California Regional Water Quality Control Board
North Coast Region

MONITORING AND REPORTING PROGRAM NO. R1-2005-0100

FOR

(Former) Marlow Center One-Hour Martinizing
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GROUNDWATER MONITORING

1. Prior to purging each monitoring well for sampling, the depth to groundwater shall be measured to the nearest 0.01-foot. The groundwater elevations for each monitoring event shall be reported in tabular form indicating the top of casing elevation, the groundwater elevation referenced to mean sea level and the actual depth to groundwater.
2. Prior to purging, each monitoring well shall be monitored at the depth of the well screen for the following parameters: oxidation-reduction potential, pH, temperature, and dissolved oxygen.
3. Groundwater samples shall be collected for chemical analysis from all monitoring wells within three months prior to initiating ozone sparging, one month (plus or minus seven days) following the first ozone injections, and quarterly thereafter.
4. Groundwater samples shall be analyzed for the following constituents:
   a. Volatile Organics Compounds (EPA Method 8260 Full Scan);
   b. Dissolved metals: hexavalent chromium, uranium, vanadium, selenium, lead and molybdenum;
   c. Inorganic Compounds: bromide and bromate.
5. Chemical analyses must be performed by a laboratory certified by the State of California Department of Health Services.
6. Analytical methods for sample analyses shall achieve practical quantification reporting limits that are adequate for evaluating regulatory action levels for each constituent. A table of water quality objectives and common laboratory reporting limits for the constituents of concern is incorporated in this Order as Appendix A.

REPORTING

7. Groundwater monitoring reports shall be submitted to the North Coast Regional Water Quality Control Board at 5550 Skylane Boulevard, Suite A, Santa Rosa, California, 95403 according to the following schedule:

First Quarter	=	January, February, March	Report Due April 30th
Second Quarter	=	April, May, June	Report Due July 31st
Third Quarter	=	July, August, September	Report Due October 31st
Fourth Quarter	=	October, November, December	Report Due January 30th

8. Groundwater monitoring data and reports shall also be submitted electronically to the State Water Resources Control Board's Geographic Environmental Information Management System database (GeoTracker) as required by Title 23, Division 3, Chapter 30, Article 2, Sections 3890-3895 of the California Code of Regulations.

9. Groundwater monitoring reports shall include the following elements:

   a. A narrative description of the work conducted;
   b. A groundwater elevation map for each sampling event;
   c. A contaminant distribution map showing isograms for constituents of concern detected in groundwater during the monitoring event;
   d. Analytical data tables including both current and historical analytical results;
   e. Copies of the well purging and sampling field logs; chain of custody documents; and signed laboratory reports including quality control data and explanations of analytical anomalies, if any. These supporting documents may be included as appendices to the report;
   f. A soil vapor extraction system operational summary: The summary shall include a table summarizing the operational data, including: influent and effluent analytical results, soil vapor volume extracted, and cumulative contaminant mass removed. Copies of monitoring reports prepared for compliance with the Bay Area Air Quality Management District permit shall also be submitted to the Regional Water Board.

Ordered by _____
for Catherine E. Kuhlman
Executive Officer

October 18, 2005

(101805_JAT_Marlow Ozone M&R)

APPENDIX A
VOC and ORP-Sensitive Constituents of Concern

CHEMICAL	Common Minimum Detection Level	WATER QUALITY OBJECTIVE	WATER QUALITY OBJECTIVE CITATION
Bromate	5 µg/l	10 µg/l	Primary MCL US EPA
Bromide	100 µg/l	2300 µg/l	Suggested No Adverse Response Levels National Academy of Sciences
1,1-Dichloroethane	<0.5 µg/l	3 µg/l *	California Public Health Goal (Cal/EPA, OEHHA)
1,2-Dichloroethane	<0.5 µg/l	0.5 µg/l	For protection of domestic supply, Title 22 Section 64444.5
1,1-Dichloroethene	<0.5 µg/l	0.06 µg/l	USEPA Health Advisory
cis-1,2-Dichloroethene	<0.5 µg/l	6 µg/l	Primary MCL California Dept of Health Services
trans-1,2-Dichloroethene	<0.5 µg/l	10 µg/l	Primary MCL California Dept of Health Services
1,1,1-Trichloroethane	<0.5 µg/l	200 µg/l	Primary MCL US EPA
1,1,2-Trichloroethane	<0.5 µg/l	0.5µg/l	Cal/EPA Cancer Potency Factor
Trichloroethene	<0.5 µg/l	0.8 µg/l *	California Public Health Goal (Cal/EPA, OEHHA)
Tetrachloroethene	<0.5 µg/l	0.06 µg/l	California Public Health Goal (Cal/EPA, OEHHA)
Vinyl Chloride	<0.5 µg/l	0.05 µg/l	California Public Health Goal (Cal/EPA, OEHHA)
Uranium (U)	1 µg/l	0.5 µg/l	California Public Health Goal or PHG
Hexavalent Chromium (Cr)	5 µg/l	21 µg/l	USEPA IRIS Reference Dose (RfD) as a drinking water level
Lead (Pb)	0.5 µg/l	2 µg/l	California Public Health Goal or PHG
Molybdenum (Mo)	3 µg/l	35 µg/l	USEPA IRIS Reference Dose (RfD) as a drinking water level
Selenium (Se)	5 µg/l	35 µg/l	USEPA IRIS Reference Dose (RfD) as a drinking water level
Vanadium (V)	50 µg/l	50 µg/l	California State Action Levels (Department of Health Services)