV.
Permit No. 04-1265 Permit Date 3/25/04

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
	OVERDRILLED 8" BOREHOLE W/10" HOLLOW STEM AUGER AND BACKFILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 25 (Feet)
TOTAL DEPTH OF COMPLETED WELL 25 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT
Mailing Address 49 STEVENSON ST. SUITE 1050
CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT
City RICHMOND
County CONTRA COSTA
APN Book 560 Page 1 Parcel 872-7-2A
Township 1N Range 4W Section 29
Latitude 37 DEG 54.65 MIN. NORTH ~~SEC.~~ Longitude 122 DEG 19.43 MIN. WEST ~~SEC.~~

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
** May not be representative of a well's long-term yield.*

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S) TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex Inc (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 2110 Adams Ave CITY San Leandro STATE Ca ZIP 94577
Signed [redacted] WELL DRILLER/AUTHORIZED REPRESENTATIVE
DATE SIGNED 8-19-04
C-57 LICENSE NUMBER 705927

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 3 of 9

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720442

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MW-3
Date Work Began 5/3/04, Ended 5/5/04
Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DIV.
Permit No. 04-12606 Permit Date 3/25/04

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
	OVERDRILLED 8" BORING W/ 10" HOLLOW STEM AUGER AND FILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 35 (Feet)
TOTAL DEPTH OF COMPLETED WELL 35 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT
Mailing Address 49 STEVENSON ST. SUITE 1050
CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT
City RICHMOND
County CONTRA COSTA
APN Book 560 Page 1 Parcel 872-7-2A
Township 1N Range 4W Section 29
Latitude 37 DEG. 54.63 MIN. SEC NORTH Longitude 122 DEG. 19.39 MIN. SEC WEST

LOCATION SKETCH

NORTH
SEE ATTACHED
WEST EAST
SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. PLEASE BE ACCURATE & COMPLETE.

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* *May not be representative of a well's long-term yield.*

CASING ($)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
2110 Adams Ave ADDRESS San Leandro CITY CA STATE 94577 ZIP
Signed Trisha White WELL DRILLER/AUTHORIZED REPRESENTATIVE
8/19/04 DATE SIGNED
705987 C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 4 of 9

Owner's Well No. MW-5

Date Work Began 5/3/04, Ended 5/5/04

Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DEV.

Permit No. 04-1267 Permit Date 3/25/04

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720443

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		OVERDRILLED 8" BOREHOLE W/ 10" HOLLOW STEM AUGER AND FILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 20 (Feet)

TOTAL DEPTH OF COMPLETED WELL 20 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT

Mailing Address 49 STEVENSON ST. SUITE 1050

CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT.

City RICHMOND

County CONTRA COSTA

APN Book 560 Page 1 Parcel 872-7-2A

Township 1N Range 4W Section 29

Latitude 37 DEG. 54.61 MIN. NORTH SEC. Longitude 122 DEG. 19.42 MIN WEST SEC.

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CE-MENT (✓)	BEN-TONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 2110 Adams Ave CITY San Leandro STATE Ca ZIP 94577

Signed Lisa White (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8/19/04

C-57 LICENSE NUMBER 705987

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 5 of 9

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720444

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

Owner's Well No. MW-6R
Date Work Began 5/3/04, Ended 5/5/04
Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DIV.
Permit No. 04-1268 Permit Date 3/25/04

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)
DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
	OVERDRILLED 8" BOREHOLE W/ 10" HOLLOW STEM AUGER AND BACKFILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 30 (Feet)
TOTAL DEPTH OF COMPLETED WELL 30 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT
Mailing Address 49 STEVENSON ST. SUITE 1050
CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT
City RICHMOND
County CONTRA COSTA
APN Book 560 Page 1 Parcel 872-7-29
Township 1N Range 4W Section 29
Latitude 37 DEG. 54.61 MIN. SEC. NORTH Longitude 122 DEG. 19.44 MIN. SEC. WEST

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL
MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)
✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial
MONITORING ___
TEST WELL ___
CATHODIC PROTECTION ___
HEAT EXCHANGE ___
DIRECT PUSH ___
INJECTION ___
VAPOR EXTRACTION ___
SPARGING ___
REMEDIATION ___
OTHER (SPECIFY) ___

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE
DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___
ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___
TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)
* *May not be representative of a well's long-term yield.*

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	CASING (S) TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

DEPTH FROM SURFACE Ft. to Ft.	ANNULAR MATERIAL TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
✓ Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)
ADDRESS 2110 Adams Ave CITY San Leandro STATE Ca ZIP 94577
Signed Trisha White (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8-19-04 C-57 LICENSE NUMBER 708927

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 6 of 9

Owner's Well No. MW-9

Date Work Began 5/3/04, Ended 5/5/04

Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DIV.

Permit No. 04-1269 Permit Date 3/25/04

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720445

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
	OVERDRILLED 8" BORING W/10" HOLLOW STEM AUGER AND BACKFILLED W/NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 35 (Feet)

TOTAL DEPTH OF COMPLETED WELL 35 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT

Mailing Address 49 STEVENSON ST. SUITE 1050

CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT

City RICHMOND

County CONTRA COSTA

APN Book 560 Page 1 Parcel 872-7-2A

Township 1N Range 4W Section 29

Latitude 37 DEG. 54.59 MIN. NORTH SEC. Longitude 122 DEG. 19.38 MIN. WEST SEC.

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
✓ Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 2110 Adams Ave CITY San Leandro STATE Ca ZIP 94577

Signed Trisha White (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8-19-04 C-57 LICENSE NUMBER 703927

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 1 of 9

Owner's Well No. MW-18R

Date Work Began 5/3/04, Ended 5/5/04

Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DIV.

Permit No. 04-1270 Permit Date 3/25/04

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720446

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
	OVERDRILLED 8" BORING W/ 10" HOLLOW STEM AUGER AND FILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 26.5 (Feet)

TOTAL DEPTH OF COMPLETED WELL 26.5 (Feet)

WELL OWNER

Name BP UPRR - MIKE GRANT

Mailing Address 49 STEVENSON ST. SUITE 1050

CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT

City RICHMOND

County CONTRA COSTA

APN Book 560 Page 1 Parcel 872-7-2A

Township 1N Range 4W Section 29

Latitude 37° 54' 62" NORTH (DEG. MIN. SEC.) Longitude 122° 19' 45" WEST (DEG. MIN. SEC.)

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

** May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 2110 Adams Ave CITY San Leandro STATE Ca ZIP 94577

Signed [signature] (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8-19-04

C-57 LICENSE NUMBER 705927

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 8 of 9

Owner's Well No. MW-21

Date Work Began 5/3/04, Ended 5/5/04

Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DEV.

Permit No. 04-1271 Permit Date 3/25/04

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 720447

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO /STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD ___ FLUID ___

DEPTH FROM SURFACE Ft. to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
	OVER-DRILLED 8" BORING W/10" HOLLOW STEM AUGER AND BACKFILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 9 (Feet)

TOTAL DEPTH OF COMPLETED WELL 9 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT

Mailing Address 49 STEVENSON ST. SUITE 1050

CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT

City RICHMOND

County CONTRA COSTA

APN Book 560 Page 1 Parcel 872-7-2A

Township 1N Range 4W Section 29

Latitude 37 DEG. 54.62 MIN. ~~SEC.~~ NORTH Longitude 122 DEG. 19.45 MIN. ~~SEC.~~ WEST

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER ___ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL ___ (Ft.) & DATE MEASURED ___

ESTIMATED YIELD * ___ (GPM) & TEST TYPE ___

TEST LENGTH ___ (Hrs.) TOTAL DRAWDOWN ___ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft. to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CON-DUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft. to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

NAME Vironex (PERSON, FIRM, OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 2110 Adams Ave CITY San Leandro STATE Ca ZIP 94577

Signed Trisha White (WELL DRILLER/AUTHORIZED REPRESENTATIVE) DATE SIGNED 8-19-04 C-57 LICENSE NUMBER 705987

DWR 188 REV 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

ORIGINAL
File with DWR

Page 9 of 9

Owner's Well No. MW-22

Date Work Began 5/3/04, Ended 5/5/04

Local Permit Agency CONTRA COSTA ENVIRONMENTAL HEALTH DEV.

Permit No. 04-1272 Permit Date 3/25/04

STATE OF CALIFORNIA
WELL COMPLETION REPORT
Refer to Instruction Pamphlet

No. 746536

DWR USE ONLY — DO NOT FILL IN
STATE WELL NO./STATION NO.
LATITUDE LONGITUDE
APN/TRS/OTHER

GEOLOGIC LOG

ORIENTATION (✓) ✓ VERTICAL ___ HORIZONTAL ___ ANGLE ___ (SPECIFY)

DRILLING METHOD _____ FLUID _____

DEPTH FROM SURFACE Ft.	to Ft.	DESCRIPTION *Describe material, grain size, color, etc.*
		OVERDRILLED 8" BORING W/ 10" HOLLOW STEM AUGER AND BACKFILLED W/ NEAT CEMENT TO ~1' BGS.

TOTAL DEPTH OF BORING 9 (Feet)

TOTAL DEPTH OF COMPLETED WELL 9 (Feet)

WELL OWNER

Name UPRR - MIKE GRANT

Mailing Address 49 STEVENSON ST. SUITE 1050

CITY SAN FRANCISCO STATE CA ZIP 94105

WELL LOCATION

Address WEST OF I-580 @ BAYVIEW EXIT

City RICHMOND

County CONTRA COSTA

APN Book 560 Page 1 Parcel 872-7-2A

Township 1N Range 4W Section 29

Latitude 37 DEG. 54.62 MIN. NORTH SEC. Longitude 122 DEG. 19.47 MIN. WEST SEC.

LOCATION SKETCH

NORTH

SEE ATTACHED

WEST EAST

SOUTH

Illustrate or Describe Distance of Well from Roads, Buildings, Fences, Rivers, etc. and attach a map. Use additional paper if necessary. ***PLEASE BE ACCURATE & COMPLETE.***

ACTIVITY (✓)

___ NEW WELL

MODIFICATION/REPAIR
___ Deepen
___ Other (Specify)

✓ DESTROY *(Describe Procedures and Materials Under "GEOLOGIC LOG")*

PLANNED USES (✓)

WATER SUPPLY
___ Domestic ___ Public
___ Irrigation ___ Industrial

___ MONITORING
___ TEST WELL
___ CATHODIC PROTECTION
___ HEAT EXCHANGE
___ DIRECT PUSH
___ INJECTION
___ VAPOR EXTRACTION
___ SPARGING
___ REMEDIATION
___ OTHER (SPECIFY)

WATER LEVEL & YIELD OF COMPLETED WELL

DEPTH TO FIRST WATER _____ (Ft.) BELOW SURFACE

DEPTH OF STATIC WATER LEVEL _____ (Ft.) & DATE MEASURED _____

ESTIMATED YIELD * _____ (GPM) & TEST TYPE _____

TEST LENGTH _____ (Hrs.) TOTAL DRAWDOWN _____ (Ft.)

* *May not be representative of a well's long-term yield.*

CASING (S)

DEPTH FROM SURFACE Ft.	to Ft.	BORE-HOLE DIA. (Inches)	TYPE (✓) BLANK	SCREEN	CONDUCTOR	FILL PIPE	MATERIAL / GRADE	INTERNAL DIAMETER (Inches)	GAUGE OR WALL THICKNESS	SLOT SIZE IF ANY (Inches)

ANNULAR MATERIAL

DEPTH FROM SURFACE Ft.	to Ft.	TYPE CEMENT (✓)	BENTONITE (✓)	FILL (✓)	FILTER PACK (TYPE/SIZE)

ATTACHMENTS (✓)

___ Geologic Log
___ Well Construction Diagram
___ Geophysical Log(s)
___ Soil/Water Chemical Analyses
X Other MAP

ATTACH ADDITIONAL INFORMATION, IF IT EXISTS.

CERTIFICATION STATEMENT

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief.

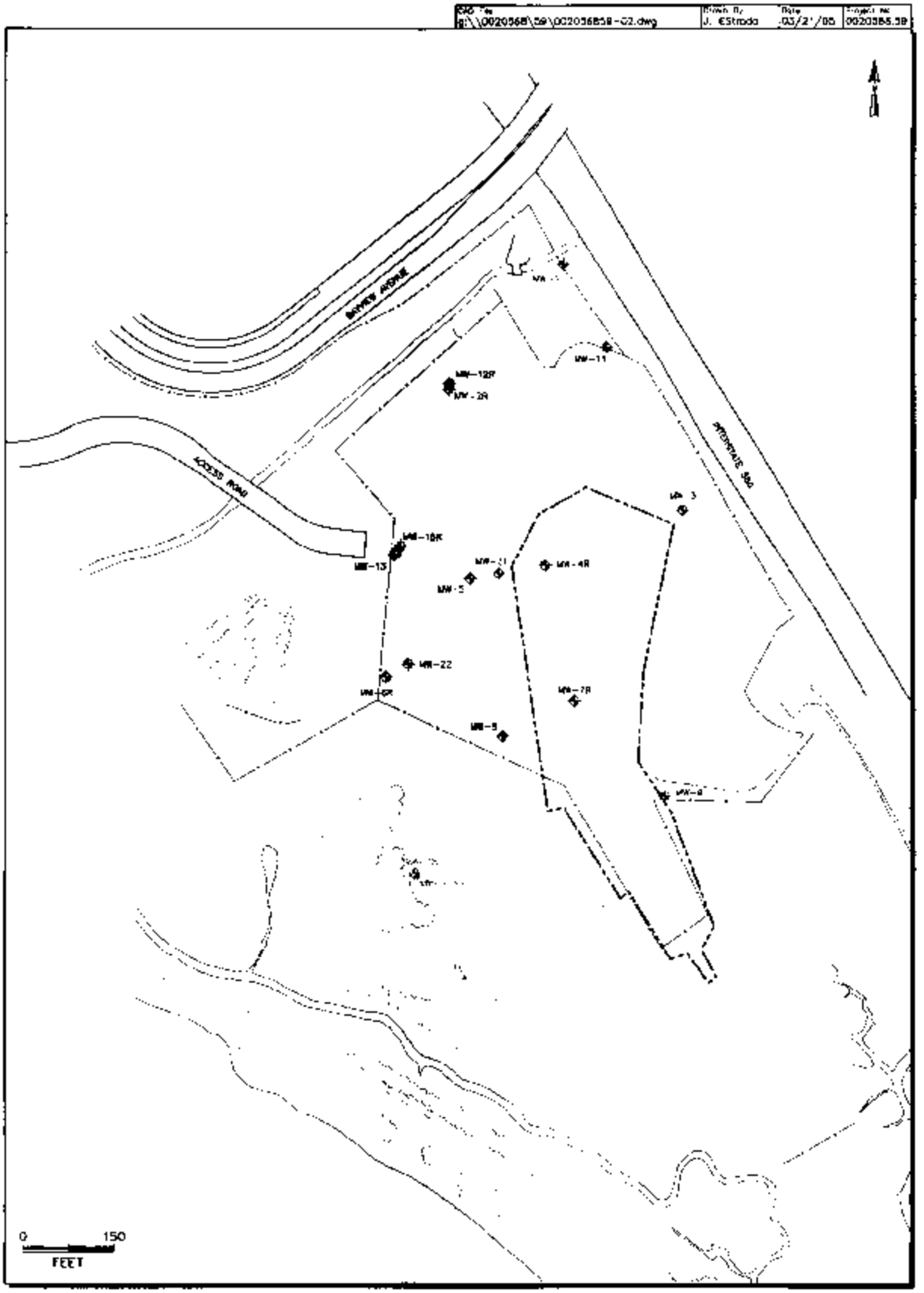
NAME [signature] Vironex
(PERSON, FIRM OR CORPORATION) (TYPED OR PRINTED)

ADDRESS 2110 Adams Ave CITY San Leandro STATE CA ZIP 94577

Signed [signature] 8-19-04 705427
WELL DRILLER/AUTHORIZED REPRESENTATIVE DATE SIGNED C-57 LICENSE NUMBER

DWR 188 REV. 11-97

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM



LEGEND

- MONITORING WELL
- MONITORING WELL, DESTROYED
- EXISTING FENCE
- VEGETATED COVER

Destroyed Monitoring Wells
Liquid Gold Facility
Union Pacific Railroad Company
Richmond, California

EKM

Appendix C
Site Inspection Forms
(2000-2004)

Table 1
Inspection Record for Vegetated Cover
Liquid Gold Site, Richmond, CA
ERM 8034.39

Inspector: KFD, JET Signature: Ken Ford Dalby

Date: 12-14-00

ITEM	YES	NO	COMMENTS
VEGETATED COVER INTEGRITY			
Are there signs of erosion on the cover?		✓	
Is there ponding on the cover, or are there indications of ponding?		✓	
Does the vegetation on the cover appear stressed?		✓	
Are there signs of animals burrowing in the cover?	✓		
SITE SECURITY			
Are the gates shut and locked?	✓		
Are the chains and locks in good condition?	✓		Need new lock for NE gate
Are the fences intact and free of holes or tears?	✓		At northeast gate - barbed wire is cut
Are the fence posts in good condition?	✓		
Are the site perimeter signs intact and legible?	✓		
OTHER			
Are there indications of the presence of chemicals (e.g., soil discoloration, odor)?		✓	
Is there debris or trash onsite?	✓		Near eucclyptus trees + SE corner
Additional observations?			

Table 1
Inspection Record for Vegetated Cover
Liquid Gold Site, Richmond, CA
ERM 8034.39

Inspector: Anita Honeycy Signature: Anita Honeycy

Date: 12/28/01

ITEM	YES	NO	COMMENTS
VEGETATED COVER INTEGRITY			
Are there signs of erosion on the cover?		X	
Is there ponding on the cover, or are there indications of ponding?		X	
Does the vegetation on the cover appear stressed?		X	
Are there signs of animals burrowing in the cover?		X	
SITE SECURITY			
Are the gates shut and locked?	X		the interior gate near the freeway needs a lock
Are the chains and locks in good condition?	X		
Are the fences intact and free of holes or tears?		X	
Are the fence posts in good condition?	X		
Are the site perimeter signs intact and legible?	X		
OTHER			
Are there indications of the presence of chemicals (e.g., soil discoloration, odor)?		X	
Is there debris or trash onsite?	X		Some, not a lot
Additional observations?			purge water drums on the site.

Inspection Record for Vegetated Cover
Liquid Gold Site, Richmond, CA
ERM 9329.50

Inspector: Mike Blanchard · Signature: [signature]

Date: 24 November 2002

ITEM	YES	NO	COMMENTS
VEGETATED COVER INTEGRITY			
Are there signs of erosion on the cover?		X	
Is there ponding on the cover, or are there indications of ponding?		X	
Does the vegetation on the cover appear stressed?		X	Small burned area from brush fire
Are there signs of animals burrowing in the cover?		X	
SITE SECURITY			
Are the gates shut and locked?	X		Inner lock broken, gate open
Are the chains and locks in good condition?	X		Except inner lock + SW gate lock
Are the fences intact and free of holes or tears?		X	Six fence panels missing in burned area
Are the fence posts in good condition?	X		
Are the site perimeter signs intact and legible?	X		
OTHER			
Are there indications of the presence of chemicals (e.g., soil discoloration, odor)?		X	
Is there debris or trash onsite?		X	
Additional observations?		X	

Inspection Record for Vegetated Cover
Liquid Gold Site, Richmond, CA
ERM 9329.50

Inspector: JOHN CAVANAUGH Signature: John C

Date: 04/13/05

ITEM	YES	NO	COMMENTS
VEGETATED COVER INTEGRITY			
Are there signs of erosion on the cover?		X	VEGETATION GENERALLY IN GOOD SHAPE
Is there ponding on the cover, or are there indications of ponding?		X	
Does the vegetation on the cover appear stressed?		X	
Are there signs of animals burrowing in the cover?		X	
SITE SECURITY			
Are the gates shut and locked?		X	GATE SECURITY COMPROMISED
Are the chains and locks in good condition?	X		
Are the fences intact and free of holes or tears?	X		
Are the fence posts in good condition?	X		
Are the site perimeter signs intact and legible?	X		
OTHER			
Are there indications of the presence of chemicals (e.g., soil discoloration, odor)?		X	
Is there debris or trash onsite?	X		SOME DEBRIS PRESENT
Additional observations?			

