STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

		AMENDED
IN THE MATTER OF:	)	COMPLAINT No. 00-073
THE DOW CHEMICAL COMPANY	)	
FOR FAILURE TO SUBMIT ACCEPTABLE	)	
TECHNICAL REPORTS	)	ADMINISTRATIVE
PITTSBURG MANUFACTURING PLANT	)	CIVIL LIABILITY
CONTRA COSTA COUNTY	)	

YOU ARE HEREBY GIVEN NOTICE THAT:

1. You are alleged to have violated provisions of law for which the Regional Water Quality Control Board, San Francisco Bay Region (the Regional Board) may impose civil liability under Sections 13267 and 13268 of the California Water Code.

2. Unless waived, a hearing on this matter will be held before the Regional Board on October 18, 2000 at the Elihu M. Harris State Office Building, First Floor Auditorium, located at 1515 Clay Street in Oakland, California. You or your representatives will have the opportunity to be heard and to contest the allegations in this Complaint and the imposition of civil liability by the Regional Board. An agenda showing the time set for the hearing will be mailed to you not less than 10 days before the hearing date. You must submit copies of any written evidence concerning this Complaint to the Board by 8:00 A.M. on October 10, 2000.

3. At the hearing, the Regional Board will consider whether to affirm, reject or modify the proposed administrative civil liability, or whether to refer the matter to the Attorney General for recovery of judicial civil liability.

ALLEGATIONS

4. You are alleged to have violated California Water Code Sections 13267 and 13268 by failing to submit technical reports meeting the requirements of Provisions C.5 and C.10 of Waste Discharge Requirements Order No. 98-059.

   Dow has violated two provisions of Order No. 98-059 by failing to:

   a) Submit a technical report documenting implementation of the approved corrective action remedy for the contaminated groundwater plumes, and;
   b) Submit a technical report documenting closure of the Former Outfall Pond Area according to an approved closure plan.

5. The following facts are the basis for the alleged violations in this matter:

   - Background: The Dow Chemical Company (Dow) owns and operates a chemical manufacturing facility in Pittsburg that formerly produced chlorinated solvents,

including carbon tetrachloride and tetrachloroethene from 1969 to 1991. From 1939 to 1991, Dow also operated a chlor-alkali plant that used elemental mercury as the electrical conductor in a mercury cell manufacturing process to produce chlorine, sodium hydroxide, and hydrogen. Currently latex, agricultural chemicals, fumigants and fungicides are manufactured at the Pittsburg plant. As a result of spills and releases due to past chemical handling practices, groundwater beneath the site is extensively contaminated with chlorinated solvents and other volatile and semi-volatile organic chemicals (VOCs and SVOCs). The Regional Board issued Order 98-059 pursuant to Division 7 of the Water Code, which established a deadline for implementing a facility-wide corrective action remedy for the extensive contaminated groundwater plumes. The corrective action remedy was explicitly defined as the site-wide hydraulic containment system Dow proposed. The Order also set a deadline for capping and closing a former effluent holding pond and open space (Former Outfall Pond Area) adjacent to the former chlor-alkali plant where hazardous levels of mercury had been measured in sediment and soil samples.

Hydraulic Containment: Shortly after Order No. 98-059 was adopted, Dow appealed the Order to the State Water Resources Control Board on the basis that one component of the system, discharge of the extracted and treated groundwater, could not meet limits defined by the Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65), though Dow could meet NPDES discharge limits. No stay was sought or obtained under the petition.

On its own initiative, Dow decided to study the feasibility of implementing an alternative technology, enhanced in-situ bioremediation. After some initial studies, mainly conducted in the laboratory, Dow proceeded to construct and implement a bioremediation system instead of the groundwater extraction and treatment system. Dow kept Board staff apprised of Dow's intent to implement the alternative remedy rather than the remedy required by the Board Order. In turn, Board staff made it clear to Dow that bioremediation could be a viable alternative, if Dow could demonstrate that it works onsite in compliance with the deadline specified in the Order.

Dow did not implement the hydraulic containment remedy, but did respond by preparing and submitting, in July 1999, a Supplemental and Revised Corrective Action Plan (1999) describing an in situ bioremediation alternative. Dow developed the 1999 SRCAP for three reasons: (1) Dow believes that new field data and groundwater modeling studies indicated that the hydraulic containment remedy described in the 1997 Corrective Action Plan, the basis of the Board's Order, would not meet the order's objectives; (2) based on alternative studies, Dow concluded that the most effective and economically feasible alternative was enhanced in situ bioremediation; and (3) Dow felt that because, in its opinion, the hydraulic containment remedy described in the 1997 CAP would not meet the objectives of the Board order, which required implementation by March 31, 2000, Dow determined that it had no choice but to proceed with implementation of the bioremediation remedy without Board approval and without having satisfied board staff that the bioremediation remedy would function as anticipated.

