ConocoPhillips
76 Broadway
Sacramento, California 95818

June 26, 2008

Ms. Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay Parkway
Alameda, California 94502

Re: **Monitoring Well MW-4 Replacement – Work Plan**

76 Service Station No. 5484
1895 Lake Chabot Road
Castro Valley, California

Dear Ms. Jakub,

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

If you have any questions or need additional information, please contact me at (916) 558-7612.

Sincerely,

Bill Borgh

Bill Borgh
Site Manager – Risk Management and Remediation

Attachment

June 26, 2008

Ms. Barbara Jakub
Alameda County Health Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Work Plan – Monitoring Well (MW-4) Replacement
76 Station No. 5484
18950 Lake Chabot Road
Castro Valley, California
Delta Project No. C105484121

DELTA

Dear Ms. Jakub:

On behalf of Conoco Phillips Company (COP), Delta Consultants (Delta), has prepared this work plan for the installation of a replacement monitoring well to assess the horizontal extent of the dissolved phase petroleum hydrocarbon impact to the groundwater down-gradient of monitoring wells MW-2 and MW-5. The new well is being proposed to replace monitoring well MW-4, which was paved over when the driveway on the north side of Lake Chabot Road was repaved.

Based on data collected during the first quarter 2002 groundwater monitoring activities at the site, the last quarter that monitoring well MW-4 was accessible, samples taken from monitoring well MW-4 contained methyl tertiary butyl ether (MTBE) at a concentration of 1,200 micrograms per liter (µg/L). In addition, the groundwater flow direction is generally to the southwest, toward monitoring well MW-4. During the most recent monitoring and sampling event conducted during January 2008, MTBE was reported at 240 µg/L [Environmental Protection Agency (EPA) Method 8260B] in the sample collected from monitoring well MW-7. The MTBE concentration in samples collected from monitoring well MW-7 has decreased from 1,600 µg/L in March 2003 (analyzed by EPA Method 8260B) to 240 µg/L in January 2008. Samples collected from monitoring well MW-7 during the 2001 monitoring and sampling event were tested for tertiary butyl alcohol (TBA) by EPA Method 8260B; TBA was below the laboratory's indicated reporting limit. This data indicates that the MTBE plume may be moving down-gradient, to the southwest of its original location. Therefore, Delta is proposing the installation of a replacement monitoring well to assess the horizontal extent of the dissolved phase petroleum hydrocarbon impact to the groundwater down-gradient of monitoring wells MW-2 and MW-5.

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SITE BACKGROUND AND PREVIOUS ENVIRONMENTAL WORK

The site is located on the southeast corner of the intersection of Lake Chabot Road and Quail Avenue, and is an active 76 service station and automotive service facility. Current site facilities consist of two gasoline underground storage tanks (USTs), a waste oil UST, two dispenser islands, and a station building.

In June 1988, a leak was detected in the unleaded product system during an annual tank precision test. Three monitoring wells (MW-1 through MW-3) were subsequently installed on-site in July 1988 by Applied GeoSystems (AGS) to evaluate subsurface conditions. Soil samples collected from the well borings contained total petroleum hydrocarbons (TPH) up to 79 milligrams per kilogram (mg/kg) and benzene, toluene, ethyl-benzene, and total xylenes (BTEX) (up to 26 mg/kg). Groundwater samples collected from the monitoring wells contained TPH up to 7,800 micrograms per liter (µg/L) and benzene up to 640 ug/L. Approximately 1 foot of free product was observed in monitoring well MW-3 in October 1988.

In May and June 1989, two off-site monitoring wells (MW-4 and MW-5) and an additional on-site monitoring well (MW-6) were installed. Soil samples collected from the well borings generally did not contain TPH as gasoline (TPHg) or BTEX with the exception of TPHg at 2.4 mg/kg in the sample collected at 13.5 feet below ground surface (bgs) from well boring MW-5.

