

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

MONITORING AND REPORTING PROGRAM NO. _____
FOR
SULARA ENTERPRISES, INC.
FOR
POST-CLOSURE MAINTENANCE OF
DRILLING MUD DISPOSAL FACILITY
GLENN COUNTY

The Discharger shall comply with this Monitoring and Reporting Program and with Title 27, California Code of Regulations, Section 20005, et seq. (hereafter Title 27), as ordered by Waste Discharge Requirements Order No. _____.

A. REQUIRED MONITORING REPORTS

REPORT TYPE	FREQUENCY	REPORT DUE DATES
Groundwater and Facility Monitoring Report (Groundwater Monitoring C.1)	Semiannual	By end of month following semiannual period. 31 July and 31 January each year
Annual Monitoring Summary (Reporting Requirements B.8)	Annual	By 31 January each year

Semiannual and annual monitoring reports shall be submitted to the Regional Water Board in accordance with the schedule listed above for the calendar period in which samples were taken or observations made.

B. REPORTING REQUIREMENTS

1. The Discharger shall submit semiannual monitoring reports with the data and information required in this Monitoring and Reporting Program and as required in Order No. _____. Reports that do not comply with the required format will be **REJECTED** and the Discharger shall be deemed to be in noncompliance with the Waste Discharge Requirements.
2. The water quality monitoring program shall include appropriate and consistent sampling and analytical procedures and methods designed to ensure that monitoring results provide a reliable indication of water quality at all compliance and background monitoring points [Title 27 §20415(e)(4)].
3. The Discharger shall arrange the data in tabular form so that the date, the constituents, the concentrations, and the units are readily discernible. The analytical data from each monitoring point shall also be graphed over time and presented in each semiannual Groundwater Monitoring Report. The data shall be summarized in a manner that clearly demonstrates compliance with the Waste Discharge Requirements, or the lack thereof. Data shall also be submitted in a digital format acceptable to the Executive Officer.

4. The Discharger shall retain records of all monitoring information, including calibration and maintenance records, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained throughout the life of the facility including the post-closure maintenance period.

Such legible records shall show the following for each sample:

- a. Sample identification and the monitoring point or background monitoring point from which it was taken, along with the identity of the individual who obtained the sample;
 - b. Date, time, and manner of sampling;
 - c. Date and time that analyses were started and completed, and the name of the personnel and laboratory performing each analysis; and
 - d. Results of analyses, and the MDL and PQL for each analysis.
5. A transmittal letter explaining the essential points shall accompany each report. At a minimum, the transmittal letter shall identify any violations found since the last report was submitted, and if the violations were corrected. Any violations that occurred during the reporting period shall also be discussed **in detail** within the required monitoring report. If no violations have occurred since the last submittal, then this shall be stated in the transmittal letter. Each monitoring report and/or transmittal letter shall include the signature requirements of Provision E.3 in WDR Order No. _____.
 6. Each monitoring report shall include a compliance evaluation summary. The summary shall contain at least:
 - a. For each monitoring point and background monitoring point addressed by the report, a description of:
 - 1) The time of water level measurement;
 - 2) The type of pump - or other device - used for purging and the elevation of the pump intake relative to the elevation of the screened interval;
 - 3) The method of purging (the pumping rate; the equipment and methods used to monitor field pH, temperature, conductivity and turbidity during purging; the calibration of the field equipment; results of the pH, temperature, conductivity, and turbidity testing; and the method of disposing of the purge water) to remove all

portions of the water that was in the well bore while the sample was being taken; and

- 4) The type of pump - or other device - used for sampling, if different than the pump or device used for purging.
- b. A map or aerial photograph showing the locations of waste management units, on-site structures, surface or storm water drainages, observation stations, monitoring points, and background monitoring points.
 - c. For each groundwater body, a description and graphical presentation of the gradient and direction of groundwater flow under/around the Unit, and the groundwater flow rate, based upon water level elevations taken prior to the collection of the water quality data submitted in the report.
 - d. Results of field and laboratory tests shall be reported in each monitoring report. This shall include laboratory reports listing analytical methods and results, all QA/QC data, and Chain of Custody documentation.
 - e. All additional information required under Section C. Monitoring, of this Monitoring and Reporting Program.
 - f. A summary and certification of completion of all **Standard Observations** for the Unit and for the perimeter of the Unit. Standard observations shall be conducted **monthly** during the wet season (1 October to 30 April) and **quarterly** during the dry season (1 May to 30 September). The Standard Observations shall include:
 - 1) For the Unit:
 - a) Evidence of ponded water at any point on the facility (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted waste.
 - 2) Along the perimeter of the Unit:
 - a) Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map);
 - b) Evidence of odors - presence or absence, characterization, source, and distance of travel from source; and
 - c) Evidence of erosion and/or of day-lighted waste.