Appendix D
Groundwater Concentration Trend Graphs

Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California

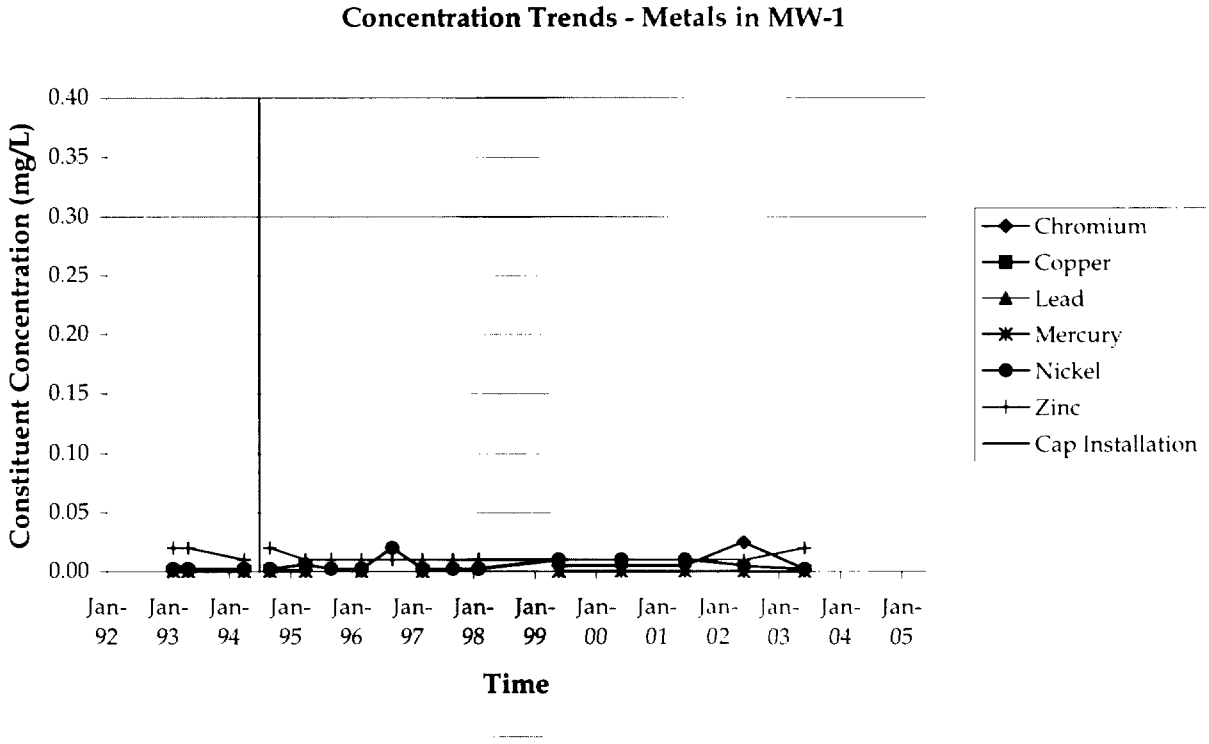
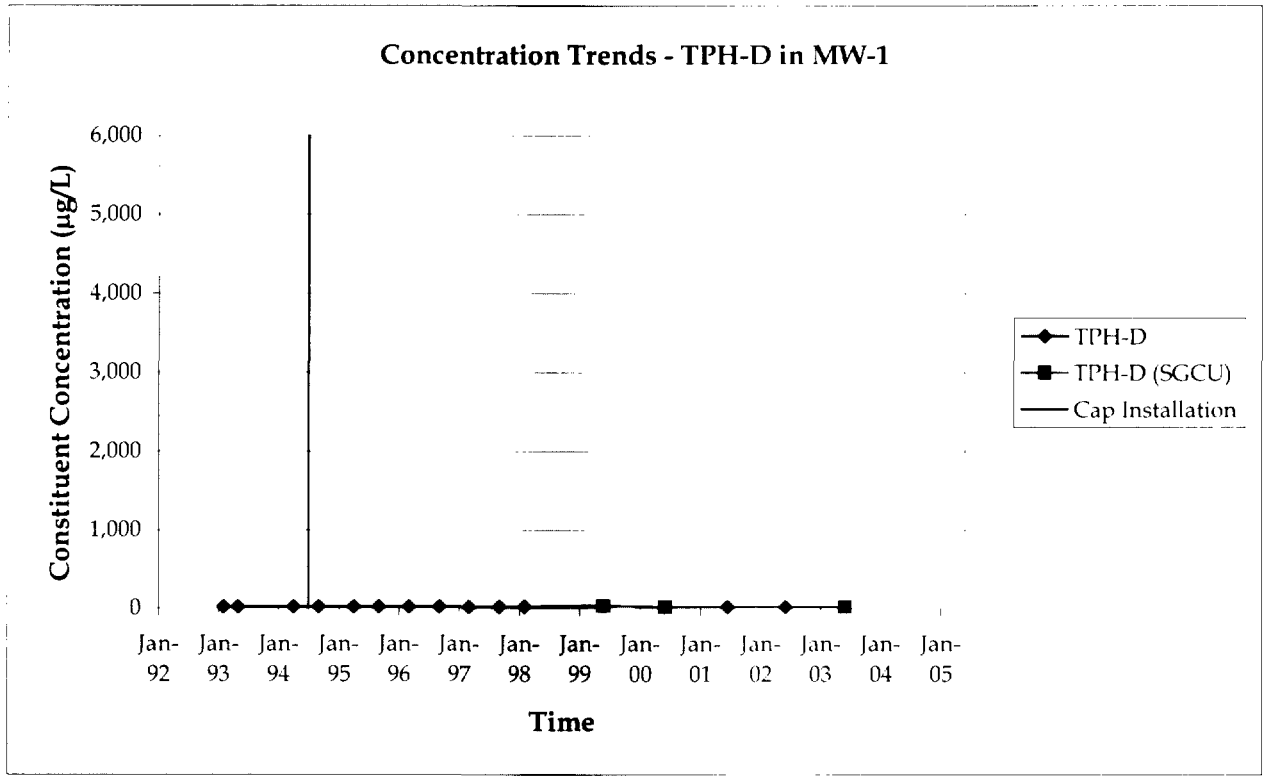


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



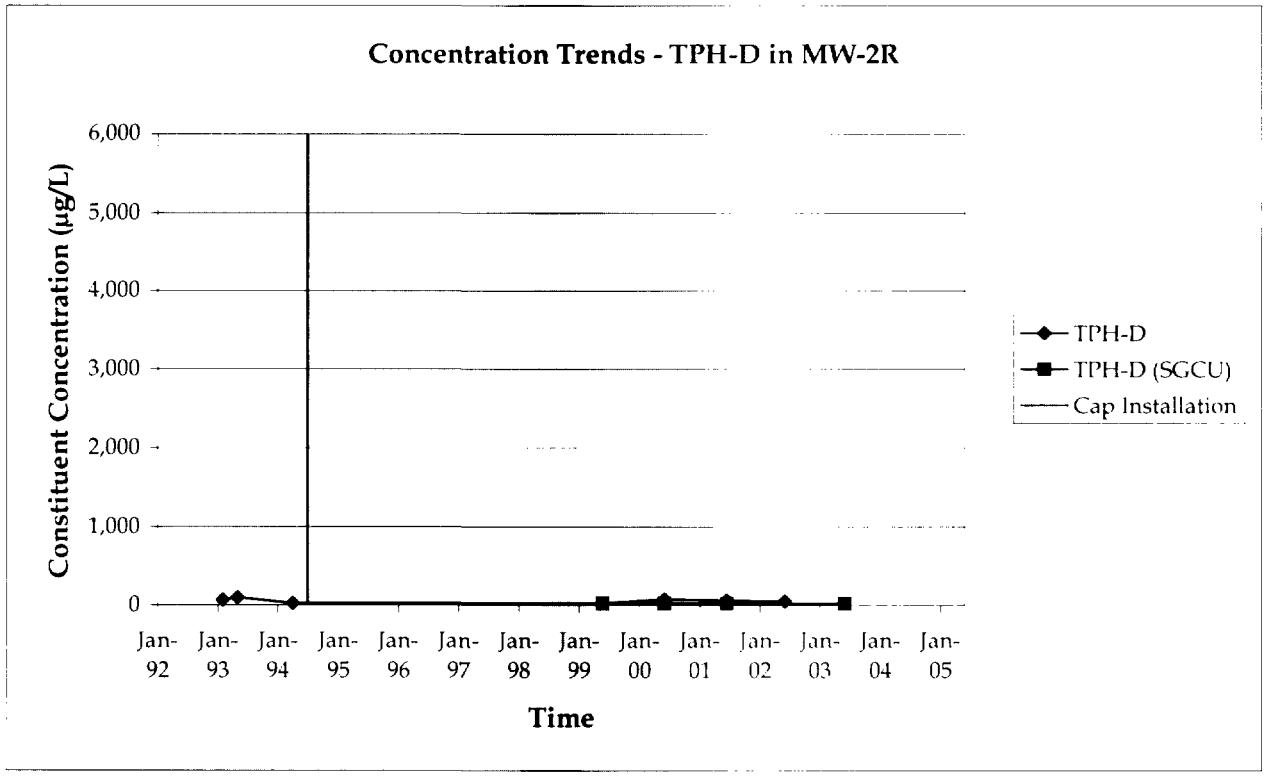
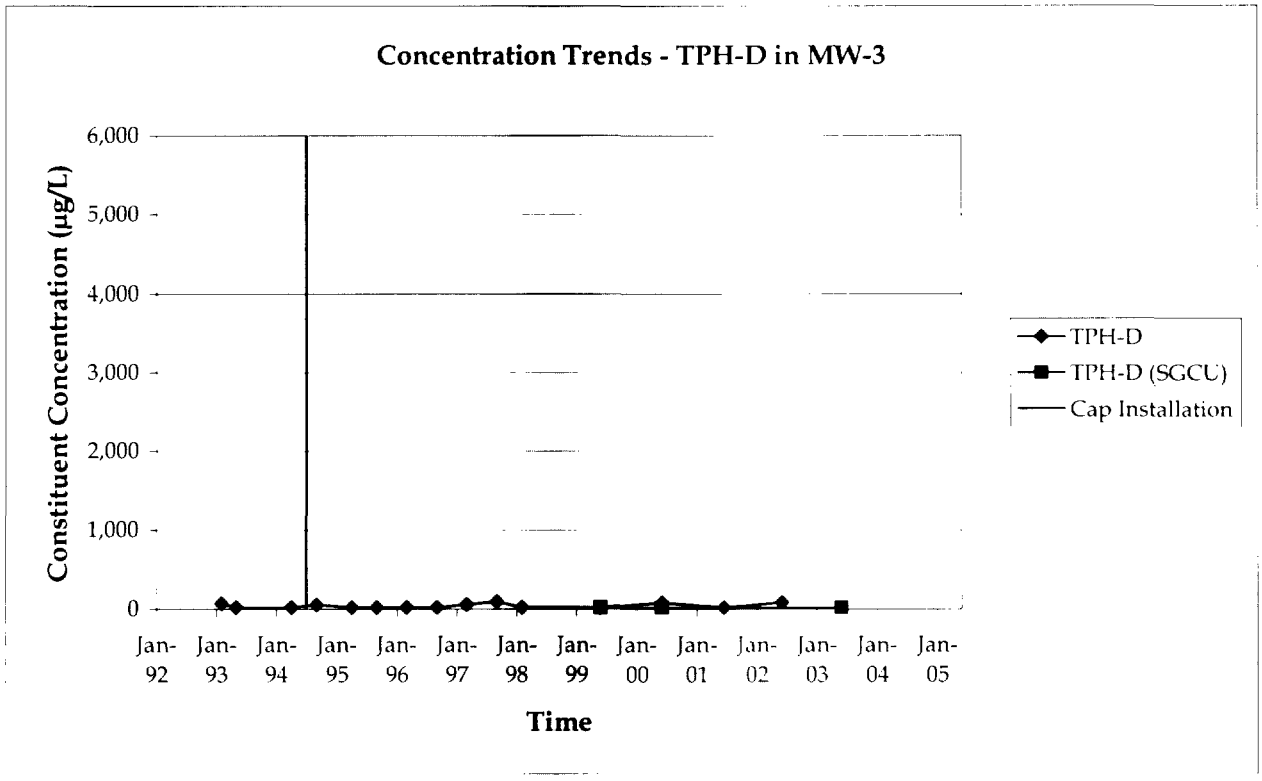


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



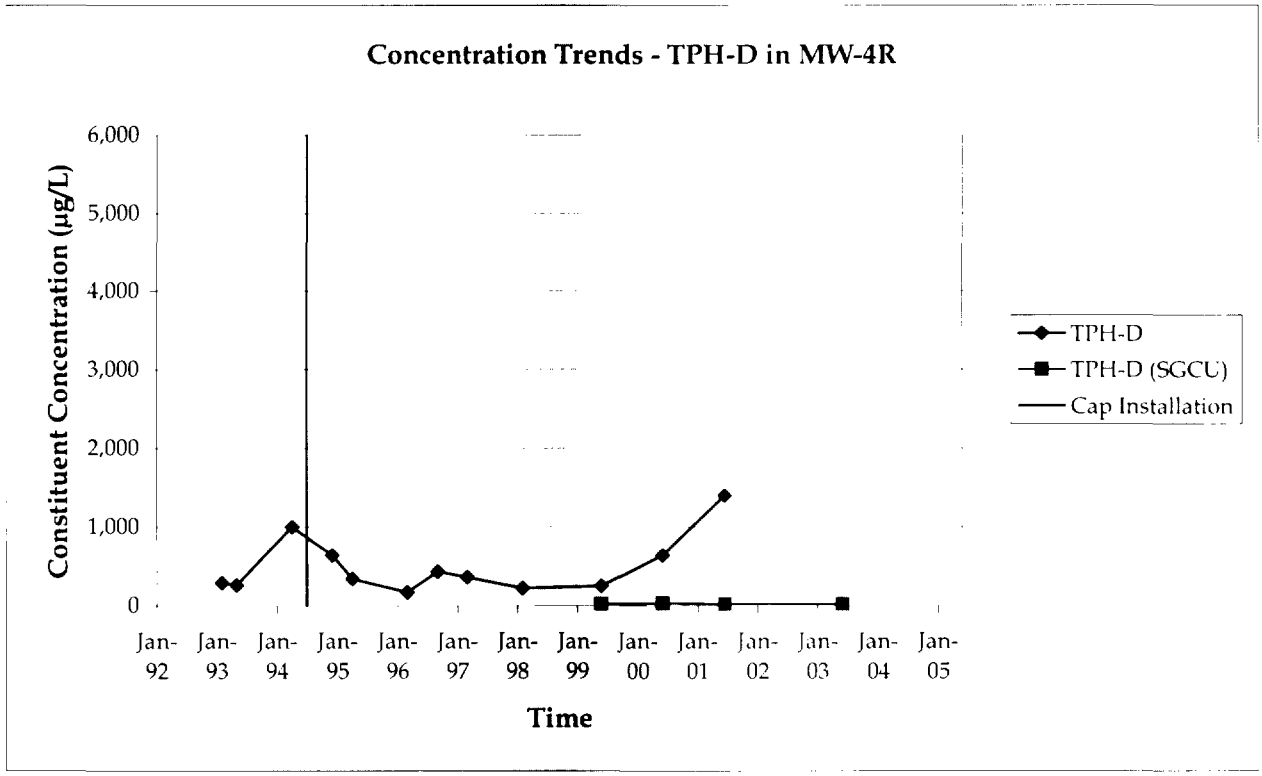
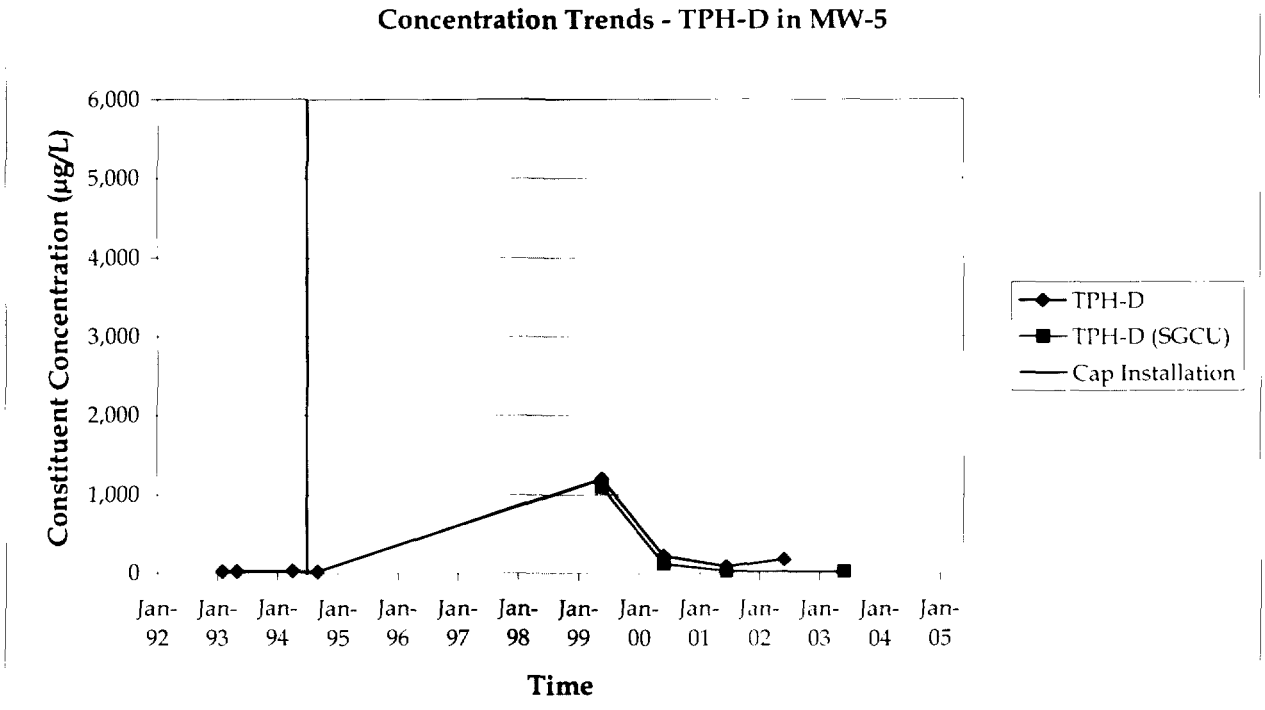