In June 1989, two 10,000-gallon gasoline USTs and one 280-gallon waste oil UST located to the southeast of the station building were removed from the site. During the removal, monitoring wells MW-1 and MW-3 were destroyed. Five soil samples collected at 6 feet bgs from the sidewalls of the gasoline UST excavation contained TPHg ranging from 1,400 mg/kg to 4,300 mg/kg. As a result, impacted soil was over-excavated in the area of the former gasoline USTs and dispensers. An area measuring approximately 60 feet by 70 feet was excavated to depths of 10 feet to 15 feet bgs. Soil samples collected from the sidewalls and bottom of the excavation contained TPHg (up to 8.9 mg/kg) and BTEX (up to 0.88 mg/kg). Soil samples collected beneath the former waste oil UST at 7 feet bgs contained TPHg up to 650 mg/kg and total oil and grease (TOG) up to 19,000 mg/kg. Therefore, impacted soil was also over-excavated in this area to approximately 10 to 11 feet bgs. Approximately 1,900 cubic yards of impacted soil was excavated and disposed off-site between June and August 1989. Two 12,000-gallon fiberglass, double-wall USTs and a 520-gallon waste oil UST (north of the station building) were installed.

In November 1989, five additional borings (B-7 through B-11) were advanced to further evaluate to the extent of impacted soil. Soil samples collected from the borings contained TPHg up to 220 mg/kg and BTEX up to 160 mg/kg.

In May 1991, an additional boring (EB1) was advanced and an additional monitoring well (MW-7) was installed in the southern portion of the site. Soil samples collected from the borings contained TPHg up to 130 mg/kg and low levels of BTEX (up to 3.6 mg/kg). A groundwater sample collected from monitoring well MW-7 contained TPHg at 3,000 ug/L, TPH as diesel (TPHd) at 540 µg/L, and benzene at 160 µg/L.

SENSITIVE RECEPTORS

A well search was performed by AGS in 1988 within a ½-mile radius of the site; two wells were identified within the search radius. One well was a test well located approximately ½ mile south of the site, and the other well was a domestic well located approximately ½ mile south/southeast of the site. Based on groundwater flow calculations, the wells appeared to be down-gradient of the site.

A well search was conducted by Gettler-Ryan Inc. (GR) in September 1998 and consisted of a review of Department of Water Resources (DWR) files. A number of wells were identified within ¼ to ½ mile of the site, and one well was identified within ¼ mile of the site.

A sensitive receptor survey (SRS) was performed by Delta in 2006; the results of the survey were presented in our *Sensitive Receptor Report*, dated August 22, 2006. The survey consisted of a review of DWR files to evaluate the presence of wells within a ½-mile radius of the site, and a questionnaire regarding the presence of wells, sumps, or basements was mailed to property owners within 1,000 feet of the site. A total of 214 questionnaires were mailed in April 2006; only 38 responses were received. Based on the responses received, wells were located on eight of the properties, sumps used for irrigation purposes were located on three of the properties, and basements were present at 16 of the properties. Four additional property owners were mailed questionnaires based on the DWR files; however, no responses were received. Delta also conducted a site visit to evaluate the presence of schools, day care centers, and hospitals within 1,000 feet of the site. Chabot Elementary School was located approximately 470 feet southeast (cross-gradient) of the site.

Based on the U.S. Geological Survey Topographic Map (USGS) for the site vicinity (Hayward Rosa quadrangle), the nearest surface water body is an unnamed drainage located approximately 2,000 feet north of the site. The drainage originates from a reservoir located about 1 mile to the northeast.

PROPOSED ACTIVITIES

Permitting, Utility Notification, and Borehole Clearance

Before commencing field activities Delta will prepare a Health and Safety Plan in accordance with state and federal requirements for use during on-site assessment activities. In addition, a drilling permit will be obtained for the groundwater monitoring well from the Alameda County Public Works Agency. Prior to drilling, Underground Service Alert (USA) and a private utility locator will be notified as required to clear the proposed drilling location for underground utilities.

Monitoring Well Installation

Based on previous data collected during groundwater monitoring and sampling activities the depth to groundwater at the site ranges from approximately 6 to 10 feet bgs. Therefore, the boring for the proposed monitoring well down-gradient of monitoring wells MW-2 and MW-5 is anticipated to be advanced to a depth of approximately 15 feet bgs

using a truck mounted drill-rig equipped with 8-inch outside diameter hollow-stem augers. The proposed monitoring well location is shown on Figure 2. Soil samples will be logged using the Unified Soil Classification System (USCS) for lithologic interpretation and field screened for the presence of volatile organic compounds by headspace analysis using a pre-calibrated Photo-ionization Detector (PID). Soil samples will be collected for lithologic interpretation and field screening at 5 foot intervals and from just above first water, anticipated to be at a depth of approximately 6 to10 feet bgs. The soil sample exhibiting the highest PID reading from the boring as well as the soil sample collected from just above first water will be submitted for analysis. A chain-of-custody will accompany the samples during transportation to the laboratory. The soil samples retained for analysis will be analyzed for TPHg by EPA Method 8015M, BTEX, MTBE, di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), TBA, 1,2-dichloroethane (1,2-DCA), Ethanol, and ethylene di-bromide (EDB) - (8 oxygenates) by EPA Method 8260, and lead by EPA Method 6010B.

