CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

SELF-MONITORING PROGRAM FOR

DOW CHEMICAL COMPANY
PITTSBURG FACILITY
CONTRA COSTA COUNTY

TENTATIVE ORDER

CONSISTS OF

PART A

AND

PART B

PART A

This Self-Monitoring Program (SMP) specifies monitoring and reporting requirements, including:

(a) General monitoring requirements for landfills and waste management units (Part A);
(b) Self-monitoring report content and format (Part A);
(c) Self-monitoring report submittal frequency and schedule (Part B);
(d) Monitoring locations and frequency (Part B); and
(e) Monitoring parameters and analytes (Part B).

A. AUTHORITY AND PURPOSE

For discharges of waste to land, water quality monitoring is required pursuant to CCR, Division 2, Title 27, Subdivision 1, Chapter 3, Subchapter 3, sections 20380 through 20435. The principal purposes of an SMP are: (1) to document compliance with WDRs and prohibitions established by the Regional Water Board, (2) to facilitate self-policing by the Discharger in the prevention and abatement of pollution arising from the waste discharge, (3) to develop or assist in the development of effluent standards of performance and toxicity standards, and (4) to assist the Discharger in complying with the requirements of Title 27.

B. MONITORING REQUIREMENTS

Monitoring refers to the observation, inspection, measurement, and/or sampling of environmental media, waste management units (WMUs), containment and control facilities, and waste disposed in each WMU. The following defines the types of monitoring that may be required.

Monitoring of Environmental Media

The Regional Water Board may require monitoring of groundwater, surface water, vadose zone, stormwater, leachate, landfill gas, and any other environmental media that may pose a threat to water quality or provide an indication of a water quality threat at the site.

Sample collection, storage, and analyses shall be performed according to the most recent version of U.S. EPA-approved methods or in accordance with a sampling and analysis plan (SAP) approved by Regional Water Board staff. Analytical testing of environmental media required by this SMP shall be performed by a State-approved laboratory for the required analyses. The director of the laboratory whose name appears on the certification shall be responsible for supervising all analytical work in his/her laboratory and shall have signing authority for all reports or may designate signing of all such work submitted to the Regional Water Board.

All monitoring instruments and devices used to conduct monitoring in accordance with this SMP shall be maintained and calibrated as necessary to ensure their continued accuracy. All flow measurement devices shall be calibrated at least once every two years.

Receiving waters refer to any surface water that actually or potentially receives surface or groundwater that pass over, through, or under waste materials or impacted soils. In this case, the groundwater beneath and adjacent to landfill areas and the surface runoff from the site are considered receiving waters.

Standard Observations

Standard observations refer to observations within the limits of each WMU, at their perimeter, and of the receiving waters beyond their limits. Standard observations include:

1. WMUs:

   a. Evidence of ponded water at any point on the WMU;
   b. Evidence of odors, including their presence or absence, characterization, source, and distance of travel from source; and
   c. Evidence of erosion and/or daylighted waste.

2. Perimeter of WMUs:

   a. Evidence of liquid leaving or entering the WMU, estimated size of affected area, and flow rate (show affected area on map);
   b. Evidence of odors, including their presence or absence, characterization, source, and distance of travel from source; and
   c. Evidence of erosion and/or daylighted waste.

3. Receiving Waters:

   a. Floating and suspended materials of waste origin, including their presence or absence, source, and size of affected area;
   b. Discoloration and turbidity: description of color, source, and size of affected area;
   c. Evidence of odors, presence or absence, characterization, source, and distance of travel from source;
   d. Evidence of beneficial use, such as presence of water associated with wildlife;
   e. Estimated flow rate; and
   f. Weather conditions, such as estimated wind direction and velocity, total precipitation.