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



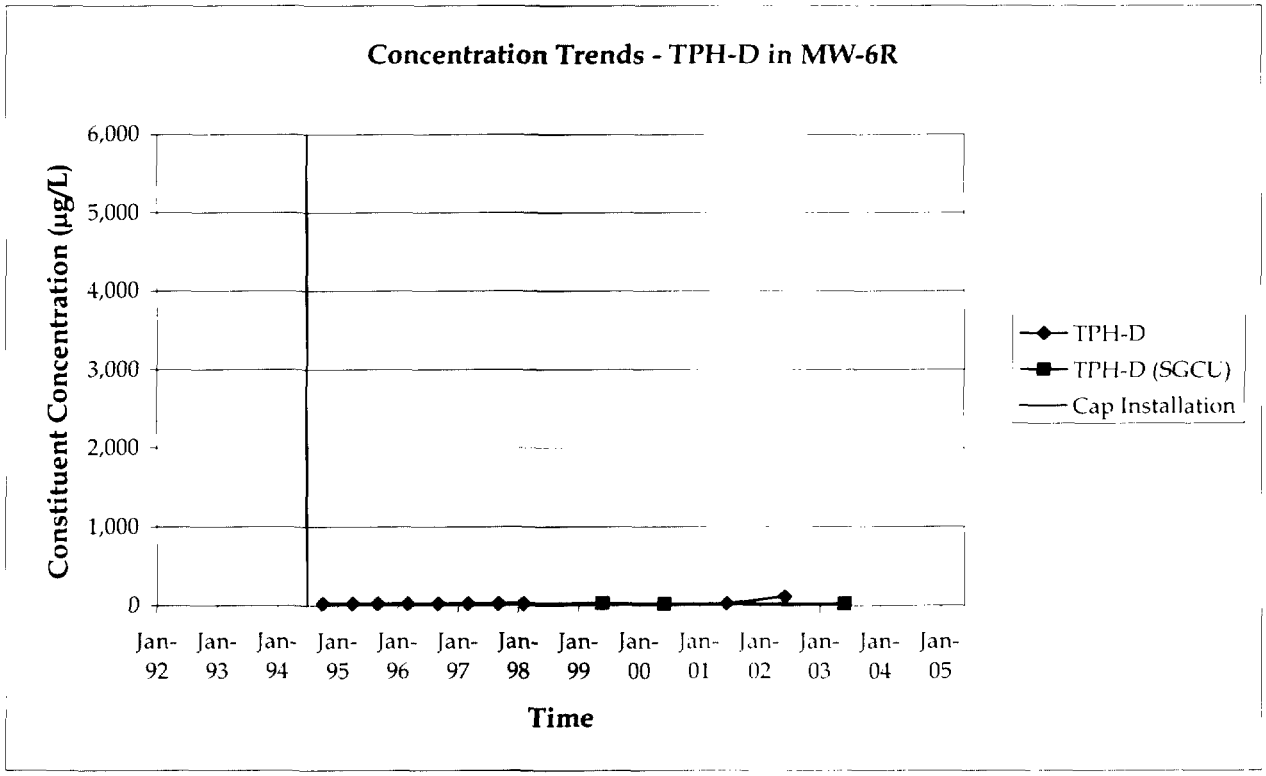
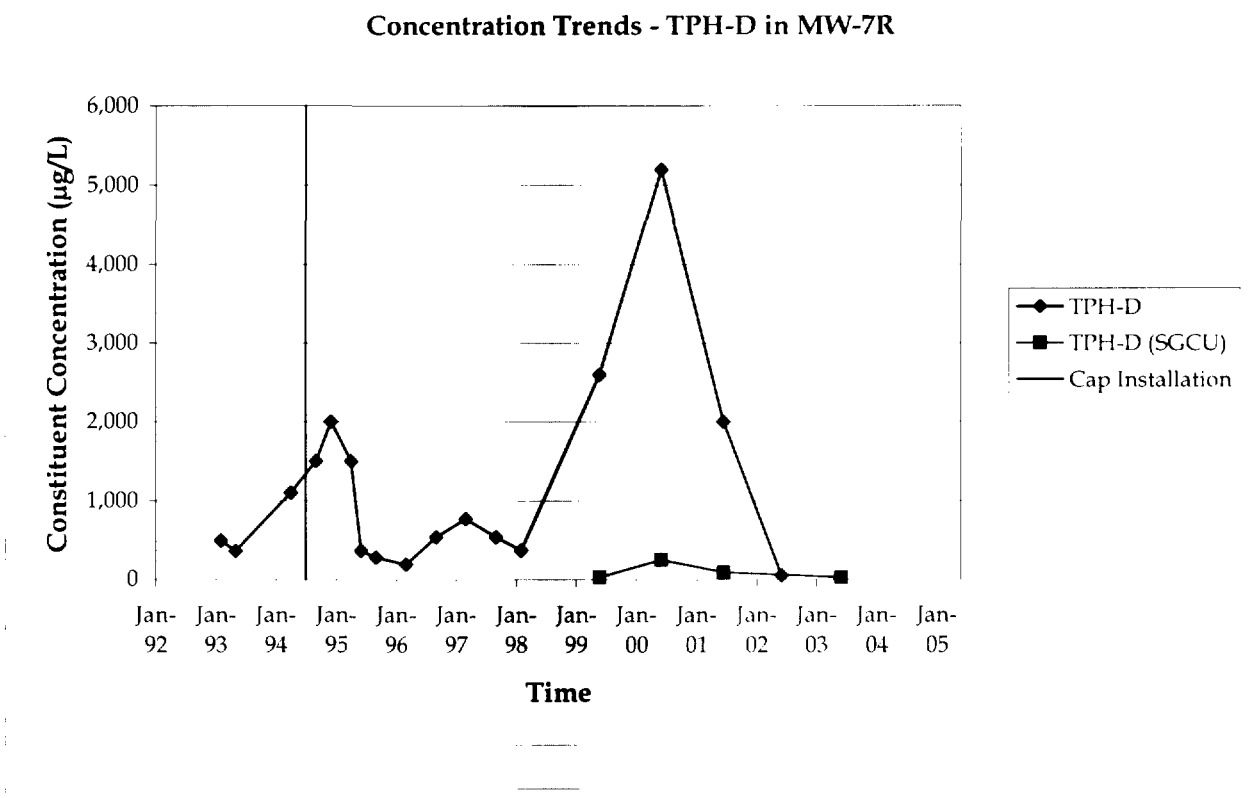


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



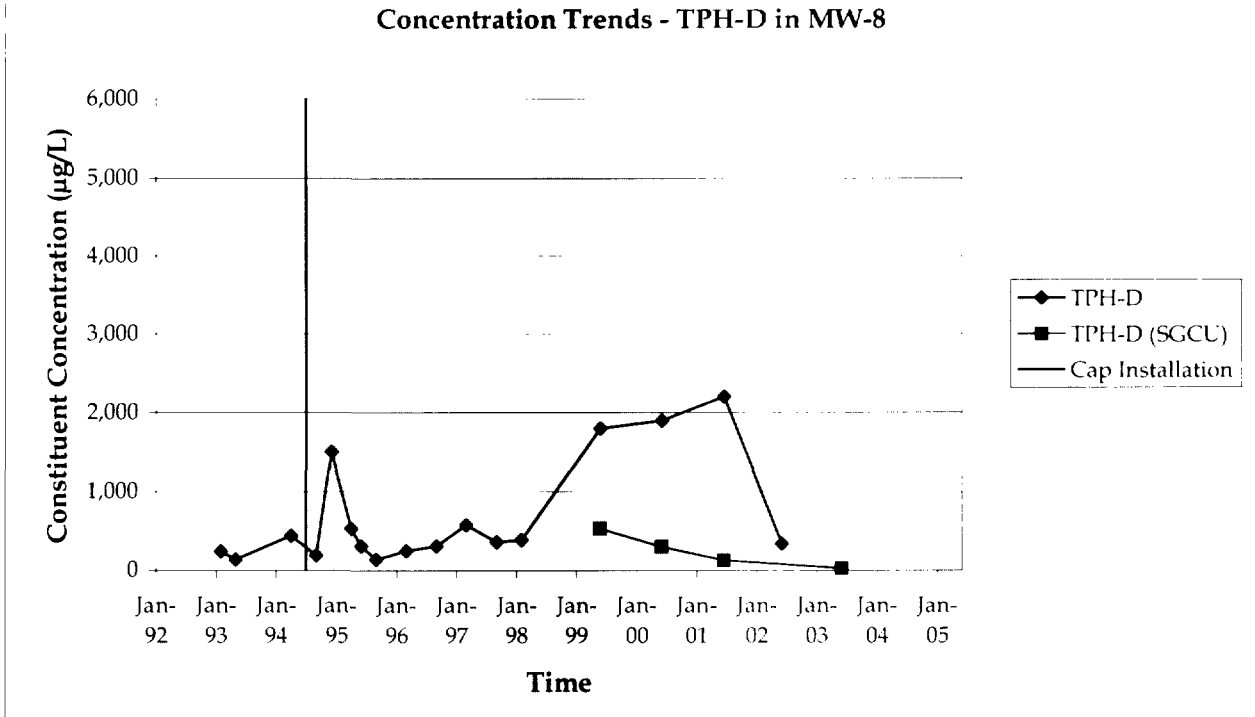
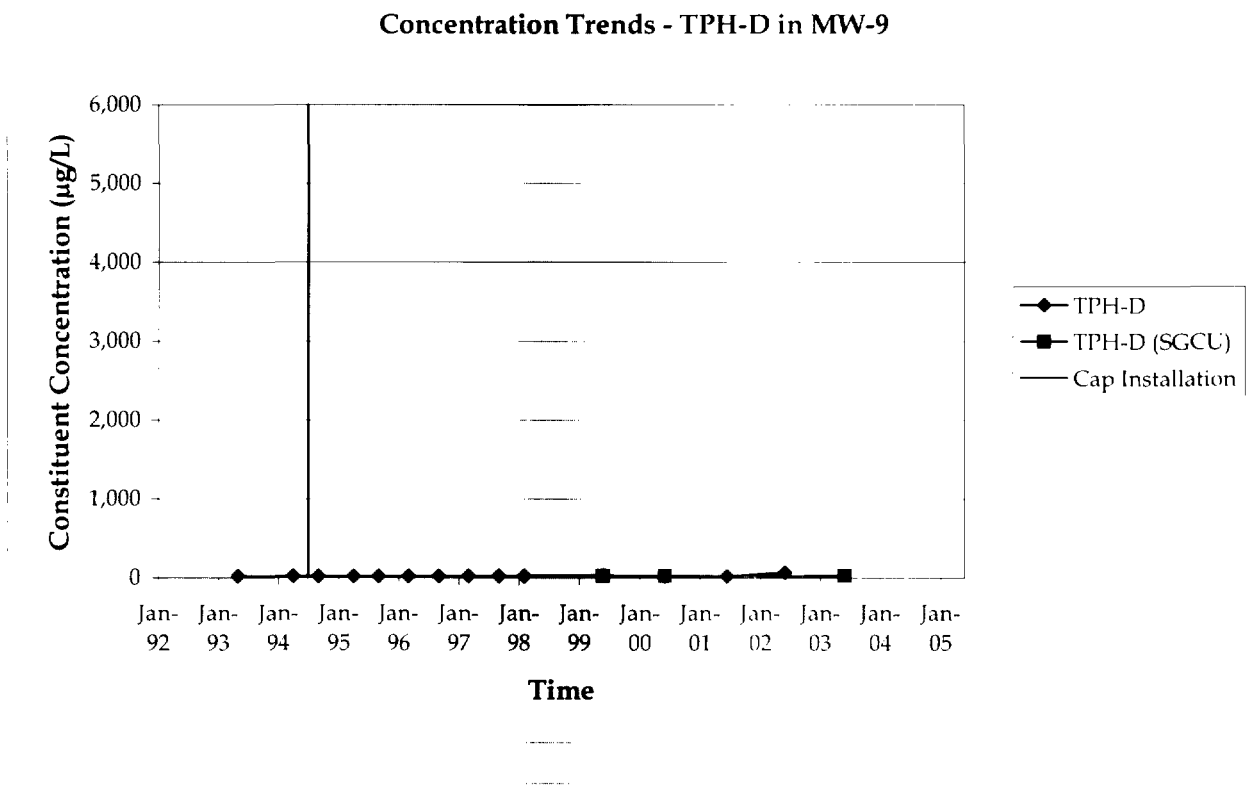


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



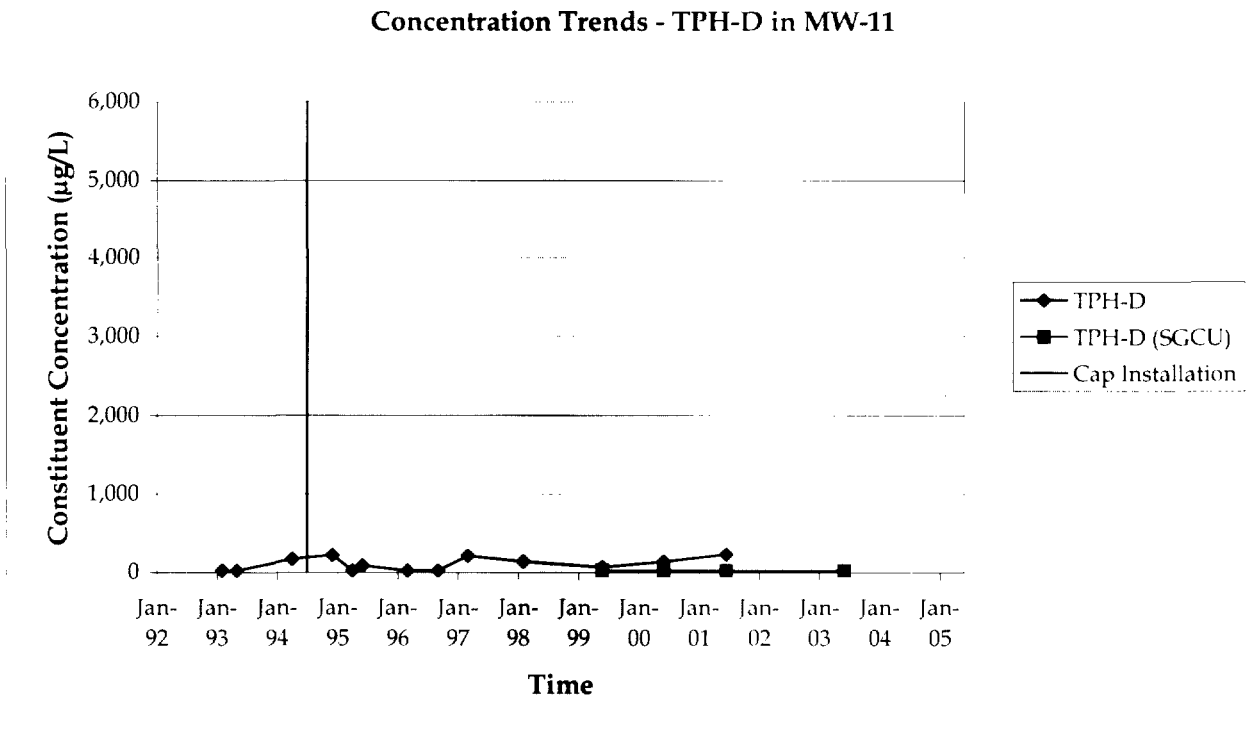
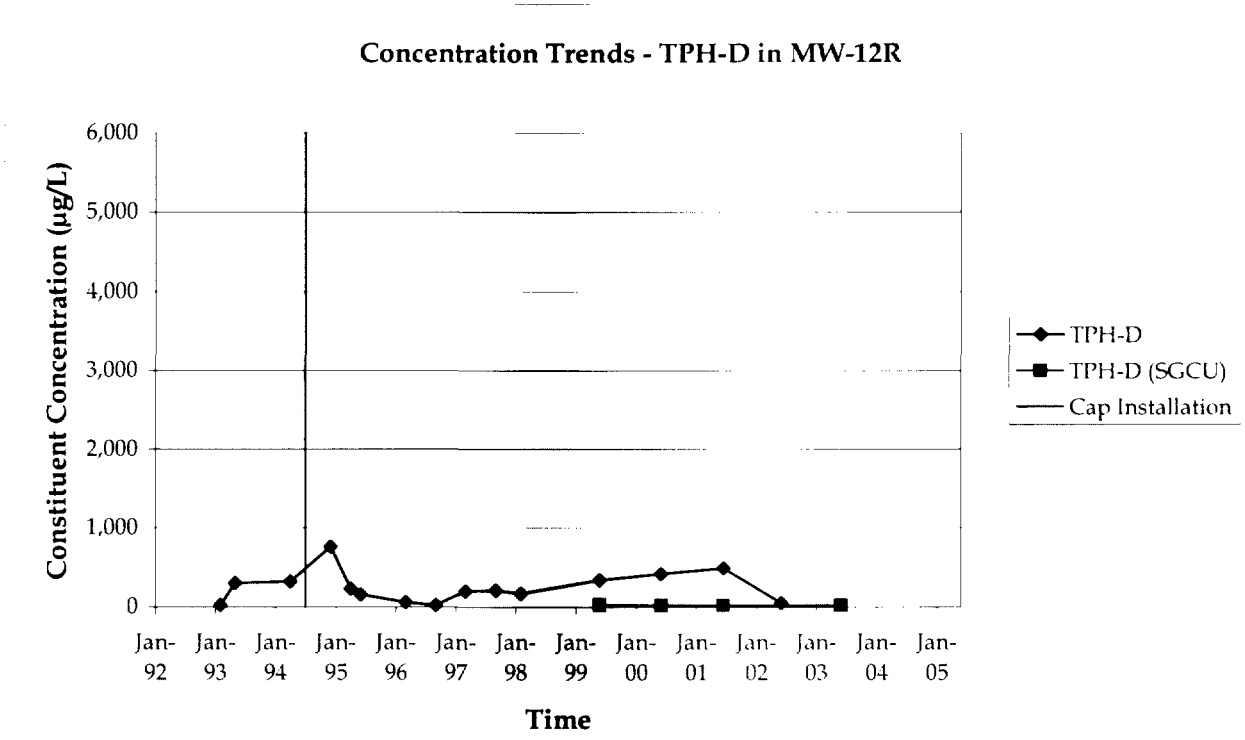


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



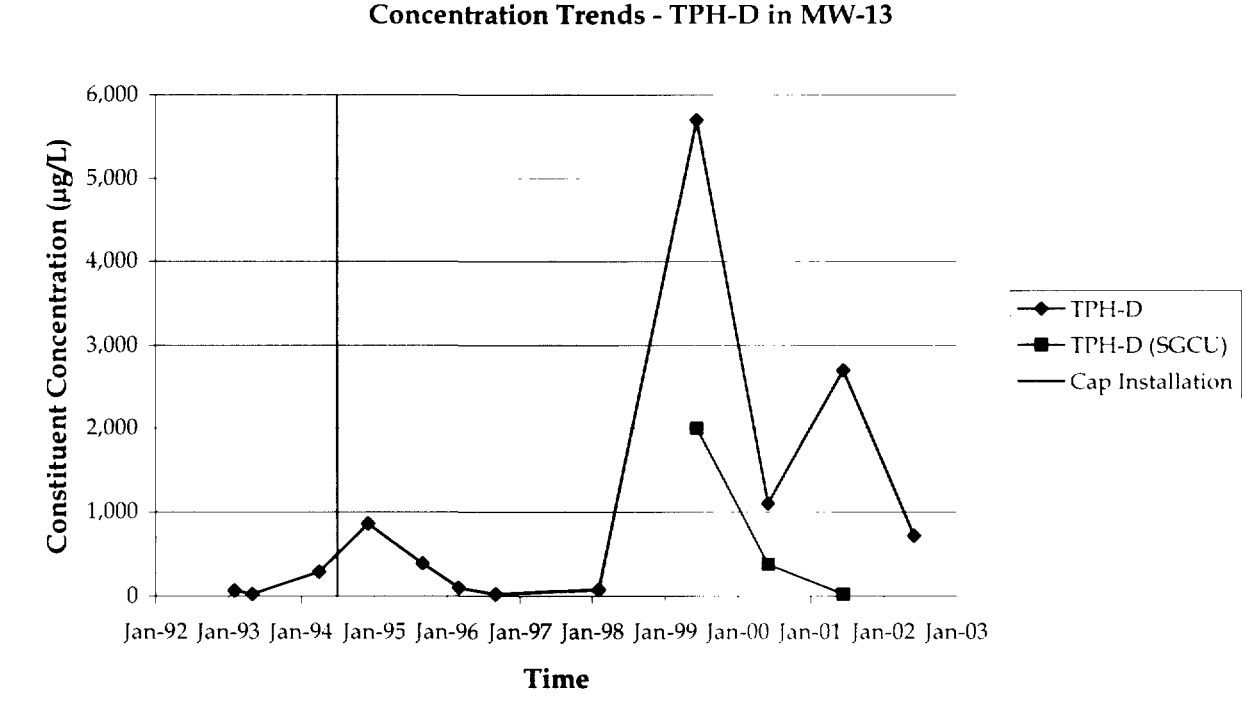
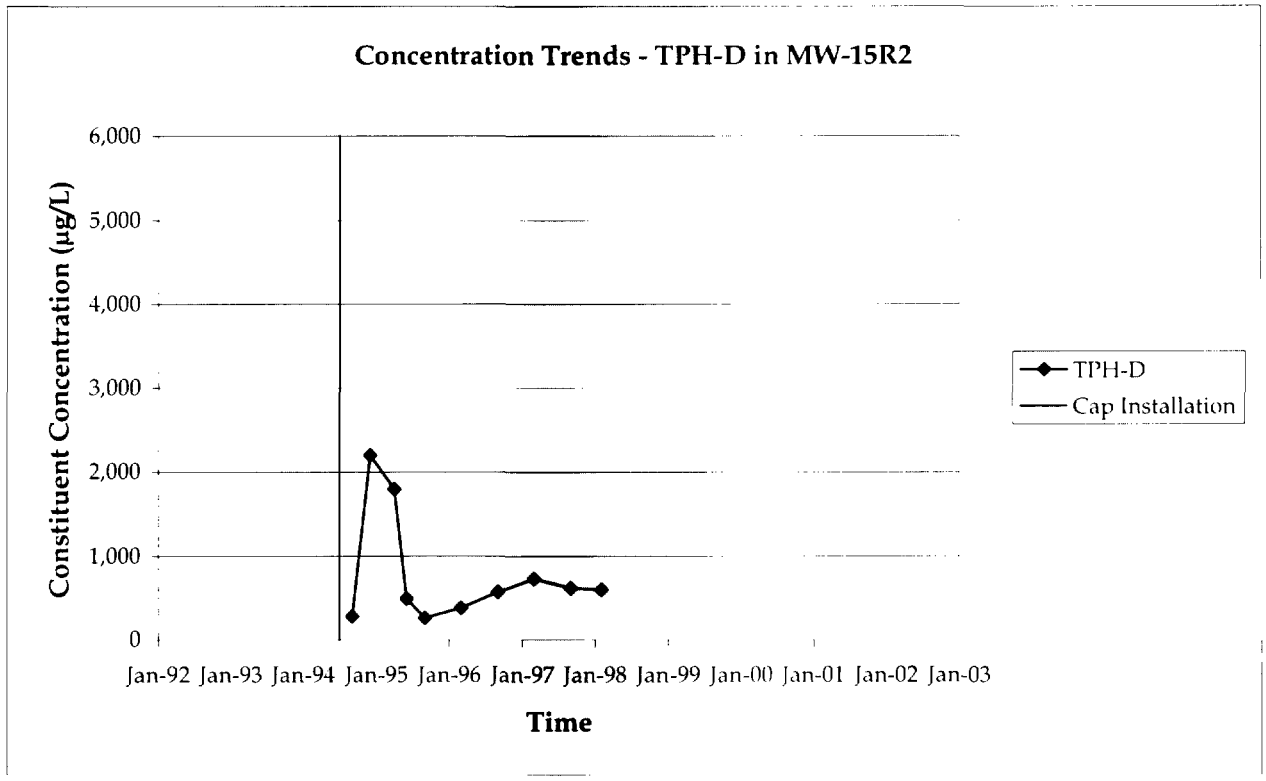


