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).

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.

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
Routine observations and inspections are conducted in accordance with the EISB operating procedures and as noted in EISB system operating log.

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.

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 3 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 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 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.

CONTINGENCY REPORTING

The Discharger shall report any significant discharge associated with EISB operations 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 map showing the location(s) of discharge; Approximate flow rate; Nature of effects (e.g., all pertinent observations and analyses); and Corrective measures underway or proposed.

REPORTING SCHEDULE

Two groundwater monitoring events are conducted each year, one in the spring and one in the fall. The wells that are sampled are divided into two groups: those that are sampled annually (only in the spring) and those that are sampled semiannually (in the spring and fall). The first monitoring event of the year is conducted at upgradient, effluent, downgradient, and perimeter monitoring wells and typically is performed in March or April. The results from the first sampling event are summarized in a letter report to RWQCB noting any specific exceptions in the collection of the data or recent upward trends. This letter report may be combined with WDR mid-year letter report due at the same time. The second monitoring event of the year is conducted at the upgradient and effluent monitoring wells and typically is conducted between September and November.

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, if monitoring activities and results pertaining to each monitoring period are clearly distinguishable. Reports shall be submitted in accordance with provisions of the SCR.

A. 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 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, GROUND WATER, AND LEACHATE MONITORING

The Discharger shall sample surface water, groundwater, leachate, surface springs, and the underdrains as detailed in Table 1 and shown in Figure 1.

B. STANDARD OBSERVATIONS AND FACILITIES INSPECTIONS

Facility inspections shall be made for EISB. Observations and inspections shall be made at the locations and frequency described in the EISB site operating procedures.

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

I, Michael Montgomery, Executive Officer, hereby certify that the foregoing Self-Monitoring Program:

1. Has been developed in accordance with the procedures set forth in this Board's Resolution No. 73-16 in order to obtain data and document compliance with waste discharge requirements established in this Board's Order No. R2-2019-xxxx

2. Is effective on the date shown below.

3. May be reviewed or modified at any time subsequent to the effective date, upon written notice from the Executive Officer.

Michael Montgomery
Executive Officer

Date Ordered:

Attachments:

Table 1: Monitoring Points, Parameters, and Frequency

Table 2: Approved Tier 2 Screening Levels

Figure 1: Site Location

Figure 2: Monitoring Well and EISB Locations

Table 1. Monitoring Point, Parameters, and Frequency
Self-Monitoring Program
The Dow Chemical Company, Pittsburg Facility, Pittsburg, California

Well ID	Monitoring Parameters	Monitoring Frequency	1st Quarter (April/May) Event	2nd Quarter (June) Event	3rd Quarter (September/ October/ November) Event	4th Quarter (December) Event
Effluent Monitoring Wells						
MW-004C	VOCs (8260) [a]: • carbon tetrachloride • chloroform • methylene chloride • tetrachloroethene • trichloroethene • cis-1,2-dichloroethene • vinyl chloride sulfate Dissolved Gasses: • methane • ethene • ethane Field Measurements: • dissolved oxygen • oxidation-reduction potential • pH • temperature • specific conductivity	Annual	X			
MW-100C		Annual	X			
MW-101B		Annual	X			
MW-502B		Semiannual	X		X	
MW-502C		Semiannual	X		X	
MW-511B		Semiannual	X		X	
MW-511C		Semiannual	X		X	
MW-623C		Annual	X			
MW-633B		Annual	X			
MW-603B		Semiannual	X		X	
MW-631B		Annual	X			
MW-629B		Annual	X			
Downgradient Wells						
MW-201B	VOCs (8260) [a]: • carbon tetrachloride • chloroform • methylene chloride • tetrachloroethene • trichloroethene • cis-1,2-dichloroethene • vinyl chloride sulfate Dissolved Gasses: • methane • ethene • ethane Field Measurements: • dissolved oxygen • oxidation-reduction potential • pH • temperature • specific conductivity	Annual	X			
MW-201C		Annual	X			
MW-804B		Annual	X			
MW-804C		Annual	X			
02MW-009B-0400		Annual	X			
02MW-009C-0400		Annual	X			
MW-422B		Annual	X			
MW-422C		Annual	X			
MW-423B		Annual	X			
MW-423C		Annual	X			
MW-424B		Annual	X			
MW-424C		Annual	X			
MW-425B		Annual	X			
MW-425C		Annual	X			
PZ-612C		Annual	X			