7. The Discharger shall report by telephone any seepage from the disposal area **immediately** after it is discovered. A written report shall be filed with the Regional Water Board **within seven days**, containing at least the following information:
 - a. A map showing the location(s) of seepage;
 - b. An estimate of the flow rate;
 - c. A description of the nature of the discharge (e.g., all pertinent observations and analyses);
 - d. Verification that samples have been submitted for analyses of the Monitoring Parameters and Constituents of Concern listed in Table I of this MRP, and an estimated date that the results will be submitted to the Regional Water Board; and
 - e. Corrective measures underway or proposed, and the corresponding time schedule for completing the corrective action measures.

8. The Discharger shall submit an **Annual Monitoring Summary Report** to the Regional Water Board covering the reporting period of the previous monitoring year. This report shall contain:
 - a. All monitoring parameters and constituents of concern shall be graphed to show historical trends at each monitoring point and background monitoring point, for all samples taken within at least the previous five calendar years. Each graph shall plot the concentration of one or more constituents for the period of record for a given monitoring point or background monitoring point, at a scale appropriate to show trends or variations in water quality. The graphs shall plot each datum, rather than plotting mean values. For any given constituent or parameter, the scale for background plots shall be the same as that used to plot downgradient data. Graphical analysis of monitoring data may be used to provide significant evidence of a release.
 - b. All historical monitoring data, including data for the previous year, shall be submitted in tabular form as well as in a digital file format. The Regional Water Board regards the submittal of data in hard copy and in digital format as "...the form necessary for..." statistical analysis [Title 27 CCR Section 20420(h)], in that this facilitates periodic review by Regional Water Board staff.
 - c. A comprehensive discussion of the compliance record, and the results of any corrective actions taken or planned that may be needed to bring the Discharger into full compliance with the waste discharge requirements.

- d. A map of the Facility.
- e. A written summary of the monitoring results, indicating any changes made or observed since the previous annual report.
- f. A comprehensive discussion of maintenance or repairs to any Facility structure, control system, or monitoring device during the previous year's reporting period (see Facility Specification B.3 of WDR Order No. _____).
- g. A detailed discussion of the adequacy of the financial assurance mechanisms for corrective action and post-closure maintenance, including proof that the financial assurance mechanisms have been increased in accordance with the annual inflation factor calculation for the previous year (see Financial Assurances C.4 of WDR Order No. _____).
- h. Results of the annual inspection required pursuant to Facility Monitoring C.3.a below.

C. MONITORING

All point of compliance monitoring wells established for the groundwater detection monitoring program shall constitute the monitoring points for the Water Quality Protection Standard. All detection monitoring program groundwater monitoring wells shall be sampled and analyzed for monitoring parameters and constituents of concern as indicated and listed in Table I at the end of this Monitoring and Reporting Program.

Method detection limits and practical quantitation limits shall be reported. All peaks shall be reported, including those that cannot be quantified and/or specifically identified.

The Discharger may use alternative analytical test methods, including new USEPA approved methods, provided the methods have method detection limits equal to or lower than the analytical methods specified in this Monitoring and Reporting Program and provided that the new proposed analytical method(s) is/are approved by the Executive Officer prior to use.

1. Groundwater

The Discharger shall operate and maintain a groundwater detection monitoring system that complies with applicable provisions of §20415 and §20420 of Title 27. The detection monitoring system shall be certified by a California-licensed professional civil engineer or geologist as meeting the requirements of Title 27. The Discharger shall collect, preserve, and transport groundwater samples in accordance with an approved Sample Collection and Analysis Plan.

The Discharger shall determine the groundwater flow rate and direction in the

uppermost aquifer and in any zones of perched water and in any additional zone of saturation monitored pursuant to this Monitoring and Reporting Program, and report the results semiannually, including the times of highest and lowest elevations of the water levels in the wells.