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



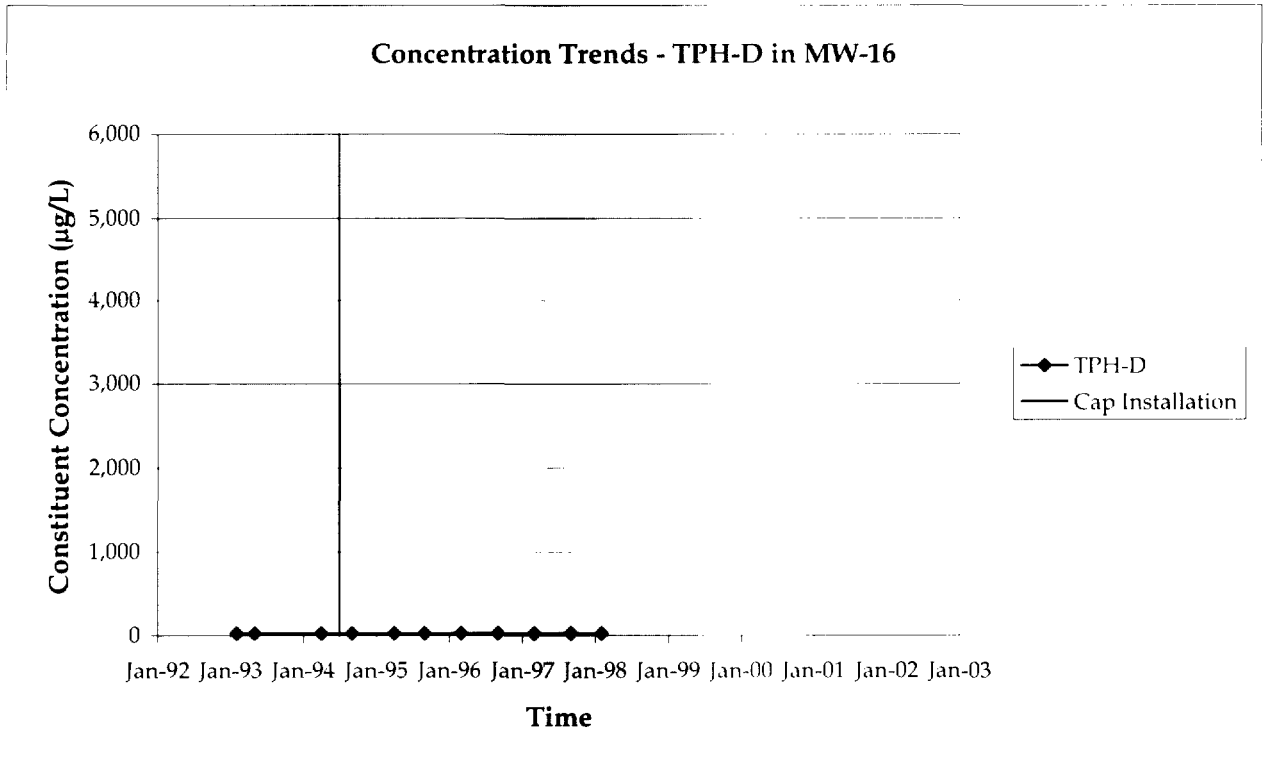


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California

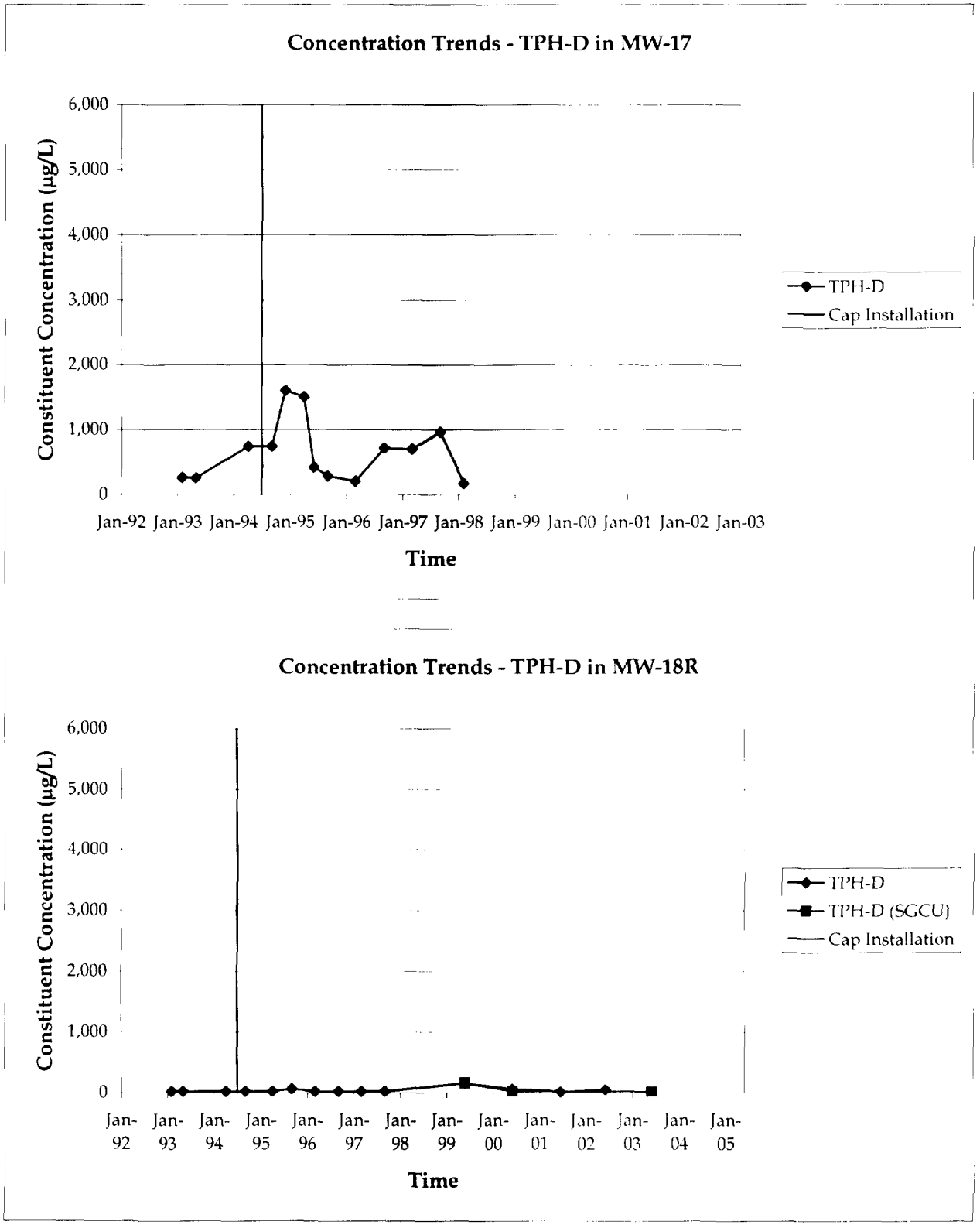
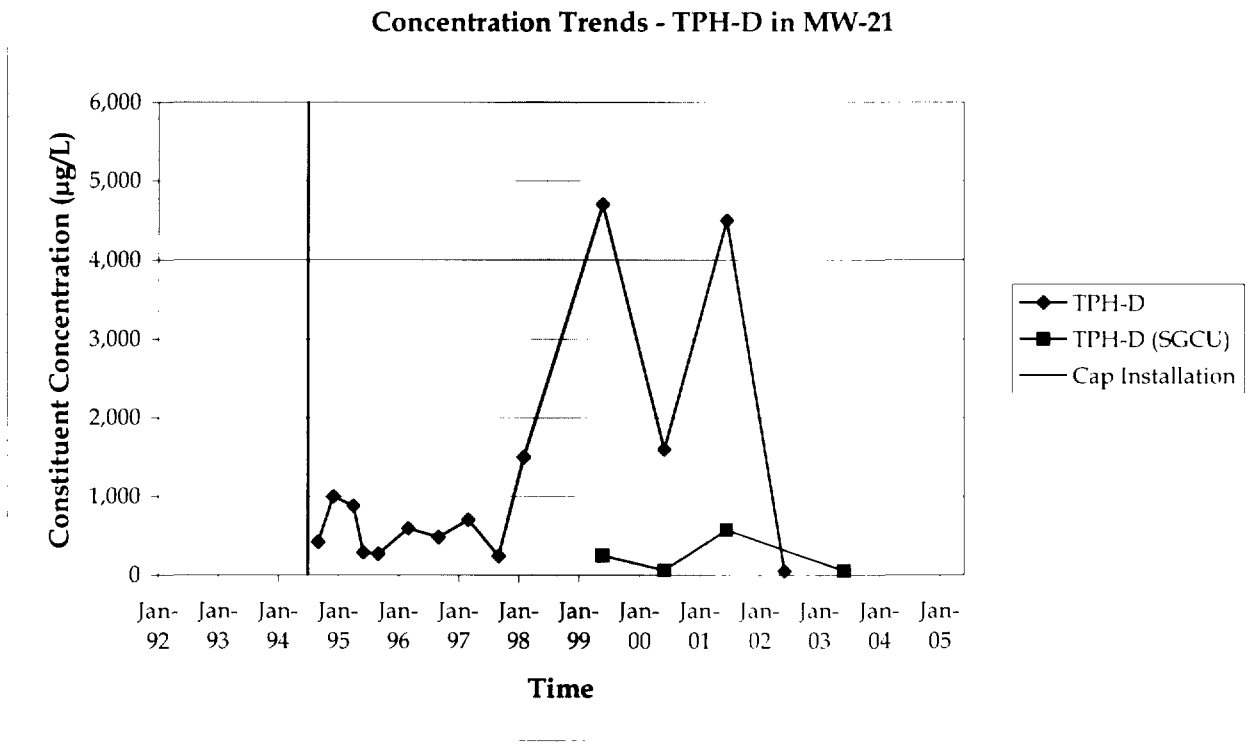


Figure D-2
Concentration Trend Graphs for TPH-D
Liquid Gold Site
Richmond, California



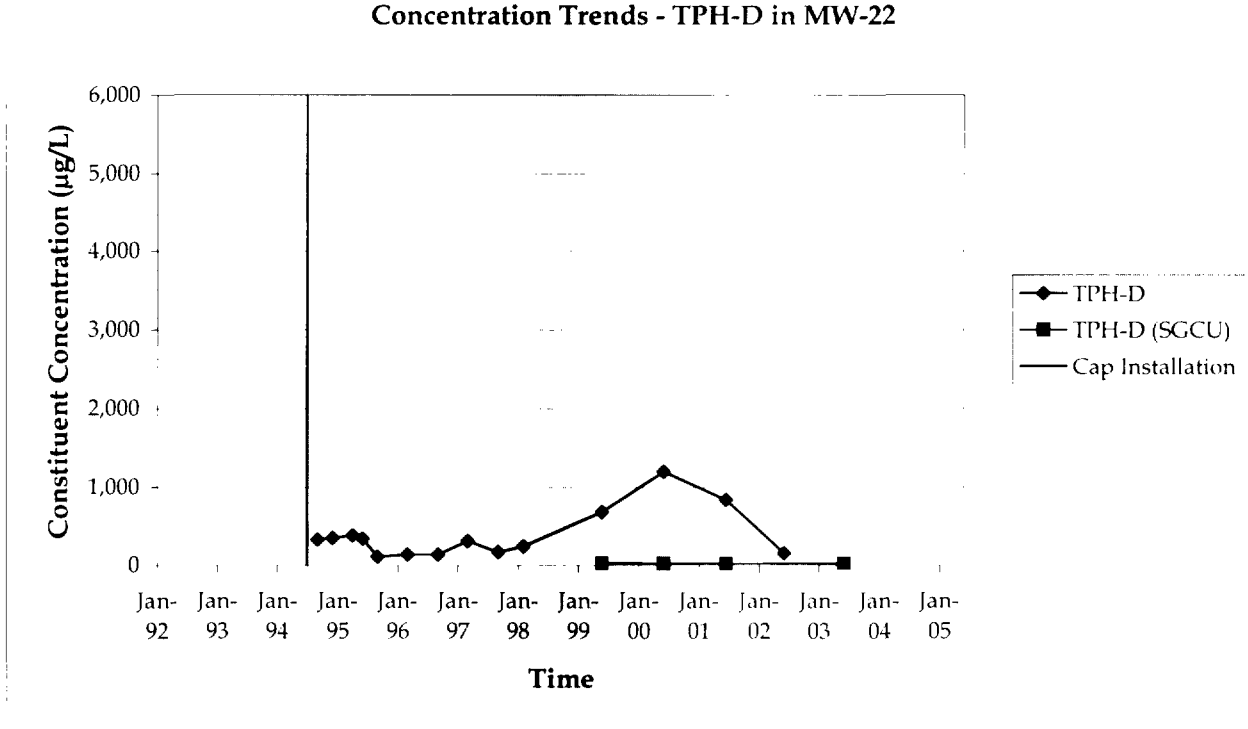
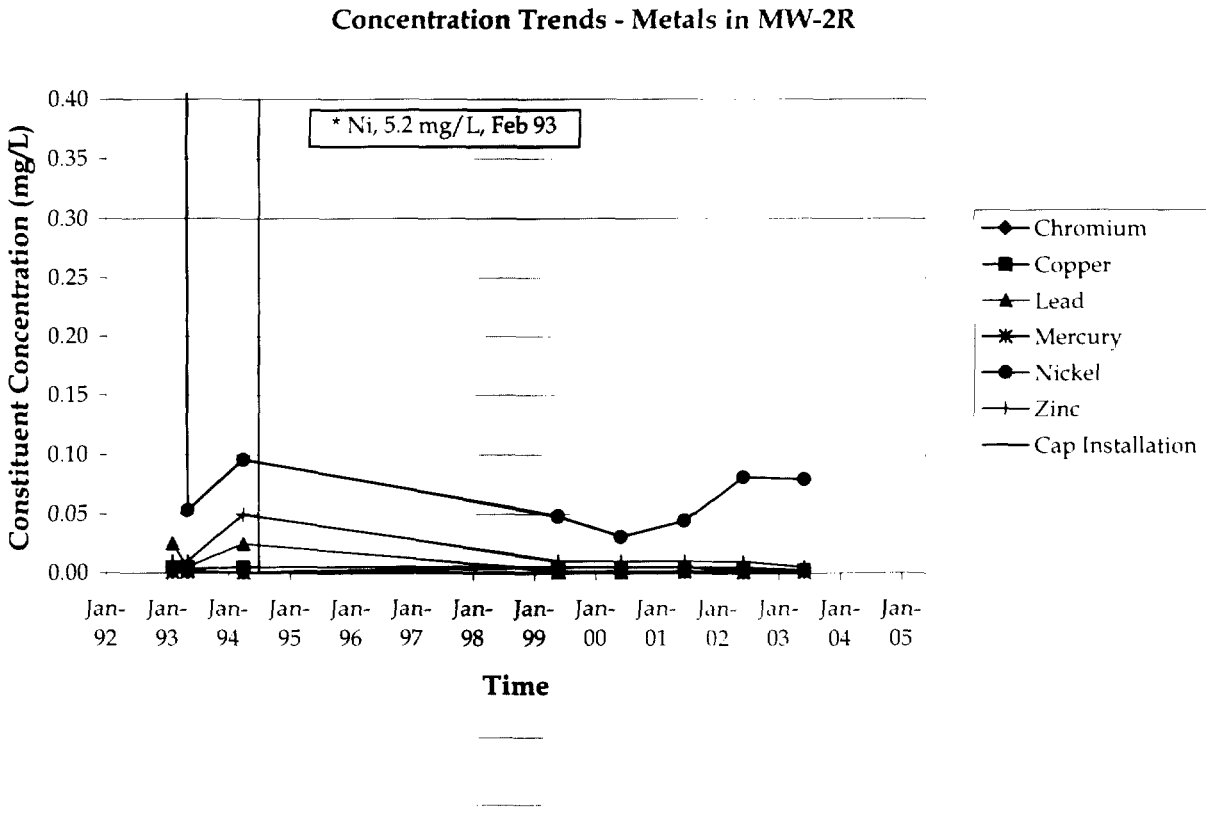


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



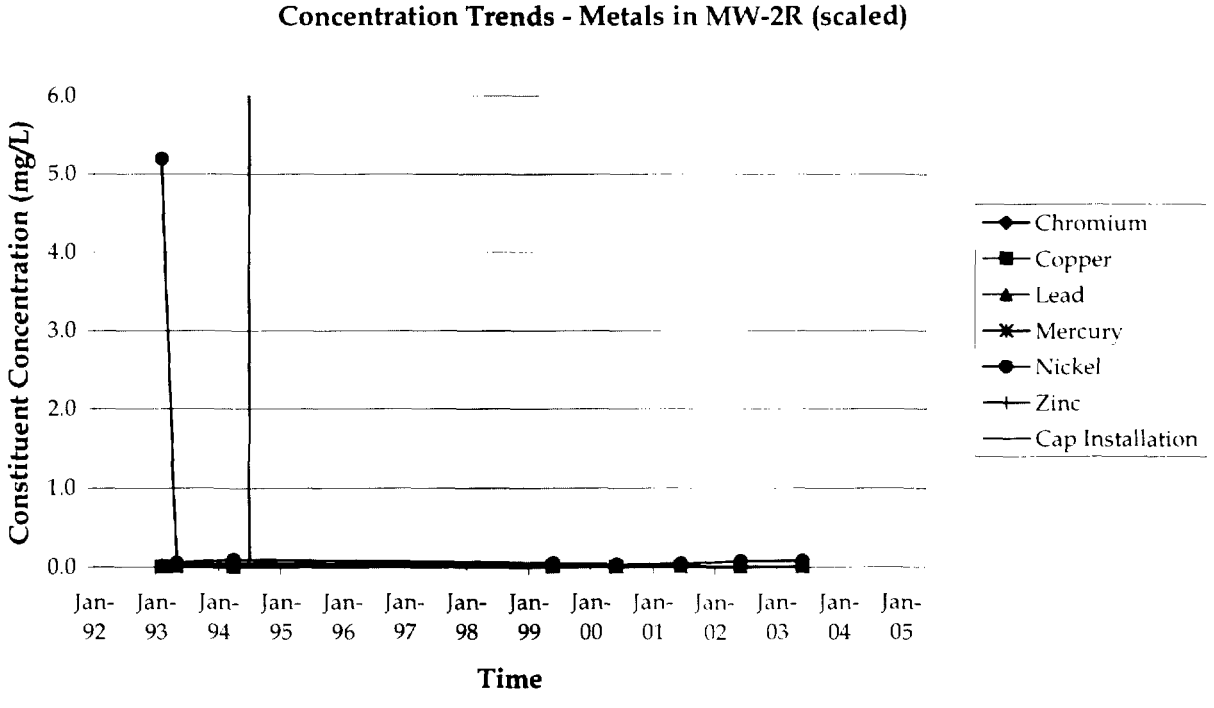
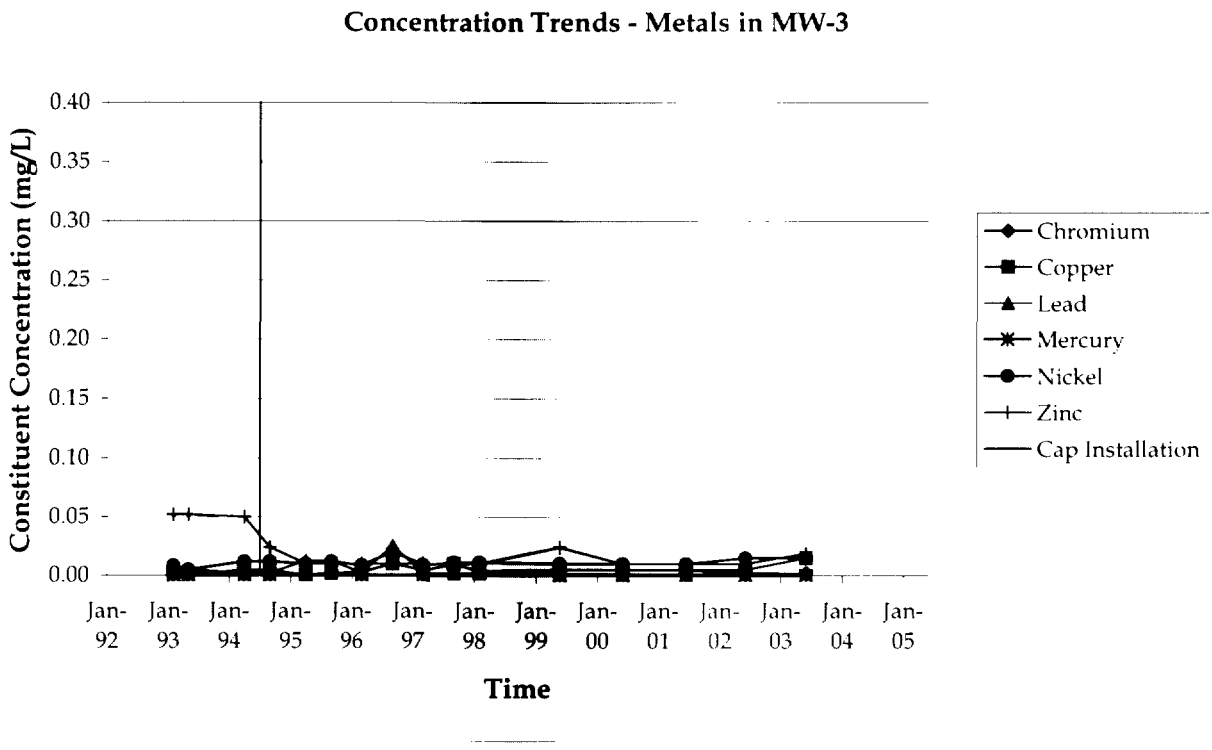


