

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**MONITORING AND REPORTING PROGRAM NO. R5-2008-0810  
CALIFORNIA WATER CODE SECTION 13267**

**FOR  
JULIUS AND KLARA JUHASZ AND  
THE THOMAS AND JOSEPHINA KALAPURAYIL FAMILY TRUST,  
MR. GEORGE M. PUTHENPURAYIL, AND MS. SHYLIMOL P. ABRAHAM  
FORMER FERG'S MARKET  
SACRAMENTO COUNTY**

The Former Ferg's Market (Site) at 3735 47<sup>th</sup> Avenue in Sacramento, Sacramento County, is situated on the northwest corner of 47<sup>th</sup> Avenue and Martin Luther King Jr. Boulevard. The Site is currently an unpaved, vacant lot. A petroleum discharge from past underground tanks occurred while the property was owned and operated by Mr. Julius and Mrs. Klara Juhasz. The property is currently owned by The Thomas and Josephina Kalapurayil Family Trust, Mr. George M. Puthenpurayil, and Ms. Shylimol P. Abraham. Fruitridge Vista Water Company Well #11 is located approximately 400 feet south of the Site. Well #11 is 452 feet deep, is impacted by methyl tertiary butyl ether (MTBE), and was taken out of service in 1998. Groundwater is first encountered at approximately 40 feet below ground surface (bgs). Initial soil and groundwater investigations showed petroleum hydrocarbon constituents in soil at maximum concentrations of: total petroleum hydrocarbons (TPH-G) 18,000 milligrams per kilogram (mg/kg), benzene 39 mg/kg, toluene 900 mg/kg, ethylbenzene 420 mg/kg, xylenes 2,200 mg/kg, MTBE 50 mg/kg, ethyl tert butyl ether (ETBE) 0.041 mg/kg, tert amyl methyl ether (TAME) 0.61 mg/kg, and tert butyl alcohol (TBA) 8.2 mg/kg. Groundwater samples have contained petroleum hydrocarbon constituents at maximum concentrations of: TPH-G 15,000 micrograms per liter (ug/l), benzene 4,000 ug/l, toluene 1,900 ug/l, ethylbenzene 410 ug/l, xylenes 2,800 ug/l, MTBE 110,000 ug/l, ETBE 120 ug/l, TAME 150 ug/l, TBA 1,900 ug/l, and 1,2-dichloroethane (1,2-DCA) 5.1 ug/l. During the third quarter 2006 groundwater monitoring event, concentrations of petroleum constituents were detected at maximum concentrations of: TPH-G 1,040 ug/l, ethylbenzene 1 ug/l, total xylenes 1.3 ug/l, MTBE 1,500 ug/l, ETBE 1.2 ug/l, and TBA 1,020 ug/l. This pollution has impaired the beneficial uses of the underlying water resource. Approximately 550 cubic yards of petroleum hydrocarbon impacted soil was excavated and removed from the Site in June 2000. A soil vapor extraction (SVE) system has been operating since December 31, 2003 and has removed approximately 6,268 pounds (lbs) of TPH-G. A groundwater extraction test, air-sparging test, and ozone sparge test have all been performed and were all determined to be viable remediation options.

This Monitoring and Reporting Program (MRP) is issued pursuant to Section 13267 of the California Water Code and is necessary to delineate waste discharged from the former Ferg's Market site, characterize groundwater pollutant plumes and determine whether remediation efforts are effective. Existing data and information about the site show the presence of various chemicals, including TPH-G; benzene, toluene, ethylbenzene, and xylenes (BTEX); MTBE; ETBE; TAME; TBA; and 1,2-DCA, emanating from the property resulting from past operations at the Site. The Discharger shall not implement any

changes to this MRP unless and until a revised MRP is issued by the Executive Officer of this Regional Water Board.

Prior to construction of any new groundwater monitoring or extraction wells, and prior to destruction of any groundwater monitoring or extraction wells, the Discharger shall submit plans and specifications to the Regional Water Board for review and approval. Once installed, all new wells shall be added to the monitoring program and shall be sampled and analyzed according to the schedule below.

### GROUNDWATER MONITORING

- As shown on Figure 1, there are 22 groundwater monitoring wells, MW-1, MW-2, MW-3, MW-4, MW-4B, MW-5, MW-6, MW-7C, MW-7E, MW-8B, MW-8D, MW-9A, MW-9B, MW-9D, MW-10B, MW-11C, MW-11E, MW-12B, MW-12D, MW-12E, MW-13B, and MW-14B associated with the Ferg's Market site. The groundwater monitoring program for the 22 monitoring wells and any wells installed subsequent to the issuance of this MRP, shall follow the schedule below. Monitoring wells with free phase petroleum product or visible sheen shall be monitored, at a minimum, for product thickness and depth to water. The volume of extracted groundwater also shall be provided in quarterly monitoring reports. Short-term groundwater extraction was performed from Well MW-4B to remove the hexavalent chromium (Cr<sup>+6</sup>) generated during the long-term ozone sparge test. Sample collection and analysis shall follow standard EPA protocol.

SAMPLING FREQUENCY <sup>1</sup>			
	Quarterly	Semi-annually <sup>2</sup>	Annually <sup>3</sup>
Wells	MW-4B MW-8B MW-9A MW-9B MW-10B MW-12B MW-13B MW-14B MW-15A MW-15B New Wells	MW-1 MW-2 MW-3 MW-4 MW-5	MW-6 MW-7C <sup>4</sup> MW-7E <sup>4</sup> MW-8D <sup>4</sup> MW-9D <sup>4</sup> MW-11C <sup>4</sup> MW-11E <sup>4</sup> MW-12D <sup>4</sup> MW-12E <sup>4</sup>

<sup>1</sup> All wells shall be monitored quarterly for water levels and the presence and thickness of free product.