Table 1. Monitoring Point, Parameters, and Frequency

Self-Monitoring Program

The Dow Chemical Company, Pittsburg Facility, Pittsburg, California

Well ID	Monitoring Parameters	Monitoring Frequency	1st Quarter (April/May) Event	2nd Quarter (June) Event	3rd Quarter (September/ October/ November) Event	4th Quarter (December) Event
Perimeter Wells						
MW-206B	VOCs (8260) [a]: • carbon tetrachloride • chloroform • methylene chloride • tetrachloroethene • trichloroethene • cis-1,2-dichloroethene • vinyl chloride sulfate Dissolved Gasses: • methane • ethene • ethane Field Measurements: • dissolved oxygen • oxidation-reduction potential • pH • temperature • specific conductivity	Annual	X			
MW-206C		Annual	X			
MW-202B1		Annual	X			
MW-202C		Annual	X			
MW-306B		Annual	X			
MW-306C		Annual	X			
MW-407C		Annual	X			
TP-413C		Annual	X			
Upgradient Wells						
PZ-005B	VOCs (8260) [a]: • carbon tetrachloride • chloroform • methylene chloride • tetrachloroethene • trichloroethene • cis-1,2-dichloroethene • vinyl chloride	Semiannual	X		X	
PZ-005C		Semiannual	X		X	
MW-123B		Semiannual	X		X	
MW-123C		Semiannual	X		X	
MW-512B		Semiannual	X		X	
MW-512C		Semiannual	X		X	
MW-513B		Semiannual	X		X	
MW-513C		Semiannual	X		X	
MW-635B		Semiannual	X		X	
MW-635C		Semiannual	X		X	
MW-636B		Semiannual	X		X	
MW-636C		Semiannual	X		X	
Block 600 Tank Farm Wells						
MW-637B	VOCs (8260) [a]: • carbon tetrachloride • chloroform • methylene chloride • tetrachloroethene • trichloroethene • cis-1,2-dichloroethene • vinyl chloride	Semiannual	X		X	
MW-638B		Semiannual	X		X	

Table 1. Monitoring Point, Parameters, and Frequency

Self-Monitoring Program

The Dow Chemical Company, Pittsburg Facility, Pittsburg, California

Well ID	Monitoring Parameters	Monitoring Frequency	1st Quarter (April/May) Event	2nd Quarter (June) Event	3rd Quarter (September/ October/ November) Event	4th Quarter (December) Event
Bundesen Bay Surface Water Monitoring						
BB-01 (SW Corner)	VOCs (8260) [a]: • carbon tetrachloride • chloroform • methylene chloride • tetrachloroethene • trichloroethene • cis-1,2-dichloroethene • vinyl chloride	Quarterly	X	X	X	X
BB-02 (SE Corner)		Quarterly	X	X	X	X
BB-03 (Mouth)		Quarterly	X	X	X	X

Notes:

[a] In addition to the routine analysis of the limited list of VOCs, a full suite of VOCs will be conducted once every 2 years per U.S. Environmental Protection Agency (USEPA) SW-846, Method 8260, list of priority pollutants. The next full suite sampling event is the 1st Quarter Event 2020.

ID = identification
NS = Not Sampled
SCR = Site Cleanup Requirements
SMP = Self-Monitoring Program

Table 2. Approved Tier 2 Screening Levels[a]
Self-Monitoring Program
The Dow Chemical Company, Pittsburg Facility, Pittsburg, California

Compound	Tier 2 ESL (ug/l)*
Benzene	46
Carbon Tetrachloride	9.8
Chloroform	620
Chloromethane	1100
1,1-Dichloroethane	47
1,2-Dichloroethane	2000
1,1-Dichloroethene	25
cis-1,2-Dichloroethene	590
trans-1,2-Dichloroethene	590
1,2-Dichloropropane	1500
Hexachlorobenzene	3.7
Hexachloroethane	12
Mercury (elemental)	0.025
Methylene chloride	2200
Methyl mercury	0.003
Pentachlorophenol	7.9
Tetrachloroethene	120
Toluene	130
Trichloroethene	360
Vinyl Chloride	780

Notes:
[a]*Water Board Letter dated 04/26/2103 based on Table F-4a, Summary of Selected Aquatic Habitat Goals, February 2013 ESL*
ESL = Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater
ug/L = micrograms per liter