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



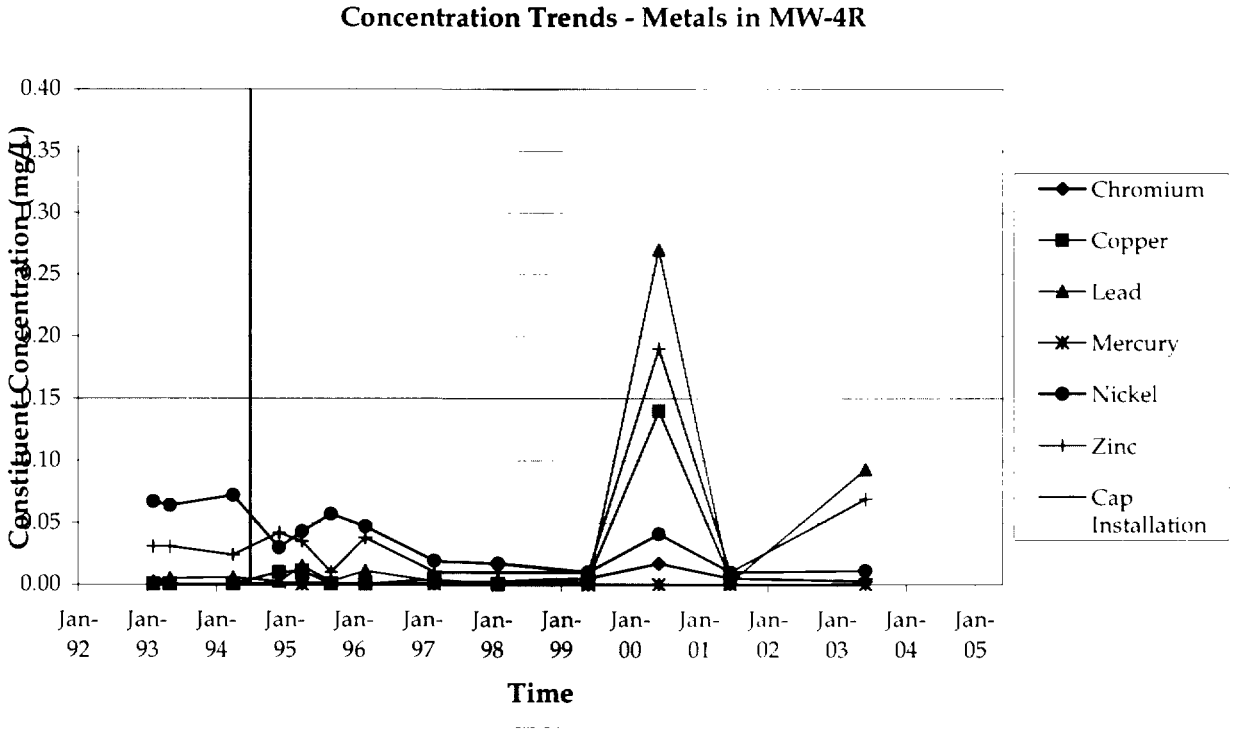
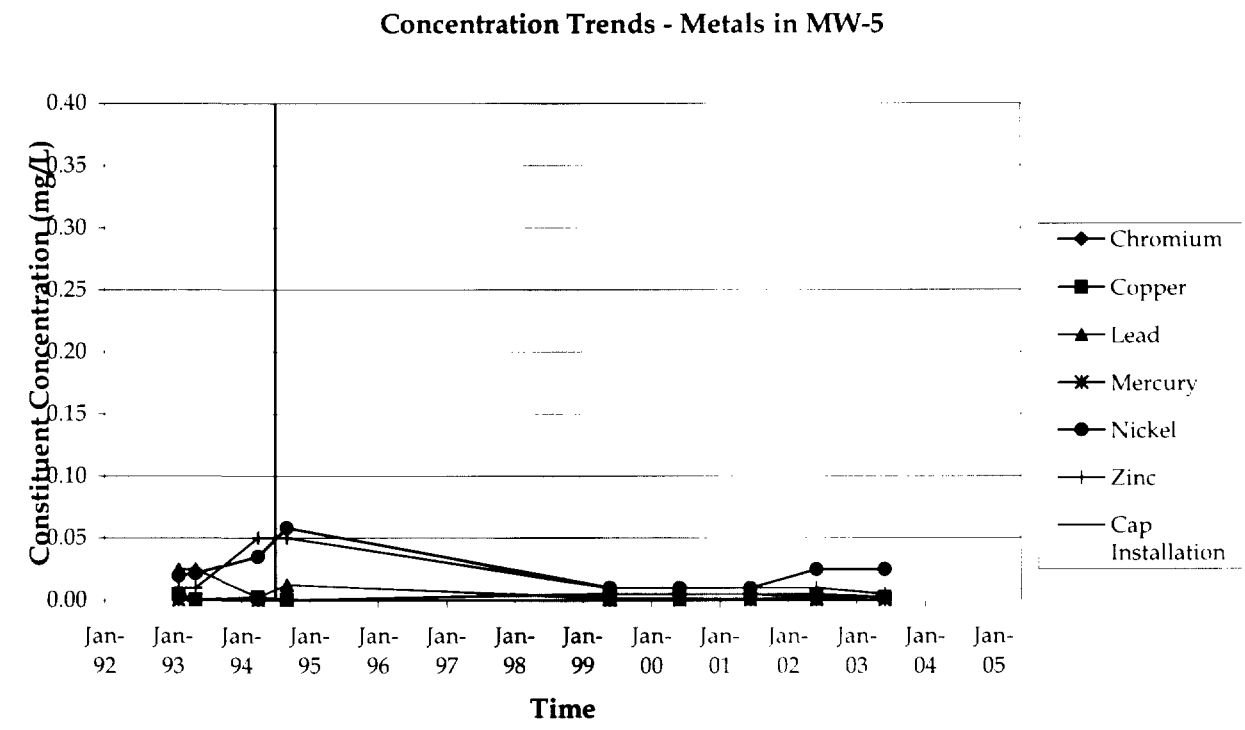


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



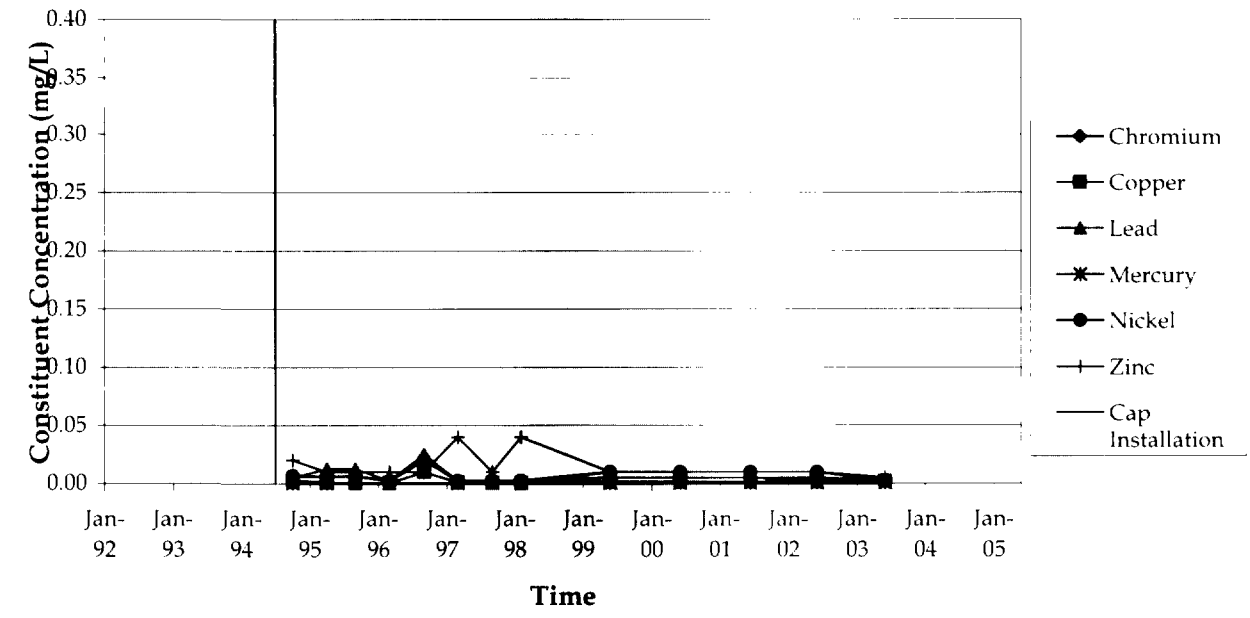
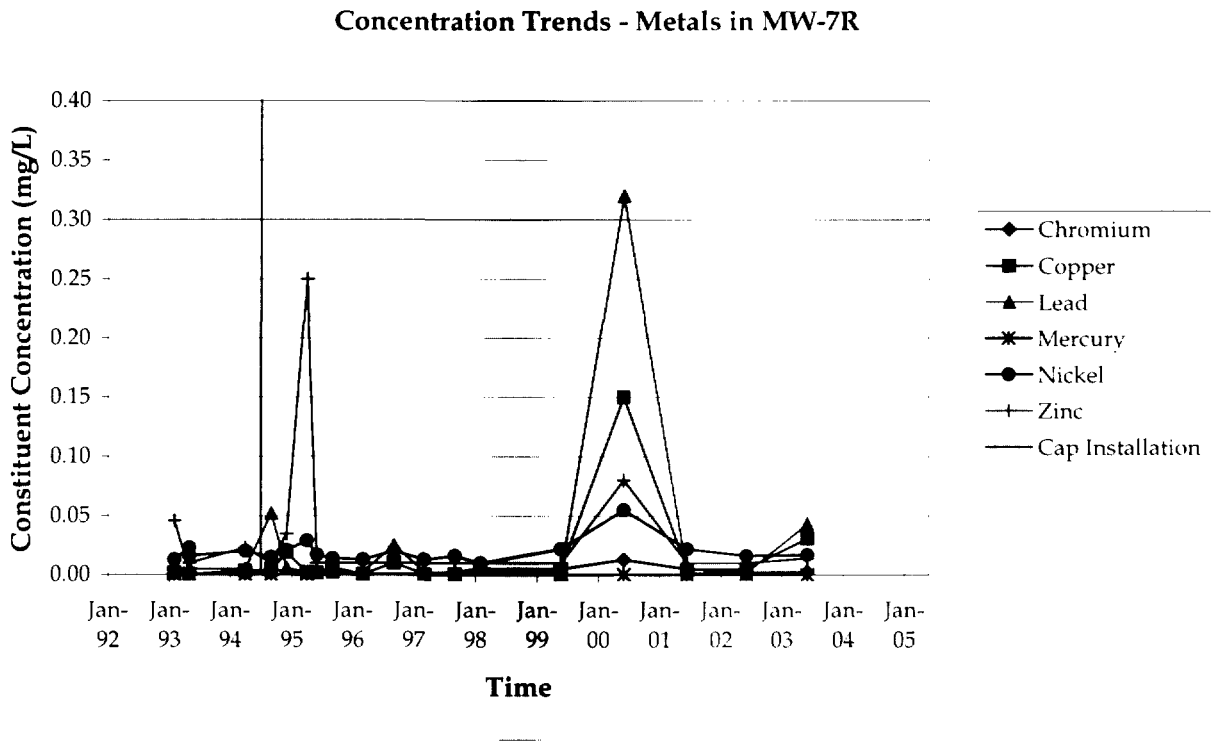


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



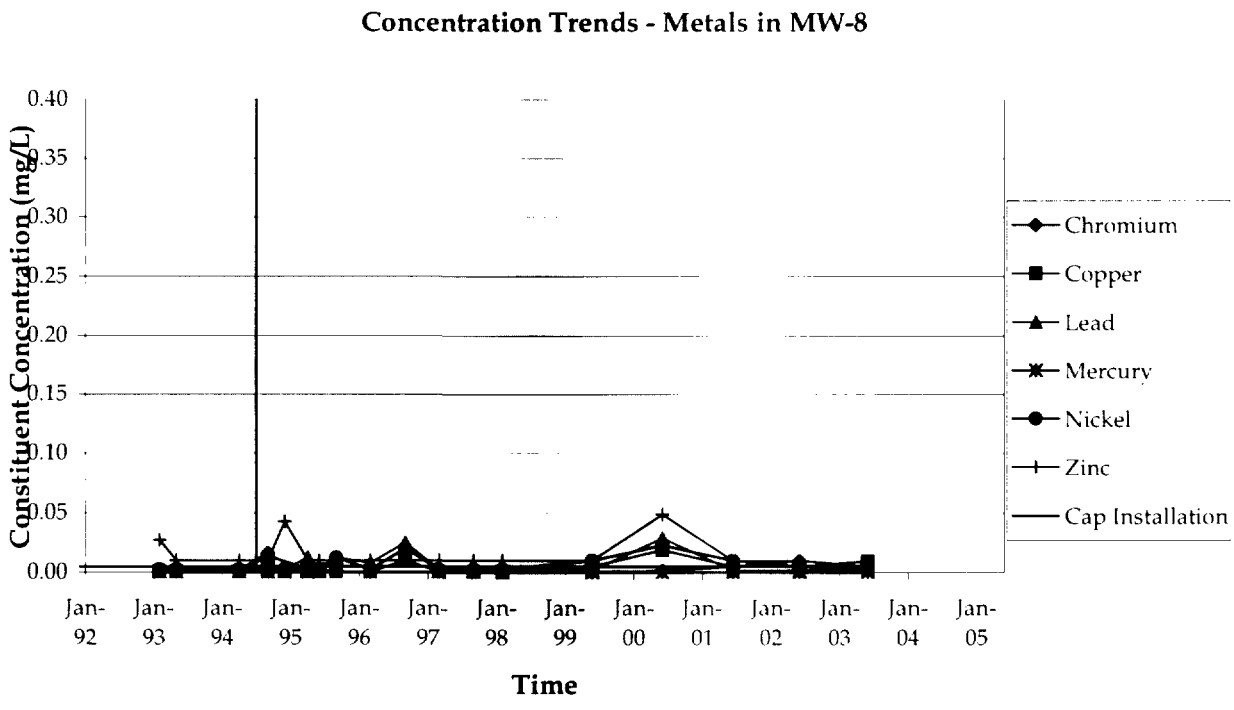
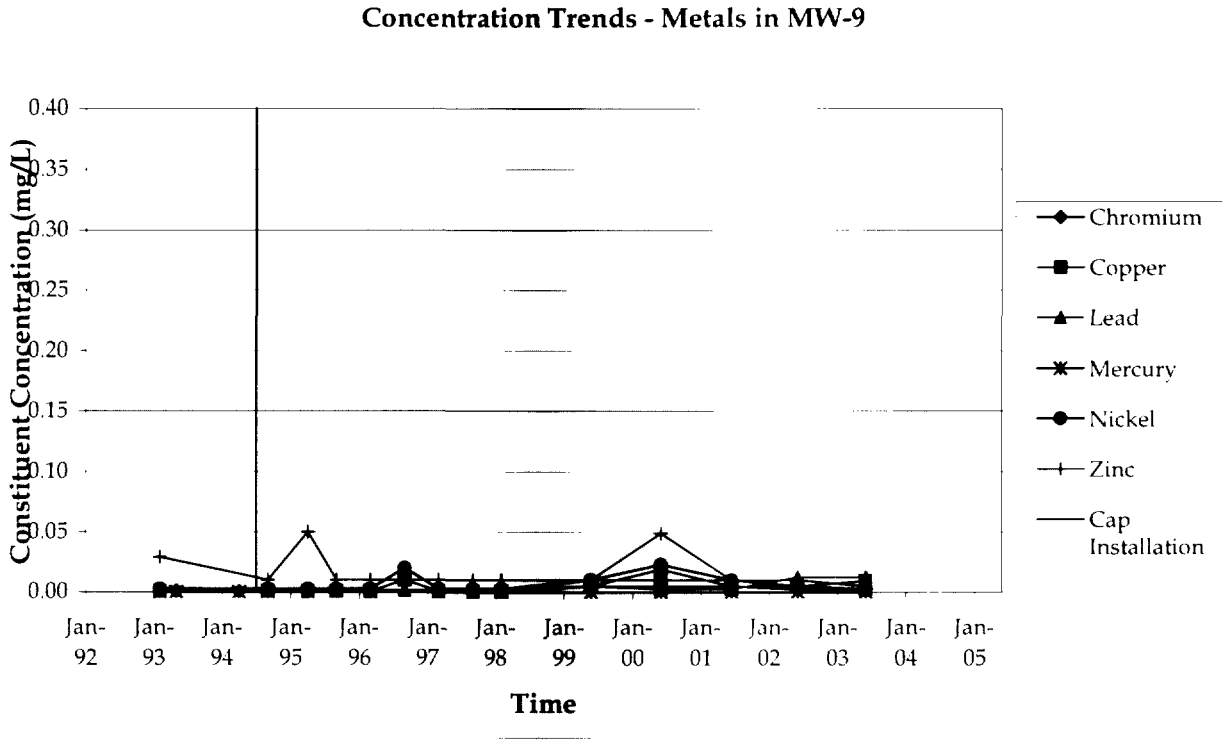