The boring will be converted to a groundwater monitoring well by installing a 2-inch diameter schedule 40 poly-vinyl chloride (PVC) well casing with a screened interval based on the lithology encountered during well installation. The screen interval is anticipated to be between 5 and 15 feet bgs, to correspond with the depth at which first water is anticipated to be encountered. The perforation size in the screen interval will be 0.020-inch. A sand pack of RMC Lonestar Sand #3 or equivalent will be installed into the annular space and extend approximately one (1) foot above the top of the screen interval.

A one (1) foot thick bentonite seal will be placed on top of the sand pack. The monitoring well will be surged prior to the placement of the bentonite seal to promote settling of the sand pack. The remainder of the annular space will be filled with neat cement and the monitoring well will be fitted with a locking cap and encased in a traffic-rated protective vault placed at existing ground level. The construction details are shown on Figure 3.

Well Development, Monitoring, and Sampling

The monitoring well will be developed a minimum of 72 hours after construction. A minimum of 10 casing volumes of groundwater will be removed from the monitoring well during the development process.

Subsequent to the installation and development of the newly installed monitoring well, the monitoring well will be incorporated into a quarterly sampling schedule with the existing site monitoring wells and will be monitored and sampled during the next scheduled quarterly sampling event.

Groundwater samples collected for analysis from each of the monitoring wells associated with the site will be analyzed for TPHg by EPA Method 8015M, BTEX, MTBE, DIPE, ETBE, TAME, TBA, 1,2-DCA, Ethanol, and EDB by EPA Method 8260.

Wellhead Survey

Following the completion of the new monitoring well, a California licensed surveyor will survey the northing and easting of the monitoring well using Datum NGVD29 or NAD 88. The monitoring well elevations will be surveyed relative to mean sea level, with an accuracy of +/- 0.01 foot. A global positioning system (GPS) will also be used to survey in the latitude and longitude of the well to be uploaded into California's Geo Tracker database system. The survey of the well location will be to sub-meter accuracy.

Disposal of Drill Cuttings and Wastewater

Drill cuttings and decontamination water generated during the monitoring well installation activities will be placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums and temporarily stored on the property.

Samples of the drill cuttings and wastewater will be collected, properly labeled and placed on ice for submittal to a California-certified laboratory and analyzed for TPHg by EPA Method 8015M, BTEX and MTBE by EPA Method 8260B, and total lead by EPA Method 6010B. A chain-of-custody will accompany the samples during transportation to the laboratory. Subsequent to receiving the laboratory analytical results, the drummed drill cuttings and wastewater will be profiled, transported, and disposed of at a COP approved facility.

Reporting

Following completion of the field work and receipt of analytical results, a monitoring well installation report will be prepared and submitted within 60 days. The report will present the details of the monitoring well installation activities, including copies of monitoring well permit, and details of disposal activities and copies of disposal documents. Required electronic submittals will be uploaded to the State Geotracker database.

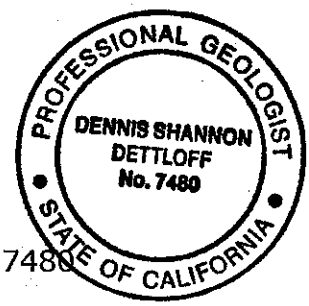
REMARKS/SIGNATURES

The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The Contract between Delta and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report will be performed. This report is intended only for the use of Delta's Client and anyone else specifically listed on this report. Delta will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.

If you have any questions regarding this project, please contact me at (916) 503-1261 or Mr. William Borgh at (916) 558-7612.

