CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM for:

999 ARQUES CORPORATION

for the properties located at:

995-999 EAST ARQUES AVENUE, 1077 EAST ARQUES AVENUE, AND 968-970 STEWART DRIVE, SUBUNIT 1, SUBUNIT 2 AND SUBUNIT 5 OF STEWART DRIVE OPERABLE UNIT, SUNNYVALE, SANTA CLARA COUNTY

1. **Authority and Purpose**: The Regional Water Board requires the technical reports in this Self-Monitoring Program pursuant to Water Code sections 13267 and 13304. This Self-Monitoring Program is intended to document compliance with Regional Water Board Order No. R2-2012-0077 (site cleanup requirements).

2. **Groundwater Monitoring**: The discharger shall collect and analyze representative samples of groundwater according to Table 1 (attached) and shall measure groundwater elevations annually at all the wells listed in Table 1, regardless of sampling frequency, and in all other A-aquifer zone and B1-aquifer zone wells in Stewart Drive Operable Unit (SDOU) Subunits 1, 2, and 5. The discharger shall sample any new monitoring or extraction wells annually and analyze groundwater samples for the same constituents as shown in the above table. The discharger may propose changes in Table 1; any proposed changes are subject to Executive Officer approval.

3. **Enhanced Anaerobic Bioremediation (EAB) Treatment Monitoring:**
The discharger shall collect and analyze representative samples of groundwater according to Table 2 (attached) to monitor the EAB treatment effectiveness. The discharger may propose changes in Table 2; any proposed changes are subject to Executive Officer approval.

4. **Soil Gas and Indoor Air Monitoring:**

a. The discharger shall collect and analyze representative samples of soil gas from the five soil gas monitoring probes according to Table 3 (attached).

b. The discharger shall collect and analyze representative samples of indoor air, as well as background outdoor air samples, according to Table 3 (attached). The discharger may propose changes in Table 3; any proposed changes are subject to Executive Officer approval.

c. The discharger shall monitor the interior pressure at the 999 East Arques Avenue building using a differential pressure transducer and data-logger to verify the ventilation system is producing positive air pressure inside the building, to mitigate the potential for vapor intrusion.

5. **Biennial Monitoring Reports**: The discharger shall submit biennial monitoring reports to the Regional Water Board no later than 30 days following the end of each even-numbered year. The reports shall include:

a. Transmittal Letter: The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall be signed by the discharger's principal executive officer or his/her duly authorized representative, and shall include a statement by the official, under penalty of perjury, that the report is true and correct to the best of the official's knowledge.

b. Groundwater Elevations: Groundwater elevation data shall be presented in tabular form, and a groundwater elevation map should be prepared for each monitored water-bearing zone. Historical groundwater elevations should be included with each biennial report.

c. Groundwater Analyses: Groundwater sampling data shall be presented in tabular form, and an iso-concentration map should be prepared for one or more key contaminants for each monitored water-bearing zone, as appropriate. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. Historical groundwater sampling results shall be included in each biennial report. The report shall describe any significant increases in contaminant concentrations since the last report and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

d. Soil gas monitoring: Soil gas monitoring data shall be presented in tabular form and in time series graphs for each sampling location, as appropriate. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. The report shall describe any significant increases in contaminant concentrations since the last report and any measures proposed to address the increases. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

e. Indoor air monitoring: Indoor air monitoring results shall be presented in tabular form. The report shall indicate the analytical method used and detection limits obtained for each reported constituent. The report shall discuss constituent concentrations measured in indoor air samples relative to concentrations measured in the concurrent outdoor air sample and relative to Regional Water Board screening levels for indoor air. Supporting data, such as lab data sheets, need not be included (however, see record keeping - below).

f. Pressure monitoring: Interior air pressure monitoring data for the 999 East Arques Avenue building shall be presented in summary form, indicating the range of measurements and the frequency of positive and negative pressure readings each month during the reporting period. The report shall describe any significant periods where positive pressure was not sustained in the building and any measures proposed to address such period(s).

g. Status Report: The biennial report shall describe relevant work completed during the

reporting period (e.g., site investigation, remedial measures) and work planned for the following two years.

6. **Violation Reports**: If the discharger violates requirements in the Site Cleanup Requirements, then the discharger shall notify the Regional Water Board office by telephone as soon as practicable once the discharger has knowledge of the violation. Regional Water Board staff may, depending on violation severity, require the discharger to submit a separate technical report on the violation within five working days of telephone notification.

7. **Other Reports**: The discharger shall notify the Regional Water Board prior to any site activities, such as construction or underground tank removal, that have the potential to cause further migration of contaminants or that would provide new opportunities for site investigation.

8. **Record Keeping**: The discharger or his/her agent shall retain data generated for the above reports, including lab results and QA/QC data, for a minimum of six years after origination and make them available to the Regional Water Board upon request. The discharger shall submit electronic documents and data reports to the State Water Board GeoTracker database, in addition to submitting hard copies of documents and data reports to the Regional Water Board.