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



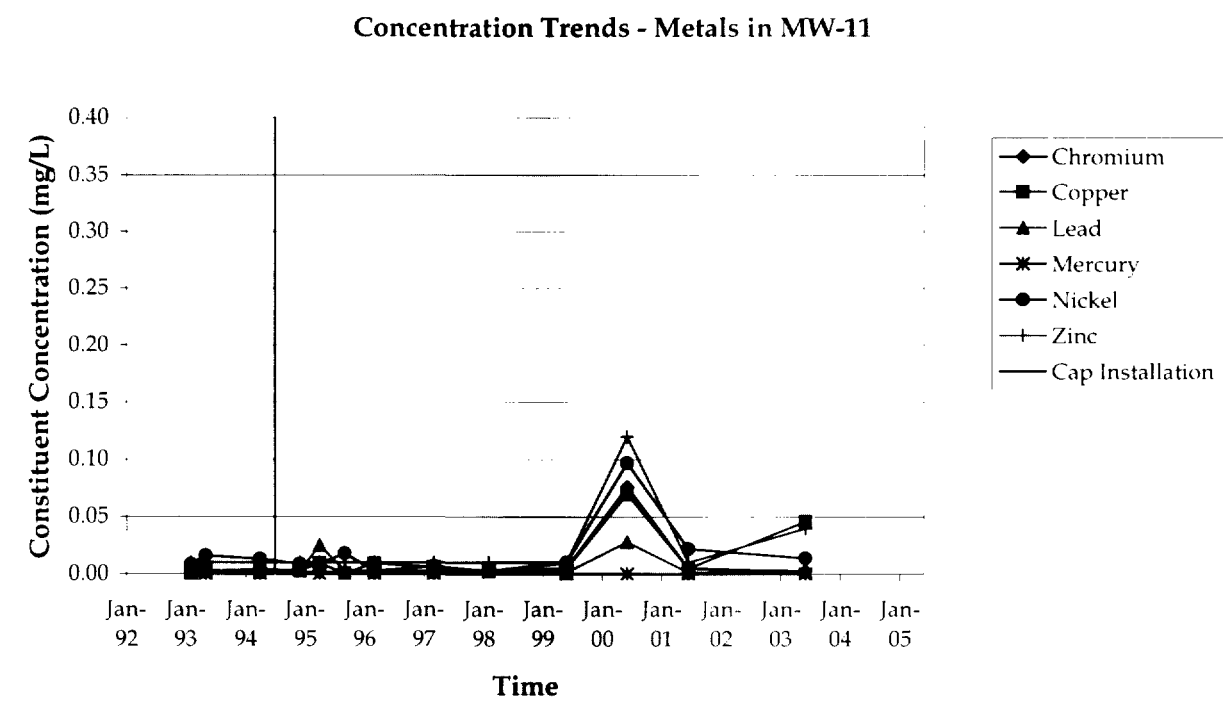
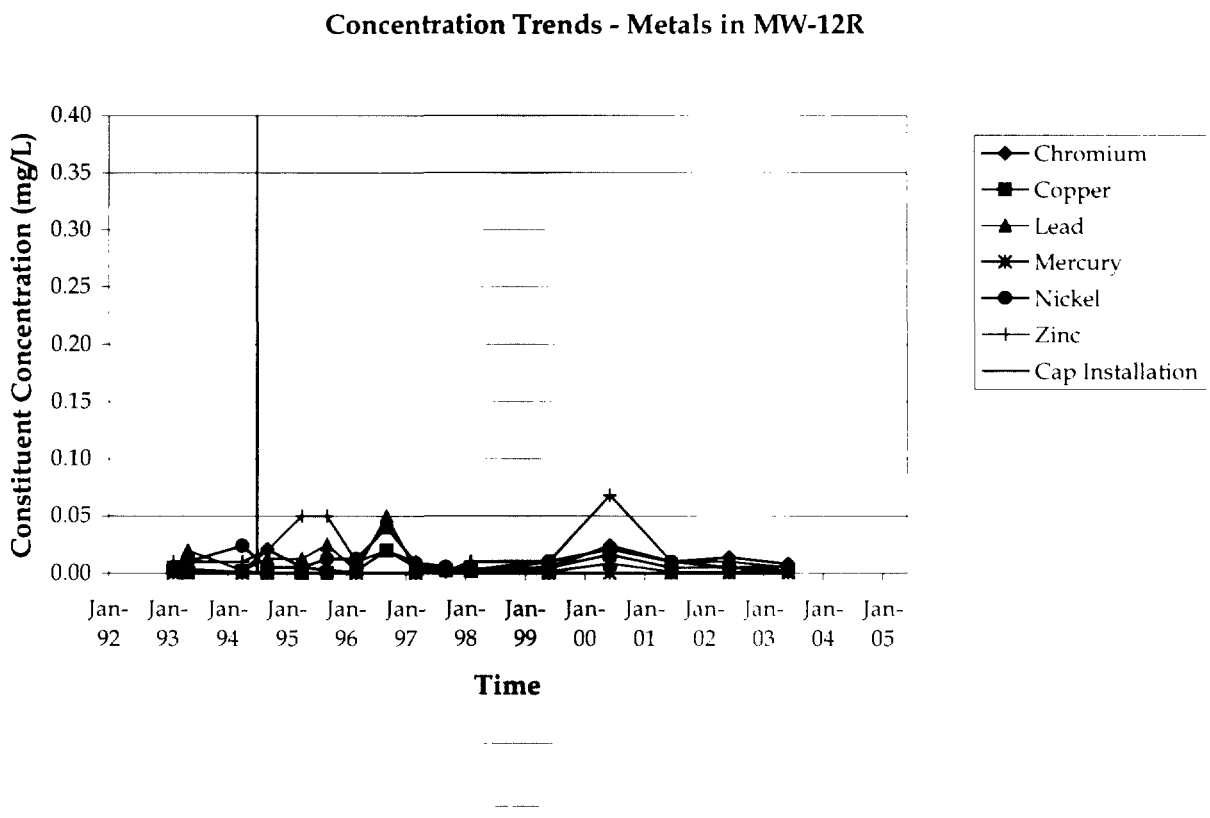


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



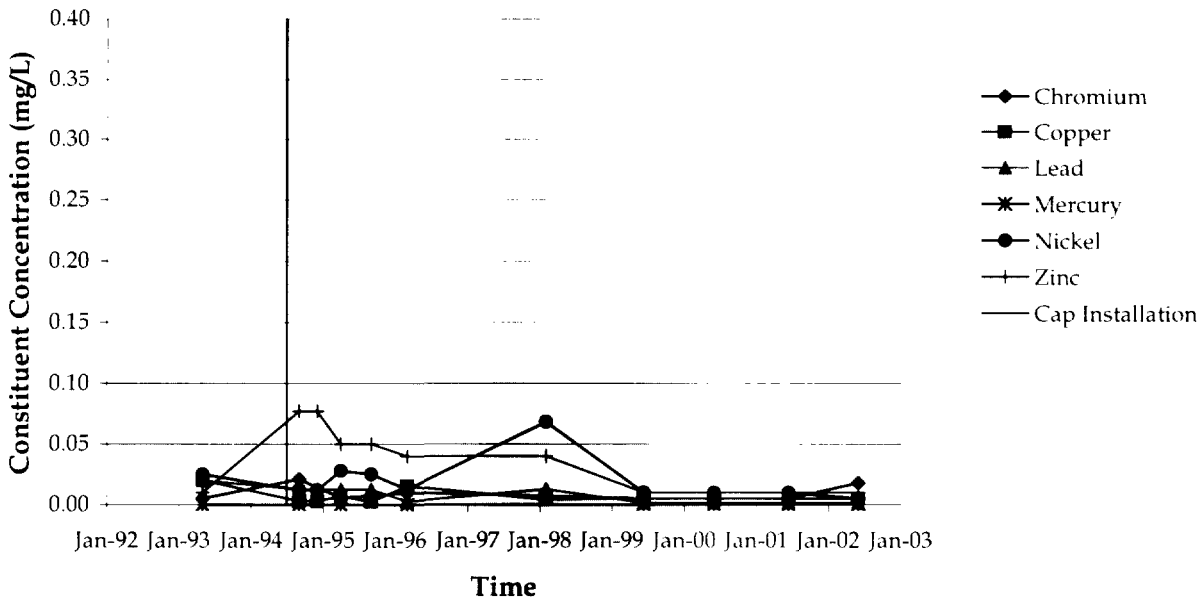
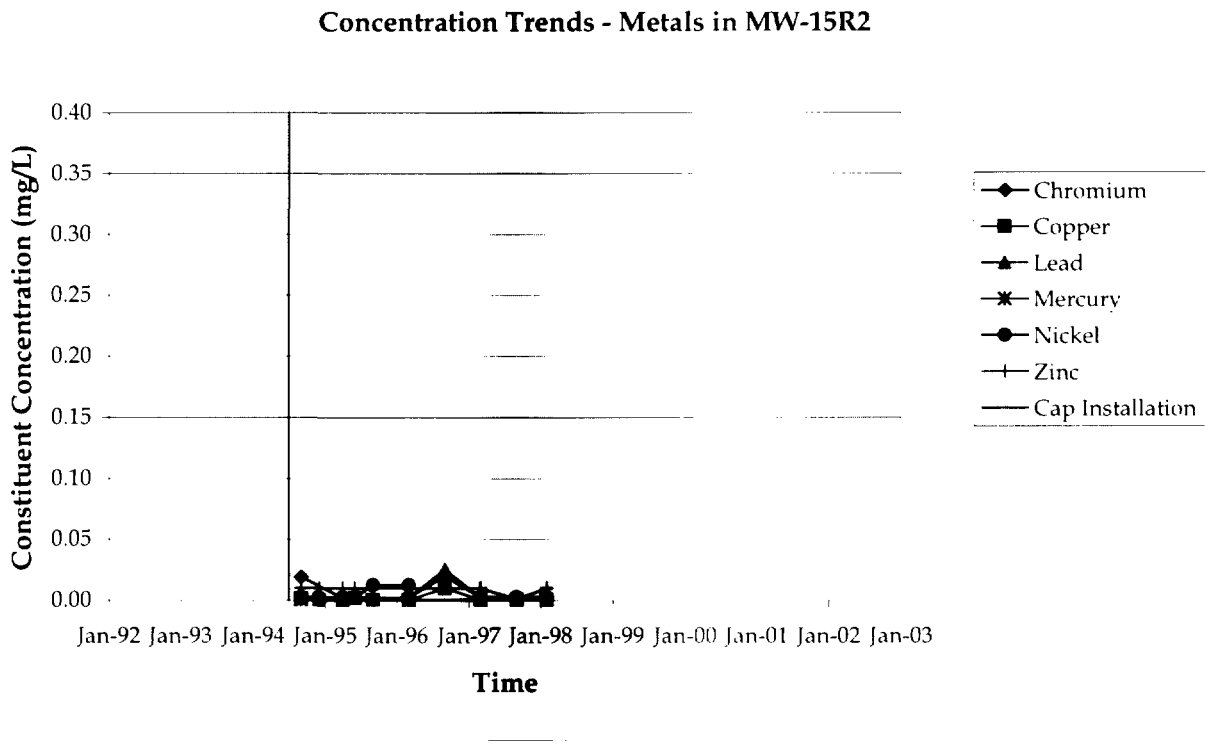


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



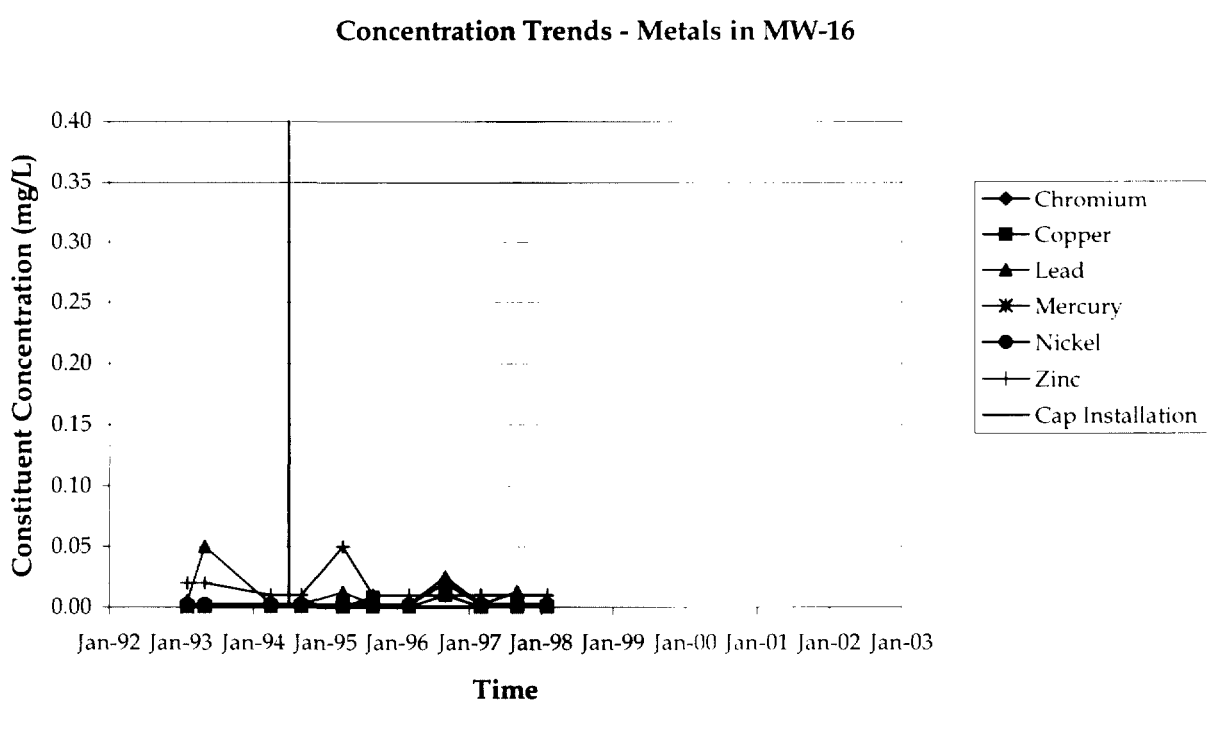
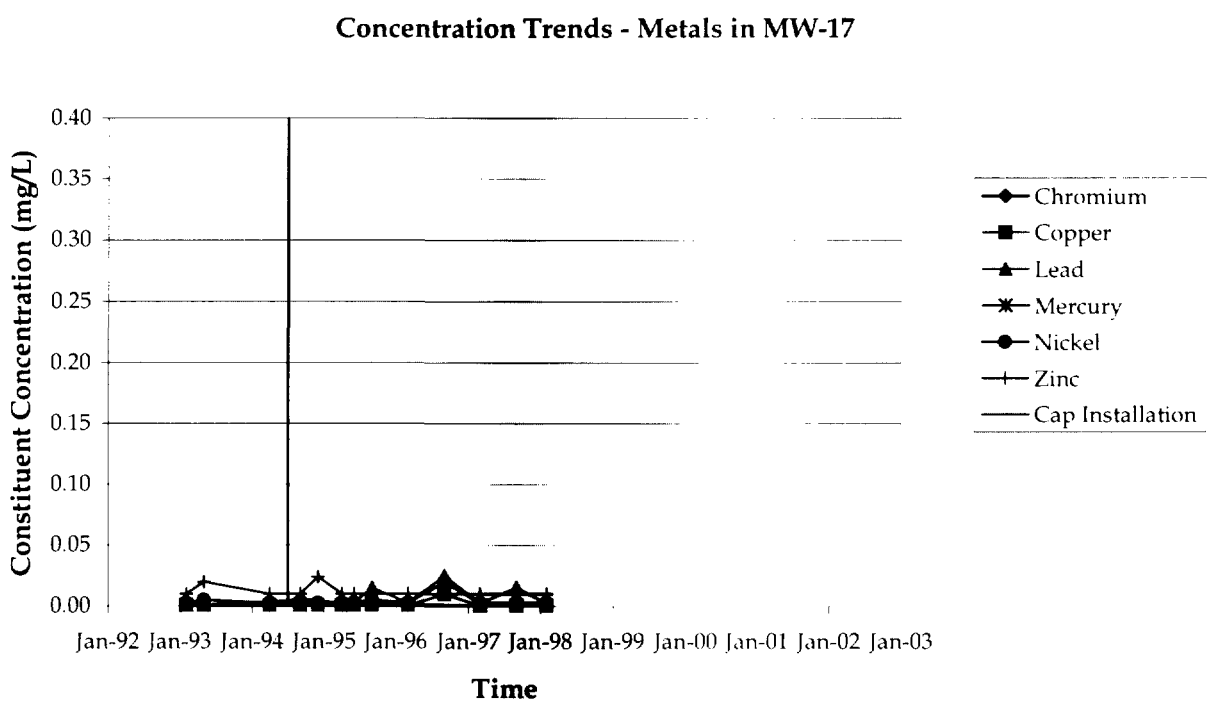


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California



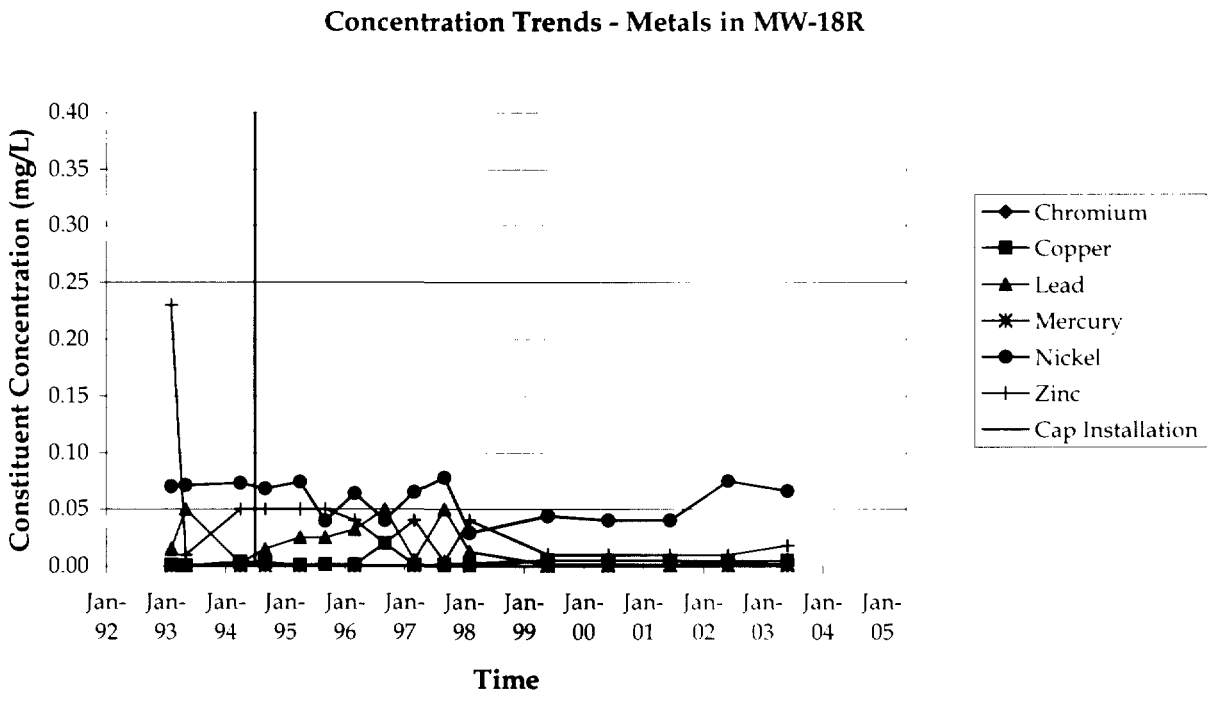
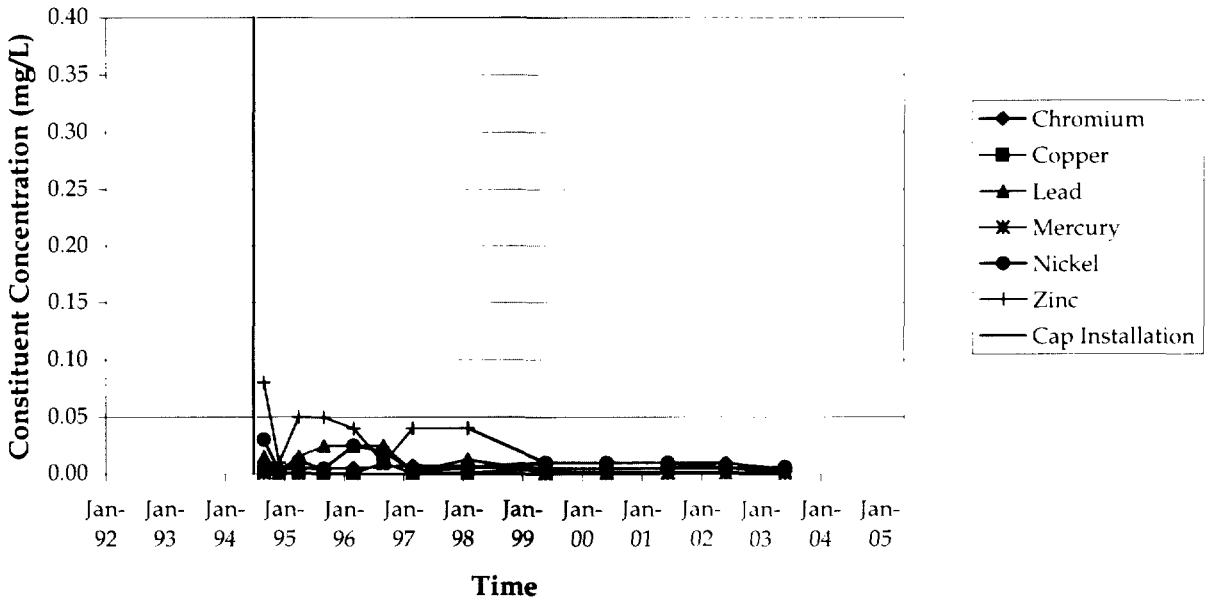
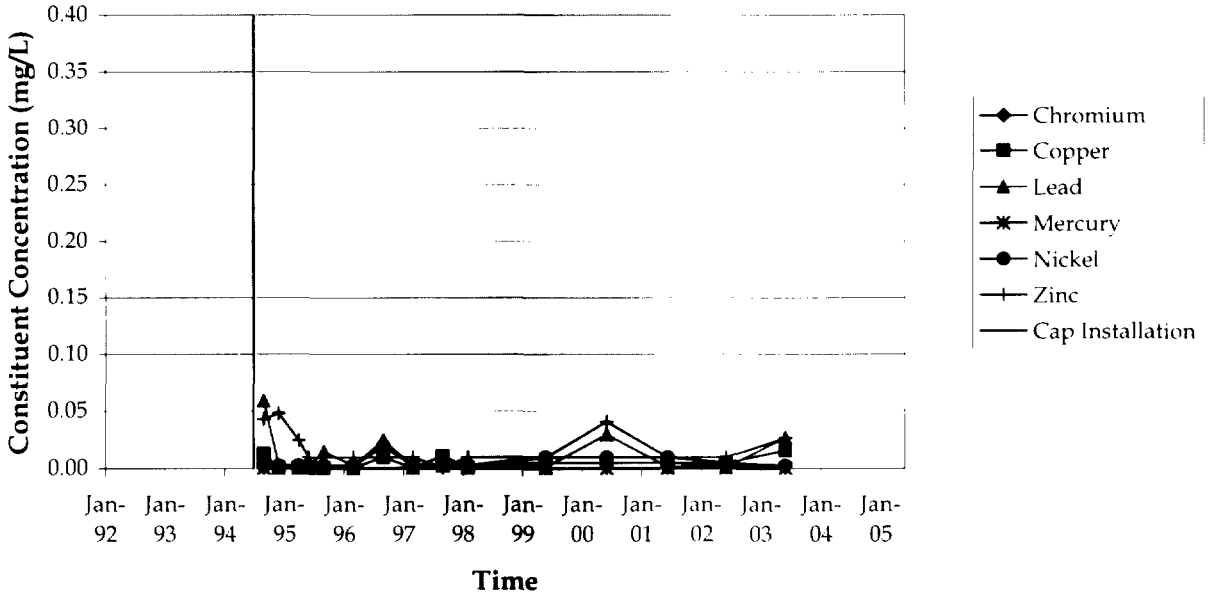


Figure D-1
Concentration Trend Graphs for Metals
Liquid Gold Site
Richmond, California

Concentration Trends - Metals in MW-21



Concentration Trends - Metals in MW-22



Appendix E
Covenant to Restrict Use of Property,
recorded 9-13-95

27

RECORDING REQUESTED BY

SOUTHERN PACIFIC
TRANSPORTATION COMPANY

RECORDED AT REQUEST OF
NORTH AMERICAN TITLE CO.