Sincerely,
DELTA CONSULTANTS

Dennis S. Dettloff



Dennis S. Dettloff, P.G.
Senior Project Manger
California Registered Professional Geologist No. 7480

Figures:
- Figure 1 – Site Location Map
- Figure 2 – Site Plan
- Figure 3 – Well Construction Diagram

cc: Mr. William Borgh, ConocoPhillips (electronic copy)

FIGURES

North

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP, HAYWARD QUADRANGLE, 1967

FIGURE 1

SITE LOCATION MAP

76 SERVICE STATION NO. 5484
18950 LAKE CHABOT ROAD
CASTRO VALLEY, CA

PROJECT NO. C105-484	DRAWN BY MC 5/27/06 - DR 6/26/08
FILE NO. Site Locator 5484	PREPARED BY MC
REVISION NO. 1	REVIEWED BY

DELTA

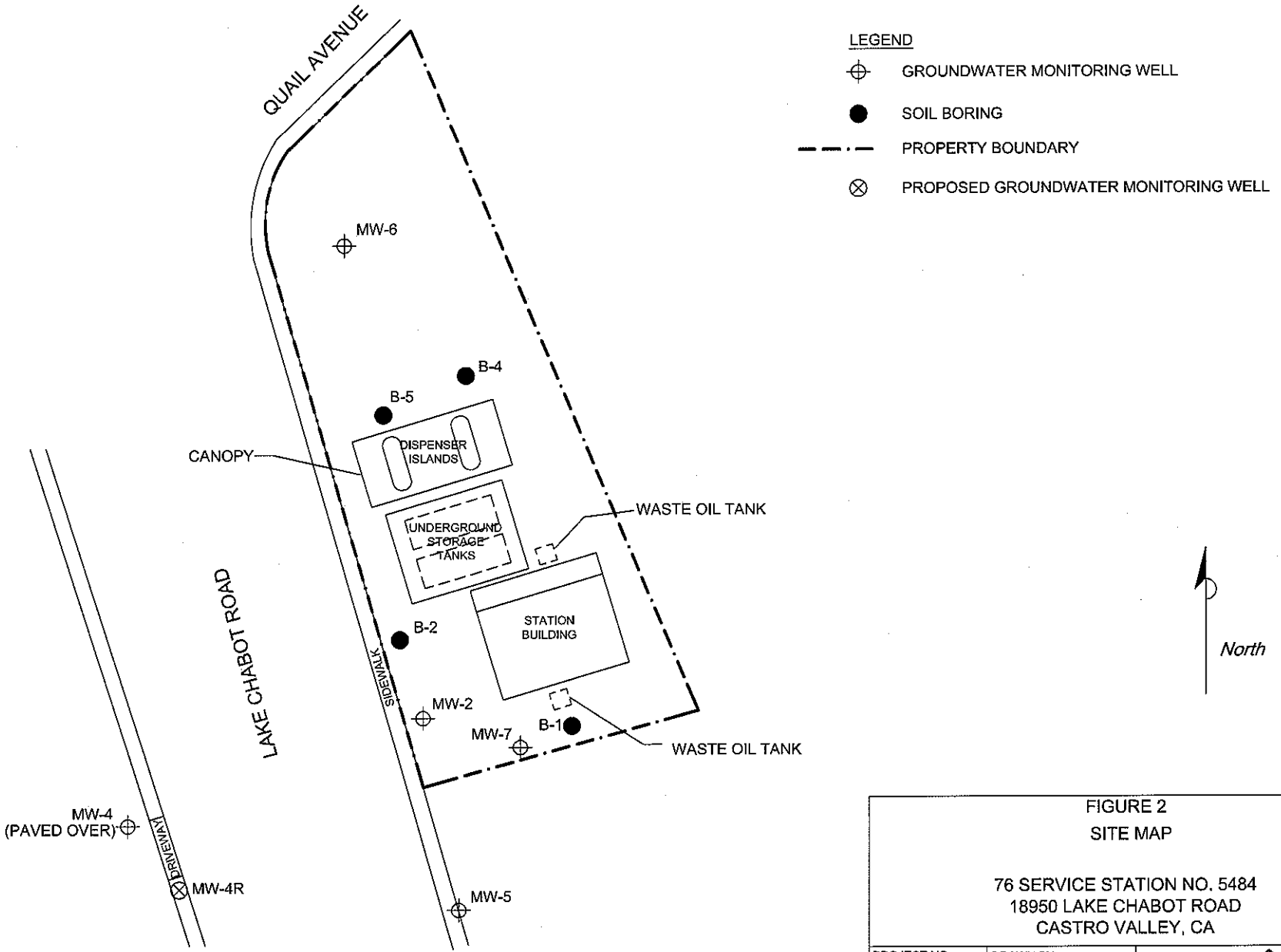


FIGURE 2
SITE MAP

76 SERVICE STATION NO. 5484
18950 LAKE CHABOT ROAD
CASTRO VALLEY, CA

PROJECT NO. C1D5-484	DRAWN BY MC 7/7/06 - DR 6/26/08
FILE NO. UC-5484-SITE	PREPARED BY BW
REVISION NO. 1	REVIEWED BY

DELTA

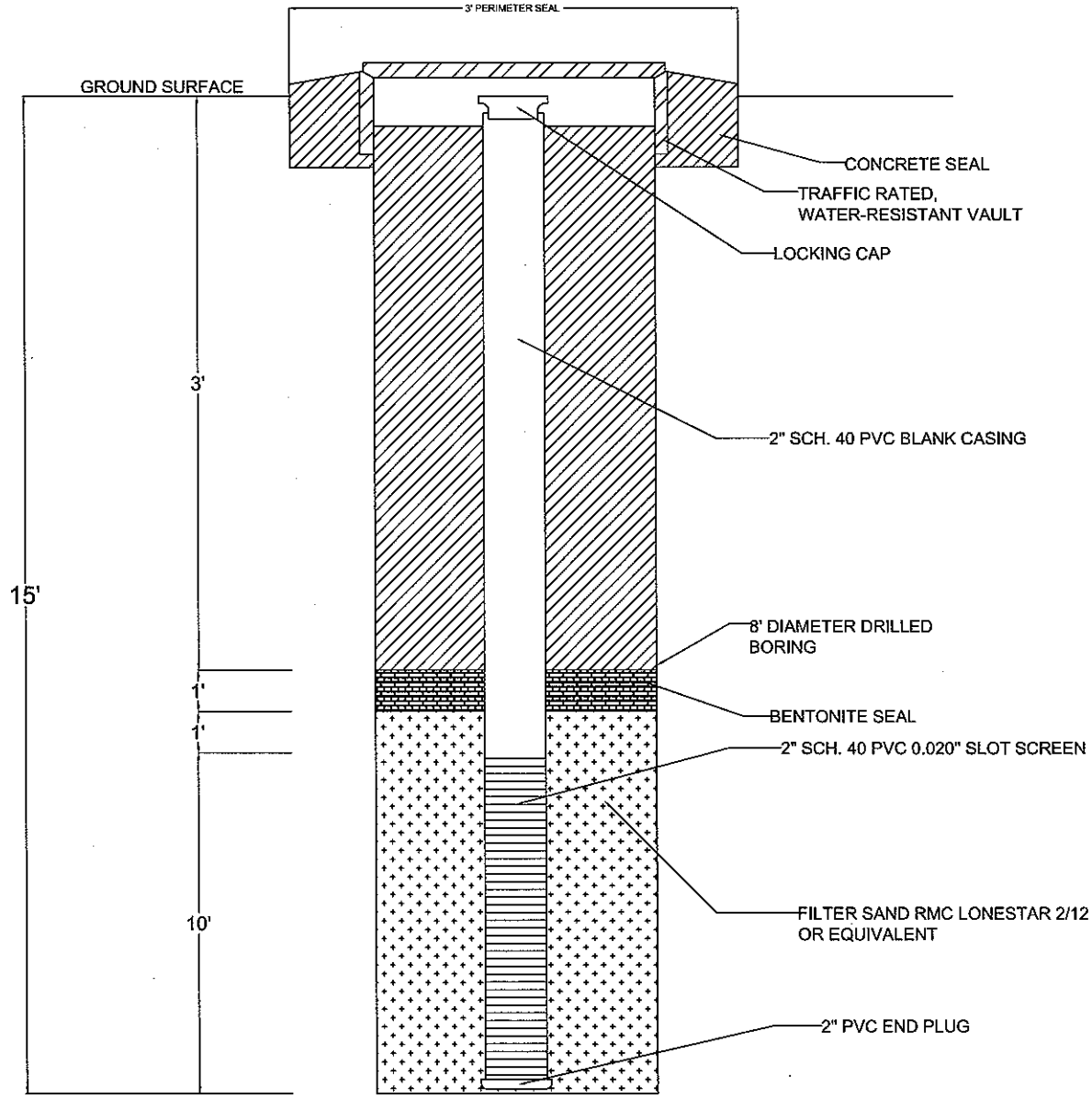


FIGURE 3

PROPOSED GROUNDWATER MONITORING
WELL CONSTRUCTION DETAIL

76 STATION NO. 5484
18650 LAKE CHABOT ROAD
CASTRO VALLEY, CALIFORNIA

PROJECT NO. C1054-8412	DRAWN BY DR 6/26/08
FILE NO. 54847-WELLDETAIL	PREPARED BY DD
REVISION NO.	REVIEWED BY

DELTA