9. **SMP Revisions**: Revisions to the Self-Monitoring Program may be ordered by the Executive Officer, either on his/her own initiative or at the request of the discharger. Prior to making SMP revisions, the Executive Officer will consider the burden, including costs, of associated self-monitoring reports relative to the benefits to be obtained from these reports.

Attachments: Tables 1, 2 and 3

TABLE 1
GROUNDWATER MONITORING WELL SAMPLING AND ANALYSES PLAN
Stewart Drive Operable Unit, Subunits 1, 2, and 5
Sunnyvale, Santa Clara County

Well #	Sampling Frequency	Well #	Sampling Frequency	Well #	Sampling Frequency
SDOU Subunit 1					
ARQ4	5	ARQ24B	2	ARQ45B*	5
ARQ6	5	ARQ25B*	A	ARQ46B	5
ARQ7	2	ARQ26B	5	LF01	2
ARQ9	5	ARQ32B	5	LF11	5
ARQ10	2	ARQ34B	5	LF12	5
ARQ11	2	ARQ35B	5	LF13	5
ARQ12A*	A	ARQ37B	5	LF17	5
ARQ16	2	ARQ41B	5	LF28	2
ARQ17	2	ARQ42B	5	LF36	5
ARQ21	A	ARQ43B	5		
SDOU Subunit 2					
ARQ19	2	E2	5	LF34	2
ARQ20	2	E3	5	MW-2	5
E1	5	LF33	2		
SDOU Subunit 5					
AW-2A	2	AW-11B1	2	48-S	5
AW-3A	5	WA-1	2	48-D	2
AW-5B1	2	WA-2	5	S-38A	2
AW-9A	2	WA-3	2	S-38B	5
AW-10A	2				

Table 1 Notes:
A = Annually; 2 = Every 2 years; 5 = Every 5 years

Groundwater samples will be collected from monitoring wells at the sampling frequency listed above, to the extent access for sampling is available from the property owner. Groundwater samples will be analyzed for VOCs using U.S. EPA Method 8260 or updated U.S. EPA-approved SW-846 method.

Groundwater levels will be measured annually in the wells listed above in the A-aquifer and B1-aquifer zones of SDOU subunits 1, 2, and 5.

* See Table 2 for additional monitoring at wells ARQ12A, ARQ25B, and ARQ45B.

TABLE 2
EAB TREATMENT MONITORING

Stewart Drive Operable Unit, Subunits 1, 2, and 5
Sunnyvale, Santa Clara County

Well #	Sampling Frequency (1)	Analysis
ARQ12A	SA	VOCs and EAB Parameters (2)
ARQ25B	SA	VOCs and EAB Parameters (2)
ARQ45B	A	VOCs and EAB Parameters (2)
ARQ10	A	VOCs
ARQ17	A	VOCs
ARQ21	A	VOCs

Table 2 Notes:
A = Annually
EAB = enhanced anaerobic bioremediation
SA = Semi-Annually
VOCs = volatile organic compounds

(1) Groundwater samples will be collected from monitoring wells at the sampling frequency listed above. Collecting and analyzing samples for EAB treatment monitoring pursuant to this Table 2 also meets the requirements for groundwater monitoring at these wells as required under Table 1 when the required sampling events coincide.

(2) EAB parameters include laboratory analysis of total organic carbon, anions (chloride, nitrate, sulfate), sulfide, manganese, alkalinity, and field measurement of oxidation-reduction potential, dissolved oxygen, ferrous iron, pH, conductivity, and turbidity.

TABLE 3
SOIL GAS AND INDOOR AIR MONITORING

Stewart Drive Operable Unit, Subunits 1, 2, and 5
Sunnyvale, Santa Clara County

Location	Sampling Frequency	Analytes
Soil Gas Monitoring *		
SGMP-1	A	VOCs
SGMP-2	A	VOCs
SGMP-3	A	VOCs
SGMP-4	A	VOCs
SGMP-5	A	VOCs
Indoor Air Monitoring **		
Indoor Air (3 locations)	2	Tetrachloroethene Trichloroethene 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene Chloroethane Vinyl chloride
Outdoor Air (1 location)	2	

Table 3 Notes:
A = Annually
SGMP = soil gas monitoring probe
VOCs = volatile organic compounds
2 = once every two years

(*) Soil gas samples will be collected at the sampling frequency listed above. Samples will be analyzed for VOCs using U.S. EPA Method TO-15.

(**) Indoor air samples will be collected from three locations inside the building with the address 999 East Arques Avenue, and an outdoor air sample will be collected concurrently from one location on the roof of the building. The air samples will be analyzed for the VOCs listed in the table. Indoor air sampling was performed during April 2007, October 2007, and February 2012. The next round of indoor air sampling is scheduled for October 2014.