AND WHEN RECORDED MAIL TO

9-13-95 A
SEP 13 1995 AT 8 O'CLOCK M.
CONTRA COSTA COUNTY RECORDS
STEPHEN L. WEIR
COUNTY RECORDER

Dept. of Toxic Substances Control
700 Heinz, Suite 200
Berkeley, CA 94710

95 152781

FEE $ 8.00

SPACE ABOVE THIS LINE FOR RECORDER'S USE

COVENANT
TO RESTRICT USE OF PROPERTY

THE FORMER "LIQUID GOLD" SITE
RICHMOND, CALIFORNIA

95 152781

COVENANT OF DEED RESTRICTION

COVENANT
TO RESTRICT USE OF PROPERTY

The Former "Liquid Gold" Site
Richmond, California

This Covenant and Agreement ("Covenant") is made on the 25 day of ~~June~~ July, 1995 by Southern Pacific Transportation Company "Covenantor"), which is the owner of record of certain property situated in Richmond, County of Contra Costa, State of California, described in Exhibit "A" attached hereto and incorporated herein by this reference and as shown in Exhibits "B", "C" & "D" attached hereto and incorporated herein by this reference the "Property"), and by the Department of Toxic Substances Control (the "Department" Covenantor and the Department desire and intend that in order to protect the present and future public health and safety, the Property shall be used in such a manner as to avoid potential harm to persons or property which may result from hazardous substances which have been deposited on the Property

ARTICLE I

STATEMENT OF FACTS

1.01 Description of Contamination. The site, commonly

referred to as the Liquid Gold site, consists of about 18 acres of an approximately 40-acre property, including Hoffman Marsh, currently owned by Southern Pacific Transportation Company. The site was formerly the location of an asphalt manufacturing facility and later of Liquid Gold, which operated a waste oil collection, storage and transhipment facility. All operations ceased in 1980 and the site is presently inactive, with the exception of a firing range on a portion of the property.

Soil and groundwater investigations at the site found areas in which the soil contained lead and PAHs at concentrations greater than those acceptable for residential exposure. Concentrations of metals (lead, nickel, and zinc) were found to be elevated in one monitoring well in the shallow groundwater zone. Groundwater in both aquifers is not potable.

The site is being remediated in accordance with the Remedial Action Plan (RAP) which was approved, after public notice and comment, in June, 1993 by the Department and subsequently by the US EPA. The final remedial action includes grading to control runoff patterns; placing 2 feet of clean imported surface soil over a portion of the Property (See Exhibit D); seeding the area with native plants; access restrictions to prevent disturbance of the vegetated soil cover, which include fencing and signage; recording a restrictive covenant on the property to prevent

95 152781

residential development of the site or use of the groundwater below the site; groundwater monitoring for a minimum of 5 years; and removal, consolidation and capping on the upland area of sediments and debris from two drainage channels in the adjacent marsh areas.

93 152791

1.02 Potential Exposure Pathways and Health Risk. Exposure pathways may be via in-place contact, surface water runoff, and wind dispersal, resulting in dermal contact, inhalation, or ingestion by humans or animals. The risk of public exposure is lessened by distance from contaminants, shortened length of time of exposure, containment of contaminants and mitigation measures to control exposure The health effects of contaminants found on site are described in Exhibit E, "Health Effects of the Contaminants."

1.03 Surrounding Land Use. The Property is located in the City of Richmond, west of Interstate 580 and southwest of the Bayview west interchange adjacent to the San Francisco Bay Surrounding the Liquid Gold site are industrial areas to the north across Stege Drainage Channel, Point Isabel, a remediated hazardous substances site now used as park land, to the south, and Highway 580 to the east. To the west and immediately adjacent to the site are tidal wetlands and the San Francisco Bay The nearest residential area is located just east of

Highway 580 and is within one-fourth mile radius A residential area west of Carlson Boulevard and north of Colusa Street is being developed and is within one mile of the site. Neighboring businesses are light industry located north of the site across Stege Drainage Channel and east of Highway 580 in the area west of Carlson Boulevard and north of Colusa Street.

152781

ARTICLE II

GENERAL PROVISIONS

2.01 Provisions to Run with the Land. This Covenant sets forth protective provisions, covenants, restrictions, and conditions (collectively referred to as "Restrictions"), upon and subject to which the Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. Each and all of the Restrictions shall run with the land, and pass with each and every portion of the Property, and shall apply to, inure to the benefit of, and bind the respective successors in interest of Covenantor. Each and all of the Restrictions are imposed upon the entire Property unless expressly stated as applicable to a specific portion of the Property. Each and all of the Restrictions are imposed pursuant to Health and Safety Code Sections 25222.1, 25355.5 and 25356.1 and run with the land pursuant to Health and Safety Code Sections 25222.1, 25230(a)(1) and 25355.5. Each and all of the Restrictions are for the benefit of and enforceable by the

Department.

2.02 Concurrence of Owners Presumed All purchasers, lessees, or possessors of any portion of the Property shall be deemed by their purchase, leasing, or possession of such Property, to be in accord with the foregoing and to agree for and among themselves, their heirs, successors, and assignees, and the agents, employees, and lessees of such owners, heirs, successors, and assignees, that the Restrictions as herein established must be adhered to for the benefit of future Owners and Occupants and that their interest in the Property shall be subject to the Restrictions contained herein

2.03 Incorporation into Deeds and Leases. Covenantor desires and covenants that the Restrictions set out herein shall be incorporated by reference in each and all future deeds and leases of any portion of the Property

2.04 Statement Regarding Condition of the Property. The purpose of this Covenant is to protect occupants of the Property and the general public from exposure to residual contaminants which may pose human health concerns by restricting use of the Property appropriately. Accordingly, this Covenant is not, and shall not be construed as, a statement, admission, or declaration that the Covenantor or the Department intends to create or permit

to exist on the Property a health, safety, environmental, or other hazard or nuisance.

152781

ARTICLE III

DEFINITIONS

3.01 Department "Department" shall mean the California State Department of Toxic Substances Control and shall include its successor agencies, if any.

3.02 Improvements. "Improvements" shall mean all buildings, roads, driveways, regrading, and paved parking areas, constructed or placed upon any portion of the Property.

3.03 Occupant(s). "Occupant(s) shall mean those persons entitled by ownership, leasehold, or other legal relationship to the exclusive right to occupy any portion of the Property. Occupants shall not include an occupant's licensees or invitees

3.04 Owner(s). "Owner(s)" shall mean the Covenantor or its successors in interest, including heirs and assigns, who hold title to all or any portion of the Property.

3.05 Director. "Director" shall mean the Director of the California Department of Toxic Substances Control or his or her

designee.

ARTICLE IV

DEVELOPMENT, USE, AND CONVEYANCE OF THE PROPERTY

4.01 Restrictions on Development and Use. Covenantor promises to restrict the use of the Property as described in said Exhibit A as follows:

a. Property shall be restricted to parks, open space, commercial or industrial uses.

b. Residential development for human habitation shall not be permitted on the Property.

c. Hospitals or health clinics shall not be permitted on the Property.

d. Day-care centers for either children or senior citizens shall not be permitted on the Property.

e. Schools for children under 21 years of age shall not be permitted on the Property.

f. No groundwater shall be extracted on the Property for purposes other than site remediation or construction dewatering.

g. No raising of food (cattle, food crops, cotton,

chickens) shall be permitted on the Property.

h Subdivision of the Property is forbidden, except as allowed under Health and Safety Code Section 25232(a 2) and (b)(2).

i. No activities which will disturb the soil (e.g., excavation, grading, removal, trenching, filling, earth movement, or mining) shall be permitted on the Property without a Health and Safety Plan and a Soils Management Plan submitted to the Department for review and approval.

j. The Property shall be posted with a bilingual sign in English and Spanish stating that no grading, excavation or construction activities can occur on the Property without written permission of the Department.

k. Any contaminated soils brought to the surface by grading, excavation, trenching or backfilling shall be managed in accordance with all applicable provisions of state and federal law

l. All uses and development of the Property shall preserve the integrity of the vegetated soil cover and shall not disturb the integrity of any hazardous substances containment.

m. The Owner(s)/Occupant(s) shall maintain all vegetated soil cover, groundwater monitoring wells, fences, gates and warning signs, as specified in the Draft Remedial Action

95 152781

Plan and Operation and Maintenance Plan for the Site.

n. Any proposed alteration of the vegetated soil cover shall require written approval by the Department.

o. The Owner(s) shall monitor the vegetated soil cover yearly for deterioration and integrity.

p. The Owner(s shall notify the Department of each of the following: 1 The type, cause, location and date of any disturbance to the vegetated soil cover which could affect its ability to contain subsurface hazardous substances on ~~the Property and 2 The type and date of repair of such~~ disturbance Notification to the Department shall be made by registered mail within ten (10) working days of both the discovery of the disturbance and the completion of repairs

q If groundwater monitoring detects contamination at levels of concern, the Owner(s) shall develop and submit a plan of action for Department approval.

r. The Department shall be allowed access to the Property for inspection, surveillance, monitoring, maintenance, and other activities consistent with the purposes of this covenant as deemed necessary by the Department in order to protect the public health and safety. Except in case of emergency, Department personnel shall conduct inspections during normal business hours, notify the Owner(s in

95 152781

advance, or upon arrival at the property, of their desire to inspect the property and shall not attempt to inspect the property without notice to, or unaccompanied by, a representative of the owner.

s. Prior to sale, lease, or rental, the Owner(s) shall give written notice to purchasers, lessees, and tenants stating that there is residual contamination as specified in Health and Safety Code Section 25359.7(a).

4.02 Conveyance of Property. The Owner(s) shall provide a fifteen (15 days advance notice to the Department of any sale, lease or other conveyance of the Property or an interest in the Property to a third person. The Department shall not, by reason of the Covenant, have authority to approve, disapprove, or otherwise affect any sale, lease, or other conveyance of the Property.

4.03 Enforcement. Failure of the Owner(s) to comply with any of the requirements, as set forth in Section 4.01, shall be grounds for the Department, by reason of the Covenant, to require that the Owner(s) modify or remove any improvements constructed in violation of Section 4.01. Violation of the Covenant shall be grounds for the Department to file civil and criminal actions against the Owner(s) as provided by law.

ARTICLE V

95 152781

VARIANCE AND TERMINATION

5.01 Variance. Any Owner(s) or, with the Owner(s)' written consent, any Occupant of the Property or any portion thereof may apply to the Department for a written variance from the provisions of this Covenant. Such application shall be made in accordance with Section 25233, Health and Safety Code. The Department shall provide notice to the Owner(s) before taking action on any such application by any Occupant and shall permit the Owner(s) to intervene in any proceeding on the application, as set forth in said Section 25233.

5.02 Termination. Any Owner(s) or, with the Owner's(s') written consent, any Occupant of the Property or a portion thereof may apply to the Department for a termination of the Restrictions as they apply to all or any portion of the Property. Such application shall be made in accordance with Section 25234, Health and Safety Code. The Department shall provide notice to the Owner before taking action on any such application by any Occupant and shall permit the Owner(s) to intervene in any proceeding on the application, as set forth in said Section 25233.

5.03 Term. Unless terminated in accordance with Section 5.02 above, by law or otherwise, this Covenant shall continue in effect in perpetuity.

95 152781

95 152781

ARTICLE VI

MISCELLANEOUS

6.01 No Dedication Intended Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication, of the Property or any portion thereof to the general public or for any purposes whatsoever.

6.02 Notices. Whenever any person gives or serves any notice, demand, or other communication with respect to this Covenant, each such notice, demand, or other communication shall be in writing and shall be deemed effective 1 when delivered, if personally delivered to the person being served or to an officer of a corporate party being served or official of a government agency being served, or 2) five (5 business days after deposit in the mail if mailed by United States mail, postage paid certified, return receipt requested:

To: "Covenantor" c/o Law Department
Southern Pacific Transportation Company
One Market Plaza, Eighth Floor
San Francisco, CA 94105

To: Dept. of Toxic Substances Control, Region 2
700 Heinz Avenue, Suite 200
Berkeley, CA 94710
Attention: Chief, Site Mitigation Branch

6.03 Partial Invalidity. If any portion of the Restrictions or terms set forth herein is determined to be

invalid for any reason, the remaining portion shall remain in full force and effect as if such portion had not been included herein.

95 152781

6.04 Article Headings. Headings at the beginning of each numbered article of this Covenant are solely for the convenience of the parties and are not a part of the Covenant.

6.05 Recordation This instrument shall be executed by the Covenantor and by the Site Mitigation Branch Chief, California Department of Toxic Substances Control. This instrument shall be recorded by the Covenantor in the County of Contra Costa within ten 10) days of the date of execution.

6.06 References. All references to Code sections include successor provisions.

6.07 Cure. The Department shall give Covenantor written notice and a reasonable opportunity to cure any alleged default by Covenantor prior to exercising its remedies.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

OWNER: Southern Pacific Transportation Co.

By: _____

Title: Asst. Vice President and General Manager Real Estate

Date: July 5, 1995

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

By: _____

Barbara Cook

Chief, Site Mitigation Branch, Region 2

Date: July 25, 1995

95 152781

95 152781

STATE OF CALIFORNIA

COUNTY OF Alameda

On July 25 1995 before me, the undersigned, a Notary Public in and for said state, personally appeared Barbara Cook, personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the Department of Toxic Substances Control executed the instrument

WITNESS my hand and official seal.

Signature A Igdari (Seal

A. IGDARI
Comm. #975514
NOTARY PUBLIC - CALIFORNIA
ALAMEDA COUNTY
Comm. Expires Oct. 18, 1998

STATE OF CALIFORNIA

COUNTY OF SAN FRANCISCO

95 152781

On JULY 10, 1995 before me, the undersigned, a Notary Public in and for said state personally appeared M. W. CASEY personally known to me or proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/she executed the same in his/her authorized capacity, and that by his/her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument

WITNESS my hand and official seal.

Signature Joseph F. Jubilado (Seal)

JOSEPH F. JUBILADO
COMM. # 1058369
Notary Public — California
SAN FRANCISCO COUNTY
My Comm. Expires JUN 5, 1999

EXHIBITS

EXHIBIT A

LEGAL DESCRIPTION OF SITE

April 8, 1993
0132-93-00

95 152781

LEGAL DESCRIPTION
For
DEED RESTRICTION
AT SOUTHERN PACIFIC TRANSPORTATION COMPANY
LIQUID GOLD SITE

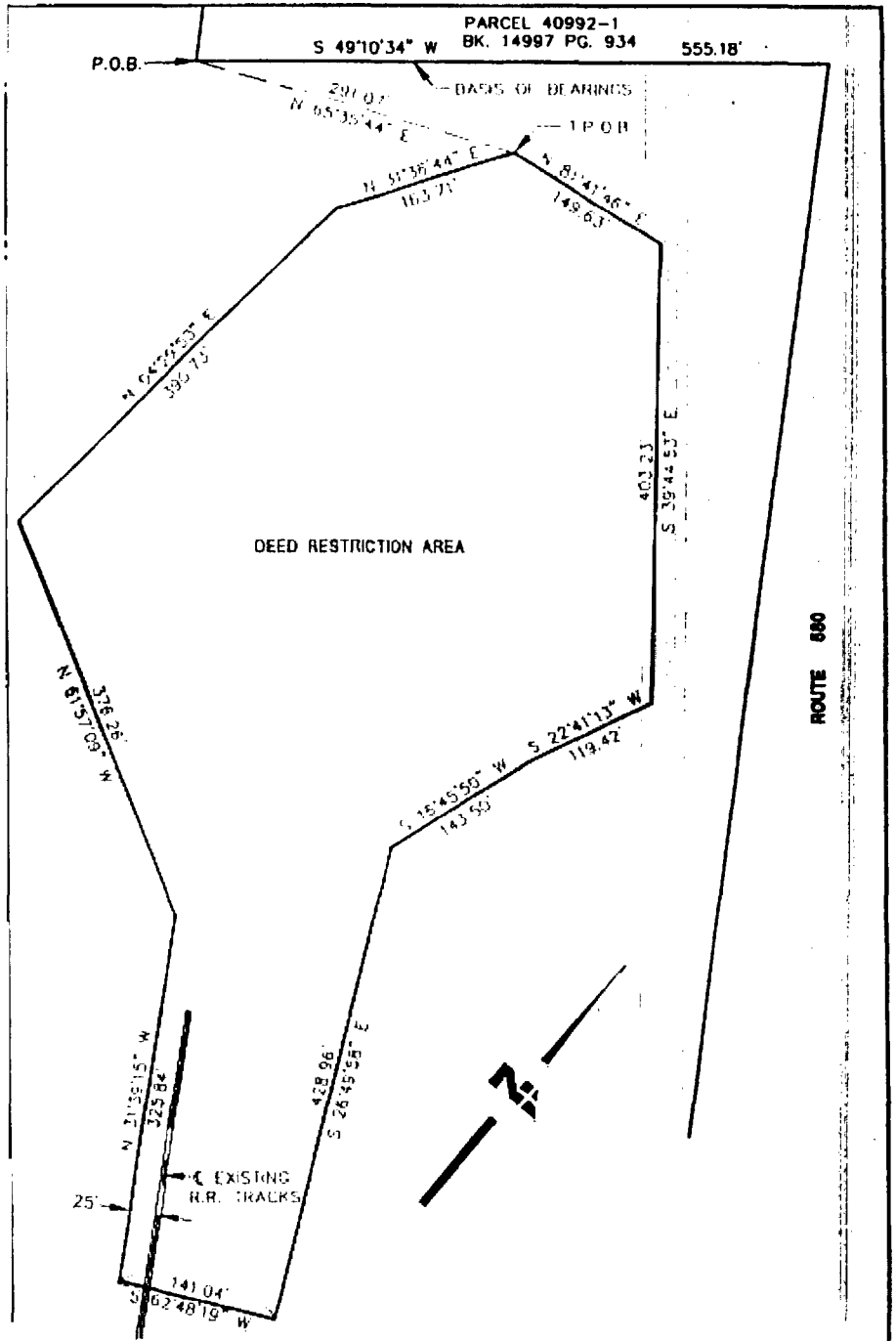
All that certain real property situated in the City of Richmond, County of Contra Costa, State of California, being a portion of the parcels of land described in the following deeds, Book 126 of Deeds at page 511 recorded July 23, 1907, Book 124 of Deeds at page 403 recorded April 15, 1907, Book 120 of Deeds at page 338 recorded October 18, 1906, and Book 425 of Official Records at page 197 recorded January 29, 1937, Contra Costa County Records, being also a portion of Sections 20 and 29 in Township 1 North Range 4 West M.D.B. & M. being more particularly described as follows:

Beginning at the southwesterly terminus of a course in the general southerly line of Parcel 409921-1 as described in the Amended Final Order of Condemnation recorded April 12, 1989 in Book 14997 of Official Records at page 934, Contra Costa County Records, said course having a bearing of S 49° 10' 34" W and a length of 555.18 feet;
thence N 65° 35' 44" E, 291.07 feet to the TRUE POINT OF BEGINNING;
thence N 81° 41' 46" E, 149.63 feet;
thence S 39° 44' 53" E, 403.23 feet;
thence S 22° 41' 13" W, 119.42 feet;
thence S 16° 45' 50" W, 143.50 feet;
thence S 26° 49' 58" E, 428.96 feet;
thence S 62° 48' 19" W, 141.04 feet to the southwesterly line of the parcel of land as described in the deed recorded Jan 29, 1937 in Book 425 of Official Records at page 197, Contra Costa County Records;
thence along said southwesterly line and its northwesterly prolongation N 31° 39' 15" W, 179.03 feet;
thence N 53° 34' 34" W, 508.44 feet;
thence N 4° 29' 53" E, 390.73 feet;
thence N 31° 36' 44" E, 163.71 feet to the TRUE POINT OF BEGINNING.