<sup>2</sup> Wells shall be sampled semi-annually during the first and third quarters.

<sup>3</sup> Wells shall be sampled annually during the third quarter.

<sup>4</sup> Annual sampling frequency is contingent on the well remaining ND, if there is a detection in an annually sampled well sampling frequency for that well will revert to quarterly sampling.

Constituents <sup>5</sup>	EPA Analytical Method	Maximum Practical Quantitation Limit (µg/l) <sup>6</sup>
Depth to Groundwater	---	---
Total Petroleum Hydrocarbons	8015M or 8260B	50
Benzene	8020 or 8260B	0.5
Toluene	8020 or 8260B	0.5
Ethylbenzene	8020 or 8260B	0.5
Xylenes	8260B	0.5
MTBE	8260B	5
TBA	8260B	0.5
TAME	8260B	0.5
DIPE	8260B	0.5
ETBE	8260B	50
Ethanol	8260B	100
Methanol	8260B	0.5
1,2-Dichloroethane	7199	1.0
Hexavalent Chromium <sup>7</sup>		

<sup>5</sup> Report all discrete peaks identified during the normal course of analysis.

<sup>6</sup> All concentrations between the Method Detection Limit and the Practical Quantitation Limit shall be reported as trace.

<sup>7</sup> Analysis for Hexavalent Chromium is required for Wells MW-4, MW-4B, and MW-13B.

## REPORTING

2. When reporting the data, the Discharger shall arrange the information in tabular form so that the date, the constituents, and the concentrations are readily discernible. The data shall be summarized in such a manner as to illustrate clearly the compliance with this Order. In addition, the Discharger shall notify the Regional Water Board within 48 hours of any unscheduled shutdown of any soil vapor and/or groundwater extraction system.
3. As required by the California Business and Professions Code Sections 6735, 7835, and 7835.1, all reports shall be prepared by a registered professional or their subordinate and signed by the registered professional.
4. The Discharger shall submit a paper copy of the quarterly report to this Regional Water Board office and submit the quarterly electronic data reports, which conform to the requirements of the California Code of Regulations, Title 23, Division 3, Chapter 30, electronically over the internet to the Geotracker database system. Both the paper copy and the electronic submittal are due by the 1st day of the second month following the end of each calendar quarter by **1 February, 1 May, 1 August, and 1 November**, until such time as the Executive Officer determines that the reports are no longer necessary. Each quarterly report shall include the following minimum information:
  - (a) A description and discussion of the groundwater sampling event and results, including trends in the concentrations of pollutants and groundwater elevations in the wells, how and when samples were collected, and whether the pollutant plume(s) is delineated.

- (b) Field logs that contain, at a minimum, water quality parameters measured before, during, and after purging, method of purging, depth of water, volume of water purged, etc.
  - (c) Groundwater contour maps for all groundwater zones, if applicable.
  - (d) Concentration contour maps for all groundwater zones for TPH-G, benzene, MTBE, and TBA, if applicable.
  - (e) A table showing well construction details such as well number, groundwater zone being monitored, ground surface elevation, screen interval, bentonite interval, filter pack interval, and total depth of the well.
  - (f) A table showing historical lateral and vertical (if applicable) down-gradient directions and gradients.
  - (g) Cumulative data tables containing the water quality analytical results and depth to groundwater.
  - (h) A copy of the laboratory analytical data report.
  - (i) If applicable, the status of any ongoing remediation, including cumulative information on the mass of pollutant removed from the subsurface, system operating time, the effectiveness of the remediation system, and any field notes pertaining to the operation and maintenance of the system.
  - (j) If applicable, the reasons for and duration of all interruptions in the operation of any remediation system, and actions planned or taken to correct and prevent interruptions.
5. The Fourth Quarter Groundwater Monitoring Report, due **1 February** of each year shall be an expanded report and will include the following additional information/items:
- (a) Tabular summaries of all data obtained during the year.
  - (b) Graphical summaries, of TPH-G, BTEX, MTBE, and TBA concentrations, groundwater elevation data, and remediation system operation versus time for wells MW-1, MW-2, MW-3, MW-4, MW-4B, MW-5, MW-6, MW-12B, and MW-13B, and additional wells as request by Regional Water Board staff.
  - (c) A rose diagram presenting groundwater flow direction and magnitude data.
  - (d) Contaminant concentration contour maps for TPH-G, benzene, MTBE, and TBA for each quarter from the previous year, if applicable.
  - (e) A discussion of the long-term trends in the concentrations of the pollutants in the groundwater monitoring wells.

- (f) An analysis of whether the pollutant plume is being captured by an extraction system or is continuing to spread.
  - (g) A description of all remedial activities conducted during the year, an analysis of their effectiveness in removing the pollutants, and plans to improve remediation system effectiveness.
  - (h) An identification of any data gaps and potential deficiencies/redundancies in the monitoring system or reporting program.
  - (i) If desired, a proposal and rationale for any revisions to the groundwater sampling plan frequency and/or list of analytes.
6. The results of any monitoring done more frequently than required at the locations specified in the MRP also shall be reported to the Regional Water Board.

The Discharger shall implement the above monitoring program as of the date of the Order.

Ordered by: \_\_\_\_\_  
PAMELA C. CREEDON, Executive Officer

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April 4, 2008  
(Date)