Facilities Inspections

Facilities inspections refer to the inspection of all containment and control structures and devices associated with the WMUs. Containment and control facilities may include the following:

1. Intermediate and final covers;
2. Stormwater management system (SWMS) elements such as perimeter drainage and diversion channels, ditches and downchutes, and detention and sedimentation ponds or collection tanks;
3. Ponded water; and
4. Leachate collection and recovery system (LCRS) elements such as leachate storage tanks, pumps and control equipment.

Quality Assurance/Quality Control (QA/QC) Sample Monitoring

The Discharger shall collect duplicate, field blank, equipment blank (if appropriate) and trip blank samples for each semiannual monitoring event at the following frequencies:

1. Duplicate sample – one sample per 20 regular samples;
2. Field blank – one per day during each semiannual monitoring event;
3. Equipment blank – one sample per 10 monitoring stations; and
4. Trip blank – one sample per each semiannual monitoring event.

Waste Monitoring

Waste monitoring shall consist of recording on a monthly basis the following:

1. The total volume and weight of waste disposed at the site during the month;
2. Remaining landfill capacity/waste volume in place; and
3. Locations and dimensions of the fill areas on a map.

C. REPORTING REQUIREMENTS

Reporting responsibilities of waste dischargers are specified in CWC sections 13225(a), 13267(b), 13383, and 13387(b) and this Regional Water Board's Resolution No.73-16 and Order No. 93-113. At a minimum, each Annual Self-Monitoring Report (SMR) shall include the following information (the Semi-annual Exceptions Letter is not subject to these requirements but must indicate any monitoring results that exceed their three year range of values):

1. Transmittal Letter: A cover letter transmitting the essential points of the monitoring report shall be included with each monitoring report. The transmittal letter shall discuss any violations during the reporting period and actions taken or planned to correct the problem. The letter shall also certify the completion of all monitoring requirements. 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.

2. Graphic Presentation: The following maps, figures, and graphs (if applicable) shall be included in each SMR to visually present data collected pursuant to this SMP:

   a. Plan-view maps showing all monitoring and sampling locations, WMUs, containment and control structures, treatment facilities, surface water bodies, and site/property boundaries;
   b. Groundwater level/piezometric surface contour maps for each groundwater-bearing zone of interest showing inferred groundwater gradients and flow directions under/around each WMU, based upon the past and present water level elevations and pertinent visual observations; and
   c. Any other maps, figures, photographs, cross-sections, graphs, and charts necessary to visually demonstrate the appropriateness and effectiveness of sampling, monitoring, characterization, investigation, or remediation activities relative to the goals of this SMP.

3. Tabular Presentation: The following data (if applicable) shall be presented in tabular form and included in each SMR to show a chronological history and allow quick and easy reference:

   a. Well designation;
   b. Well location coordinates (latitude and longitude);
   c. Well construction (including top of well casing elevation, total well depth, screen interval depth below ground surface, and screen interval elevation);
   d. Groundwater depths;
   e. Groundwater elevations;
   f. Current analytical results (including analytical method and detection limits for each constituent);
   g. Historical analytical results (including at least the past five years in the annual report unless otherwise requested); and
   h. Measurement dates.

4. Compliance Evaluation Summary and Discussion:

   a. A summary and certification of completion of all environmental media monitoring, standard observations, and facilities inspections;
   b. The quantity and types of wastes disposed of during the reporting period, and the locations of the disposal operations, if applicable;
   c. A description of the waste stream including the percentage of each waste type (e.g., residential, commercial, industrial, construction/demolition), if applicable;
   d. The signature of the laboratory director or his/her designee indicating that he/she has supervised all analytical work in his/her laboratory; and
   e. A discussion of the field and laboratory results that includes the following information:

      (1) Data interpretations;
      (2) Conclusions;
      (3) Recommendations;
      (4) Newly implemented or planned investigations and remedial measures;
      (5) Data anomalies;
      (6) Variations from protocols;
      (7) Condition of wells; and
      (8) Effectiveness of leachate monitoring and control facilities.