Checked by _____

NOLTE SURVEYS, INC.

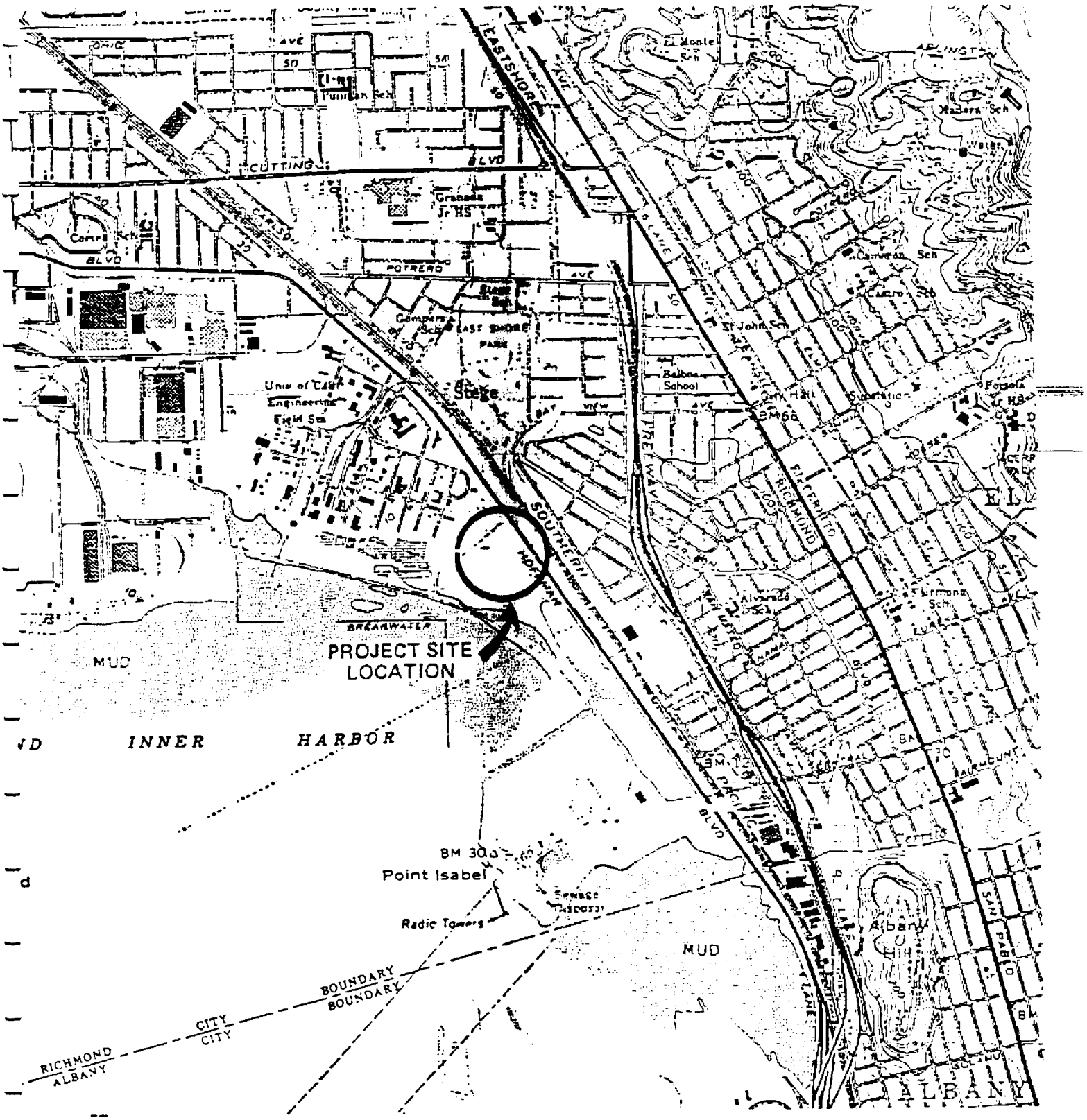
LD0067-D



DATE: 3-31-93	NOLTE and ASSOCIATES	PLAT TO ACCOMPANY LEGAL DESCRIPTION FOR DEED RESTRICTION
SCALE: 1"=100'	SAN JOSE • WALNUT CREEK	AT SOUTHERN PACIFIC TRANSPORTATION COMPANY
DRAWN: EG	SAN DIEGO • SACRAMENTO	LIQUID GOLD SITE
CHECKED: DLA		RICHMOND CALIFORNIA

95 15281

EXHIBIT B
SITE LOCATION MAP



Basemap Reference: USGS Topographic Map
Richmond Quadrangle 7.5 Minute Series
Photorevised 1980

Kennedy/Jenks Consultants

Southern Pacific Transportation Company
Liquid Gold Site

Site Location Map

K/J 855018.14
February 1993

Figure 1

TABLE 2

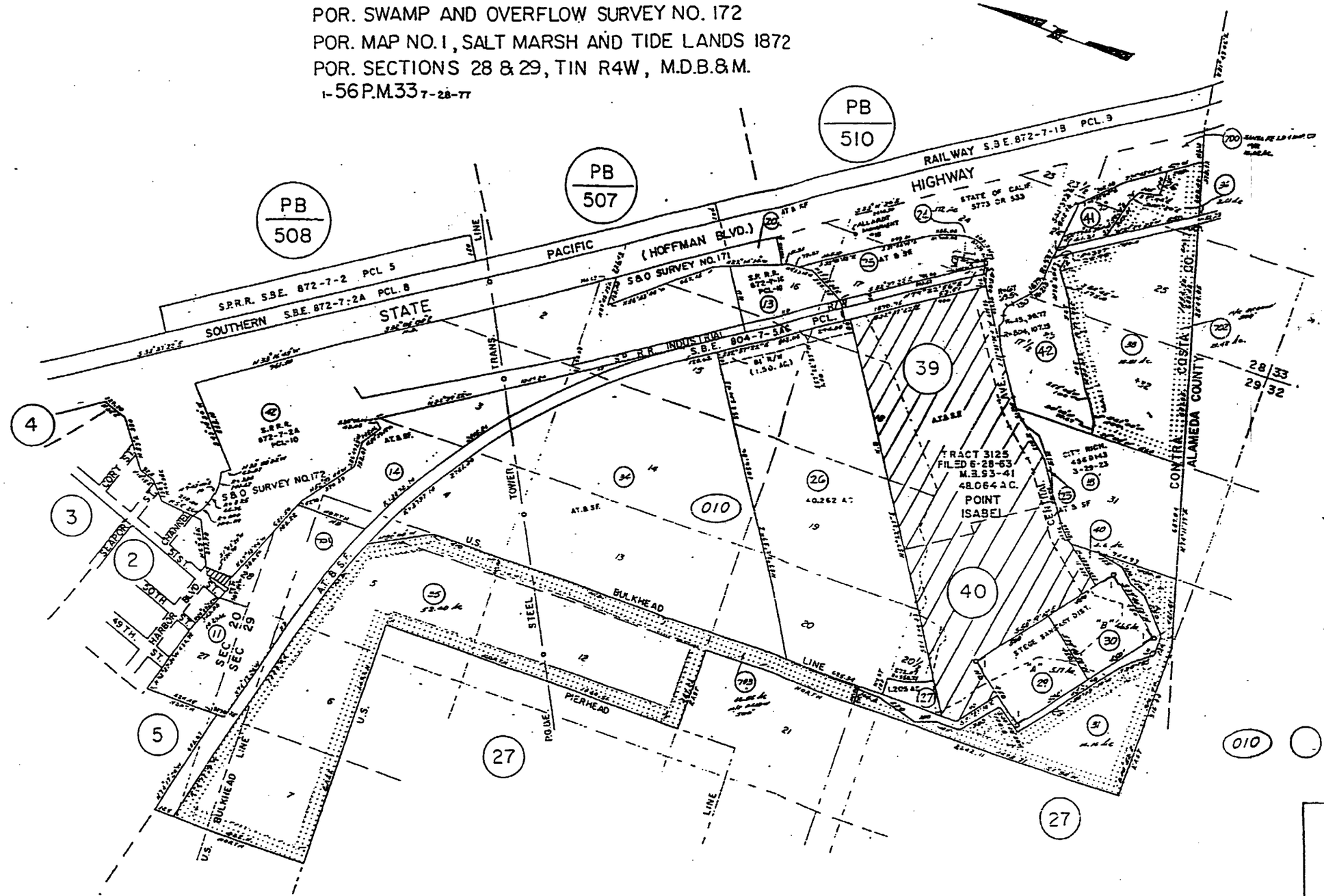
OWNERSHIP OF NEARBY PROPERTIES
LIQUID GOLD SITE - RICHMOND, CALIFORNIA
K/J 855018.14

95 152781

PARCEL NUMBERS	OWNER
13, 42	Southern Pacific Transportation Company San Francisco, California
14, 20, 23, 25, 27, 34, 37, 39, 40	SF Pacific Properties San Francisco, California
26	United States Postal Service San Bruno, California
24, 29, 30	East Bay Municipal Utility District Oakland, California
35, 36, 38	City of Richmond Richmond, California
700, 701	Santa Fe Energy Resources, Inc. Midland, Texas

Note: This information was provided by the Contra Costa County Assessor's office on 26 January 1993. The Assessor's office attaches a disclaimer warning about possible errors and omissions in the data. See Figure 8 for a copy of the Assessor's map.

POR. SWAMP AND OVERFLOW SURVEY NO. 171
POR. SWAMP AND OVERFLOW SURVEY NO. 172
POR. MAP NO. 1, SALT MARSH AND TIDE LANDS 1872
POR. SECTIONS 28 & 29, T1N R4W, M.D.B.&M.
1-56 P.M. 33 7-28-77



Notes:

1. Source:
   Assessor's Map Book 560, Page 01
   Contra Costa, California
   2 - 26 - 63 (Revised 12 - 2 - 92)
2. For owners of parcels refer to Table 2

Kennedy/Jenks Consultants

Southern Pacific Transportation Company
Liquid Gold Site

County Assessor's Map of Site and Adjacent Property

K/J 855018.14
February 1993

Figure 8

EXHIBIT E
HEALTH EFFECTS OF CONTAMINANTS

HEALTH EFFECTS OF CONTAMINANTS
ALLOWABLE EXPOSURE VALUES

CHEMICAL	TLV[1] TWA (mg/m^3)	STEL[1] (mg/m^3)	PEL[2] (mg/m^3)	ACUTE EXPOSURE SYMPTOMS[3]	TARGET ORGANS[3]
Lead, inorganic fumes and dust	0.15	NE[4]	0.05	Lassitude; insomnia; pallor, eye grounds; anorexia, low weight, malnutrition; constipation; abdominal pain, colic; hypotense; anemia; gingival lead line; trembling, paralysis of wrists	GI tract, central nervous system, kidneys, blood, gingival tissues
Nickel, metal and soluble compounds	1	NE	1	Sensitization dermatitis; allergic asthma; nasal cavities; pneumonitis; (carcinogenic)	Nasal cavities, lungs, skin
Copper, dust and mist	1	NE	1	Irritation of mucous membranes, pharynx; nasal perforation; eye irritation; metal taste; dermatitis	Respiratory system, skin, liver, kidneys, increased risk with Wilson's disease
Chromium metal and insoluble salts	0.5	NE	0.5	Histologic fibrosis of lungs	Respiratory system
Zinc (nuisance dust)	10	NE	10	Metallic taste, dry throat	Respiratory system
Oil and Grease (specific chemical components are not identified by this method)	-	-	-	-	-
Petroleum Hydrocarbons (as gasoline)	890	1,500	900	Irrigation of skin, mucous membranes, dermatitis; flushing of face; staggering gate; slurred speech; mental confusion	Central nervous system
Mercury	0.1	-	0.05	Coughing, chest pain, insomnia, indecision, headache, weakness, fatigue	Skin, respiratory system, central nervous system, kidneys, eyes
Polycylic Aromatic Hydrocarbons (as coal tar pitch volatiles)	0.2	NE	0.2	Dermatitis, bronchitis	Respiratory system, skin, bladder, kidneys
Nuisance Dust (total)	10	NE	10	-	-

HEALTH EFFECTS OF CONTAMINANTS
ALLOWABLE EXPOSURE VALUES

NOTES:

1. TLV - TWA = Threshold Limit Value - 8 hr. Time Weighted Average
   STEL = Short Term Exposure Limit
   American Conference of Governmental Industrial Hygienists. Threshold Limit Values (TLV) and Biological Exposure Indices for 1991-1992.
   TLV - TWA *reported in mg/m^3 represents milligrams of substance per cubic meter of air.*

2. PEL = Federal OSHA (29 CFR 1910 Subpart Z) Permissible Exposure Level based on 8 hour time weighted average. U.S. Department of Health and Human Services. NIOSH Pocket Guide to Chemical Hazards. June 1990.

3. Sittig, Marshall. 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens. Park Ridge, New Jersey. Noyes Publications.

4. NE = Not established.

Sources: NIOSH Pocket Guide to Chemical Hazards, June 1990.
Sittig, Marshall. Handbook of Toxic and Hazardous Chemicals and Carcinogens. Second Edition. Noyes Publications. 1985.

END OF DOCUMENT

STATE OF CALIFORNIA — ENVIRONMENTAL PROTECTION AGENCY PETE WILSON, Governor

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

REGION 2
700 HEINZ AVE., SUITE 200
BERKELEY, CA 94710-2737

LAND USE COVENANT SIGN-OFF SHEET

LIQUID GOLD SITE
SOUTHWEST OF HIGHWAY 580 BAYVIEW EXIT
RICHMOND, CALIFORNIA

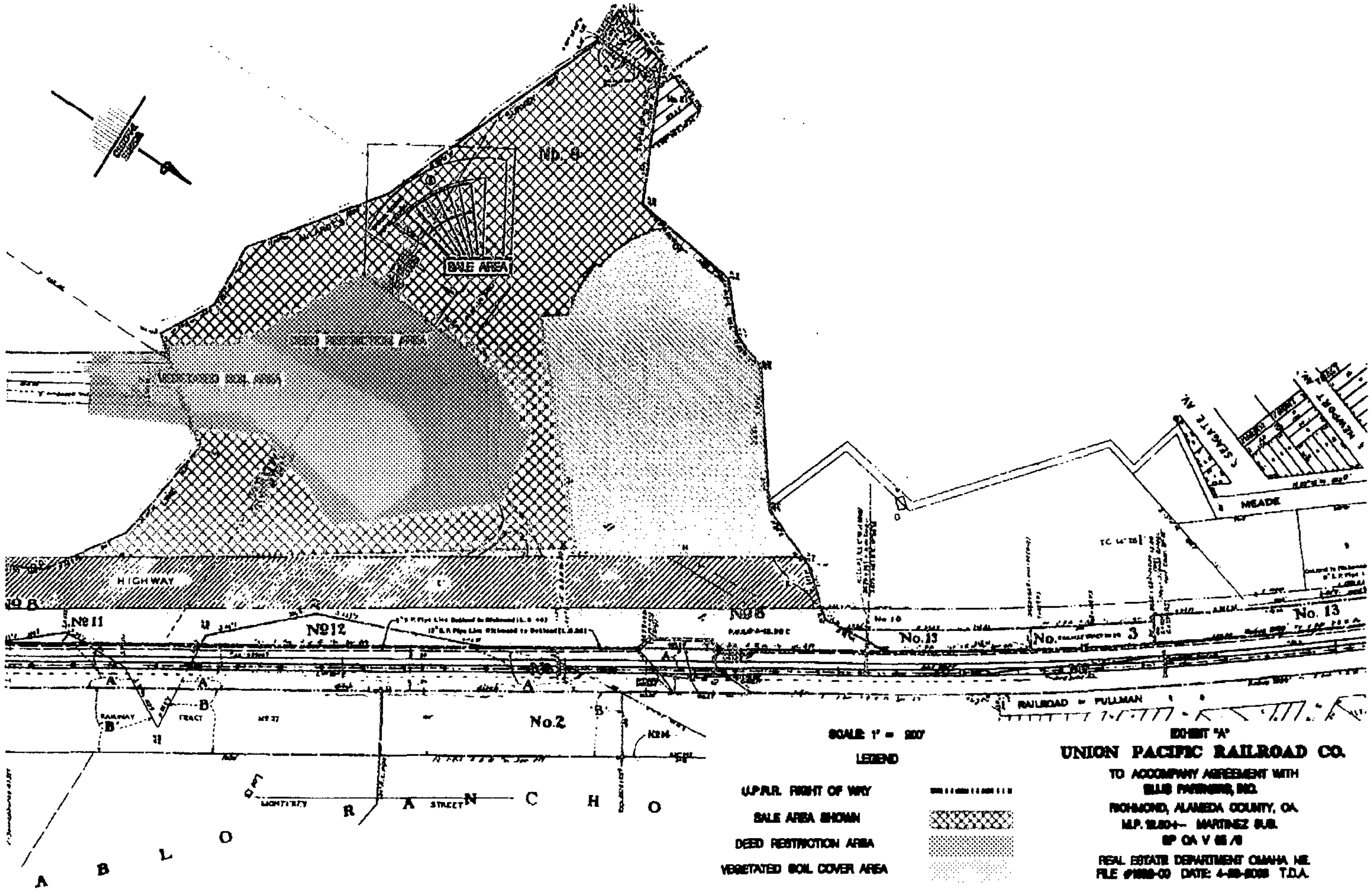
Ben Harrome — 6/15/95
Project Manager — Date

[illegible] — 06/26/95
Unit Chief — Date

Derek E. Van Hoorn — 6/15/95
Office of Legal Counsel — Date

Barbara J. Cook — 6/27/95
Branch Chief — Date

Appendix F
Map of Deed Restricted Area
Superimposed on Area of Vegetated Cap


No. 9
SALE AREA
HIGHWAY
No 11
No 12
No 13
No. 3
No. 13
No.2
MEADE
RAILROAD - PULLMAN
A B L O R A N C H O
SCALE: 1" = 200'
LEGEND
U.P.R.R. RIGHT OF WAY
SALE AREA SHOWN
DEED RESTRICTION AREA
VEGETATED SOIL COVER AREA
EXHIBIT "A"
UNION PACIFIC RAILROAD CO.
TO ACCOMPANY AGREEMENT WITH
RICHMOND, ALAMEDA COUNTY, CA.
MARTINEZ SUB.
REAL ESTATE DEPARTMENT OMAHA NE.
T.D.A.

ERM has over 100 offices
across the following
countries worldwide

Australia
Argentina
Belgium
Brazil
Canada
China
France
Germany
Hong Kong
Hungary
India
Indonesia
Ireland
Italy
Japan
Korea
Malaysia
Mexico
Netherlands
Peru
Poland
Portugal
Puerto Rico
Russia
Singapore
South Africa
Spain
Sri Lanka
Sweden
Taiwan
Thailand
UK
USA
Venezuela
Vietnam