Hydrographs of each well shall be submitted showing the elevation of groundwater with respect to the elevations of the top and bottom of the screened interval and the elevation of the pump intake. Hydrographs of each well shall be prepared and submitted with each semiannual Facility and Groundwater Monitoring Report.

Groundwater samples shall be collected from the point-of-compliance wells, background wells, and any additional wells added as part of the approved groundwater monitoring system. Samples shall be collected and analyzed for the monitoring parameters and constituents of concern in accordance with the methods and frequencies specified in Table I.

The monitoring parameters and constituents of concern shall also be evaluated each reporting period with regards to the cation/anion balance, and the results shall be graphically presented using a Stiff diagram, a Piper graph, or a Schoeller plot.

The groundwater monitoring system at the Facility regulated by this Monitoring and Reporting Program consists of four monitoring wells. A description of the current groundwater monitoring system follows:

Well ID	Service Type	Depth	Screen Interval
MW-1	Background	45 feet	35 to 45 feet bgs
MW-2	Compliance	45 feet	35 to 45 feet bgs
MW-3	Compliance	50 feet	40 to 50 feet bgs
MW-4	Compliance	50 feet	40 to 50 feet bgs

bgs = Below Ground Surface

2. Leachate/Seep Monitoring

The waste management unit at the Facility is unlined and has a final cover system in-place, and there is no leachate collection and removal system. However, leachate could seep to the surface and pose a threat to surface and groundwater.

Leachate that seeps to the surface from the Unit shall be sampled and analyzed for the monitoring parameters and constituents of concern listed in Table I upon detection. The quantity of leachate shall be estimated and reported as Leachate Flow Rate (in gallons/day).

3. Facility Monitoring

a. Facility Inspection

Annually, prior to the anticipated rainy season, but no later than **30 September**, the Discharger shall conduct an inspection of the facility. The inspection shall assess damage to the drainage control system, groundwater monitoring equipment (including wells, etc.), and shall include the Standard Observations described in Reporting Requirements B.6.f above. Any necessary construction, maintenance, or repairs shall be completed by **31 October**. The Discharger shall submit information describing the results of the inspection and the repair measures implemented, including photographs of the problem(s) and the repairs in each Annual Monitoring Summary Report, **due by 31 January each year**.

b. Storm Events

The Discharger shall inspect all precipitation, diversion, and drainage facilities for damage **within 7 days** following major storm events. The inspection shall include the Standard Observations described in Reporting Requirements B.6.f above. Major storm events are defined as 1.5 inches or greater of precipitation within a 24-hour period. Necessary repairs shall be completed **within 30 days** of the inspection. Storm event monitoring results shall be included with each corresponding semiannual Facility and Groundwater Monitoring Report in which observations were made. Storm event monitoring shall include the inspection date(s), the name of the person conducting the inspection, and the amount of precipitation received within the 24-hour period. If no precipitation events of 1.5 inches or greater within a 24-hour period occur within the reporting period, then the corresponding Facility and Groundwater Monitoring Report shall state such.

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The Discharger shall implement the above monitoring program on the effective date of this Program.

Ordered by:

PAMELA C. CREEDON, Executive officer

(Date)

DPS: sae
02/25/2009

TABLE I
GROUNDWATER DETECTION MONITORING PROGRAM

<u>Parameter</u>	<u>Units</u>	<u>Frequency</u>
Field Parameters		
Groundwater Elevation	Ft. & hundredths, M.S.L.	Semiannual
Temperature	°C	Semiannual
Electrical Conductivity	µmhos/cm	Semiannual
pH	pH units	Semiannual
Turbidity	Turbidity units	Semiannual
Monitoring Parameters and Constituents of Concern		
Total Dissolved Solids (TDS)	mg/L	Semiannual
Chloride	mg/L	Semiannual
Carbonate	mg/L	Semiannual
Bicarbonate	mg/L	Semiannual
Nitrate - Nitrogen	mg/L	Semiannual
Sulfate	mg/L	Semiannual
Calcium	mg/L	Semiannual
Magnesium	mg/L	Semiannual
Potassium	mg/L	Semiannual
Sodium	mg/L	Semiannual
TPH-diesel (EPA Method 8015M)	µg/L	Semiannual