5. Appendices: The following information shall be provided as appendices in electronic format only unless requested otherwise by Regional Water Board staff and unless the information is already contained in a SAP approved by Regional Water Board staff:

   a. New boring and well logs;
   b. Method and time of water level measurements;
   c. Purging methods and results including the type of pump used, pump placement in the well, pumping rate, equipment and methods used to monitor field pH, temperature, and electrical conductivity, calibration of the field equipment, pH temperature, conductivity, and turbidity measurements, and method of disposing of the purge water;
   d. Sampling procedures, field, equipment, and travel blanks, number and description of duplicate samples, type of sample containers and preservatives used, the date and time of sampling, the name of the person actually taking the samples, and any other relevant observations; and
   e. Documentation of laboratory results, analytical methods, detection limits and reporting limits, and Quality Assurance/Quality Control (QA/QC) procedures for the required sampling.

D. CONTINGENCY REPORTING

1. The Discharger shall report any significant discharge from the disposal area immediately after it is discovered to the Regional Water Board by calling the Spill Hotline at 1-800-852-7550 and by sending an email to Rb2SpillReports@waterboards.ca.gov. The Discharger shall submit a written report with the Regional Water Board within five days of discovery of any discharge. The written report shall contain, at a minimum, the following information:

   a. A map showing the location(s) of discharge;
   b. Approximate flow rate;
   c. Nature of effects (e.g., all pertinent observations and analyses); and
   d. Corrective measures underway or proposed.

2. The Discharger shall submit a written report to the Regional Water Board within seven days of determining that a statistically significant difference occurred between a SMP sample set and an approved Water Quality Protection Standard (WQPS). The written report shall indicate which WQPS(s) have been exceeded. If appropriate, the Discharger shall resample at the compliance point(s) where this difference has been found within 30 days.

3. If re-sampling and analysis confirms the earlier finding of a statistically significant difference between SMP results and WQPS(s), the Discharger shall, upon determination by the Executive Officer, submit to the Regional Water Board an amended Report of Waste Discharge as specified in section 20420 of Title 27 for establishment of an Evaluation Monitoring Program meeting the requirements of section 20425 of Title 27.

E. REPORTING SCHEDULE

The Discharger shall submit SMRs to Regional Water Board staff in accordance with the schedules indicated in Part B of this SMP. Reports due at the same time may be combined into one report for convenience, as long as monitoring activities and results pertaining to each monitoring period are clearly distinguishable. Reports shall be submitted in accordance with Provision 3 in these WDRs.

F. MAINTENANCE OF WRITTEN RECORDS

The Discharger shall maintain information required pursuant to this SMP for at least five years. The five-year period of retention shall be extended during the course of any unresolved litigation regarding a discharge or when requested by the Regional Water Board.

PART B

DESCRIPTION OF OBSERVATION STATIONS AND SCHEDULE OF OBSERVATIONS

A. SURFACE, GROUNDWATER, AND LEACHATE MONITORING

The Discharger shall sample surface water, groundwater, leachate, surface springs, and the underdrains as detailed in Table A.

B. STANDARD OBSERVATIONS AND FACILITIES INSPECTIONS

Standard Observations shall be made for the Monofill, Central Landfill, Hexachlororbenzene Trench, Former Outfall Pond, and the Northeast Landfill. Observations shall be made at the locations and frequency described in Table A.

C. REPORT DUE DATES

Reports shall be due on the following schedule:

ANNUAL REPORT: March 1 of each year
SEMI-ANNUAL EXCEPTIONS Letter: August 31 of each year

Attachment: Table A: Monitoring Points, Parameters, and Frequency
Figure SMP-1: Monitoring Well Locations and Frequencies

TABLE A				
Well	**Monitored Interval**	**Sampling Frequency**	**Rationale**	**Parameters**
Central Landfill				
114A	Water Table	Semi-Annual	Detection Monitoring	VOCs
114B1	Upper Sand	Biennial	Downgradient of Central Landfill	VOCs
Monofill				
115A	Water Table	Semi-Annual	Downgradient of Monofill	VOCs
115B1	Upper Sand	Semi-Annual	Downgradient of Monofill	VOCs
115C	Lower Sand	Semi-Annual	Downgradient of Monofill	VOCs
116A	Water Table	Semi-Annual	Detection Monitoring	VOCs
116B1	Upper Sand	Semi-Annual	Downgradient of Monofill	VOCs
117A	Water Table	Semi-Annual	Downgradient of Monofill	VOCs
118A	Water Table	Semi-Annual	Downgradient of Monofill	VOCs
503C	Lower Sand	Annual	Downgradient of Monofill	VOCs
611C	Lower Sand	Semi-Annual	Downgradient of Monofill	VOCs
Former Outfall Pond (FOP)				
204A	Water Table	Semi-Annual	Downgradient of FOP	HG/Me-HG
306A	Water Table	Semi-Annual	Detection Monitoring	HG/Me-HG
306B1	Upper Sand	Annual	Downgradient of FOP	HG/Me-HG
306C	Lower Sand	Annual	Downgradient of FOP	HG/Me-HG
803A	Water Table	Semi-Annual	Downgradient of FOP	HG/Me-HG
805A	Water Table	Semi-Annual	Downgradient of FOP	HG/Me-HG
PZ-102A	Water Table	Semi-Annual	Downgradient of FOP	HG/Me-HG
PZ-104A	Water Table	Semi-Annual	Detection Monitoring	HG/Me-HG
Kirker Creek				
503A	Water Table	Biennial	Adjacent to Kirker Creek	VOCs/SVOCs
503B	Upper Sand	Semi-Annual	Adjacent to Kirker Creek	VOCs/SVOCs
Northeast Landfill				
601A	Water Table	Semi-Annual	Detection Monitoring	VOCs
601B1	Upper Sand	Biennial	Downgradient of Landfill	VOCs
601C	Lower Sand	Biennial	Downgradient of Landfill	VOCs
603A	Water Table	Biennial	Downgradient of LF, perimeter	VOCs
603B1	Upper Sand	Biennial	Downgradient of Landfill	VOCs

TABLE A				
Well	**Monitored Interval**	**Sampling Frequency**	**Rationale**	**Parameters**
Hexachlorobenzene Trench				
509A	Water Table	Semi-Annual	Detection Monitoring	SVOCs
510A	Water Table	Semi-Annual	Downgradient of Trench, closure	SVOCs
900/1000 Block				
901A	Water Table	Semi-Annual	Detection Monitoring	VOCs
901B1	Upper Sand	Annual	Downgradient of Block	VOCs
903B1	Upper Sand	Biennial	Downgradient of Block	VOCs
904B1	Upper Sand	Biennial	Downgradient of Block	VOCs
Leachate Monitoring				
Leachate Sumps		Semi-Annual if sufficient volume is present in sump	Monitoring of Waste Management Units	VOCs/SVOCs
Standard Observations				
		Weekly (Nov. – April) Monthly (May – October)	Monitoring of Waste Management Units	Observe each waste management unit and the perimeter of each unit for evidence of liquid entering or leaving unit, ponded water, odors, and evidence of erosion or daylighted refuse
Seepage Monitoring				
		Daily until action is taken to stop the seepage and prevent recurrence	Monitoring of Waste Management Units	Observe perimeter of each unit for seepage from the unit. If seepage, observe for discoloration, turbidity, evidence of odors, evidence of beneficial use, flow rate, and weather conditions. Obtain a grab sample and analyze for SVOCs, VOCs, and mercury

VOCs analyzed by EPA Method 8260 or equivalent; SVOCs by EPA Method 8270 or equivalent; Mercury and Methyl Mercury by EPA methods 1631 and 1630 or equivalent.