As of July 1, 2000, the date of the initial complaint, Dow had not been able to demonstrate with field data that the bioremediation system is effective at preventing

the discharge of contaminated groundwater from its Pittsburg facility. Without implementation of the hydraulic containment system, the objectives of the Board's order can not be met until some future point in time when the bioremediation system is optimized and its effectiveness is established. In the meantime, the Board's order should remain in place until the necessary criteria be developed and shown to demonstrate the effectiveness of bioremediation at the site. Board staff is in the process of reviewing the remedy actually implemented at the site in order to develop the appropriate verification criteria to determine the efficacy of bioremediation. Based on that review, Board Staff may consider a final recommendation for Board consideration.

Outfall Pond Closure: The Former Outfall Pond Area consists of 7.12 acres of jurisdictional wetland verified by Army Corps of Engineers staff and 9.2 acres of terrestrial open space located in the northwest corner of the Dow facility just south of the levee separating the facility from New York Slough. A 2.73-acre pond occupies a portion of the wetland adjacent to the former chlor-alkali plant. In the past, the pond received storm water runoff, cooling water runoff, inorganic waste streams, wastewater from purification processes, and organic chemical runoff from incidental storm water contact with buildings and equipment. Currently, the pond contains only rainwater from direct precipitation and run-off from the open space immediately adjacent to it. Until 1969, the sediment that accumulated on the pond floor was routinely dredged and deposited in the marshy area adjacent to and east of the pond.

Elevated levels of mercury are present in pond sediments ranging in concentration from about 6 to 80 mg/kg. The average mercury concentration in 21 surface soil samples taken in the open space east of the pond is 37.5 mg/kg, with a maximum of 171 mg/kg. The California hazardous waste threshold concentration is 20 mg/kg. In addition, recent data shows that shallow groundwater beneath the site, both near the former chlor-alkali plant and along the slough-front, contains mercury at concentrations that threaten to impair beneficial uses of the Bay if it is allowed to discharge.

Order 98-059 required closure of the pond by December 31, 1999, to contain hazardous levels of mercury, prevent exposure to wildlife and prevent releases of mercury to New York Slough and the Bay. The Order required submittal of an acceptable closure plan by February 28, 1999. On February 28, 1999, Dow submitted a closure plan that proposed a barrier and soil cover that would keep the pond as a wetland. On April 27, 1999, board staff notified Dow in writing that the selected alternative was unacceptable and directed that a RCRA cap be used to close the pond. An acceptable closure plan, which included the RCRA cap, was finally submitted for review and approval on November 4, 1999, just two months prior to the deadline for completion of the closure construction. The closure plan was approved on December 22, 1999. On October 28, 1999, Dow submitted an application for a Section 404 permit to the Army Corp of Engineers in anticipation of approval of the closure plan. It took seven and one half months to get approval from the Army Corps of Engineers. Dow's delay in submitting an acceptable closure plan, however is the primary cause of the violation of the closure compliance deadline in the Order.

- Violation Description:

Violation No. 1:

Provision C.10, Certification of Installation and Implementation of Final Corrective Action Groundwater Extraction and Treatment System
A report, acceptable to the Executive Officer was due on March 31, 2000. An unacceptable report documenting implementation of the bioremediation alternative was received. As of July 1, 2000, 91 days late, no report has been submitted to verify implementation of the approved remedy. Section 13268 of the California Water Code establishes a maximum liability of $1,000 per day. The maximum liability for this violation, as of July 1, 2000, is $91,000.

Violation No. 2:

Provision C.5, Former Outfall Pond Area Final Closure Documentation of Completion Report
The report was due December 31, 1999. An acceptable report has not been submitted as of July 1, 2000, 182 days late. Section 13268 of the California Water Code establishes a maximum liability of $1,000 per day. The maximum liability for this violation, as of July 1, 2000, is $182,000.

a. Extent and Gravity of The Violations:

Violation No. 1 has allowed the contaminants in the groundwater at the Dow site and their migration to adjacent surface waters to go unaddressed as required in Order 98-059.

Violation No. 2 has resulted in the potential ongoing exposure of ecological receptors to mercury-contaminated sediment in the pond/wetland area and soil in the adjacent upland area. Dow is currently investigating the impacts and extent of mercury contamination in groundwater at the direction of Board staff.

b. Susceptibility to Cleanup or Abatement:

Board staff believes that conventional groundwater extraction and treatment technologies are capable of containing plumes on Dow's site. Dow does not. As discussed above, Dow has implemented a promising, but unproven alternative bioremediation remedy.

Various technologies for capping and containing groundwater that are currently available can adequately eliminate exposure to mercury in surface soil and sediment and, if necessary, prevent mercury-contaminated groundwater discharge from the Former Outfall Pond Area.

c. Degree of Toxicity of the Discharge:

VOCs: Contaminated groundwater from Dow's facility discharges to New York Slough, a Basin Plan designated drinking water source. The California Department of Health Services and the USEPA have developed Maximum Contaminant Levels (MCLs) that are acceptable in drinking water. The following table lists the concentration ranges of selected VOC compounds in monitoring and extraction wells near the shoreline area exceeding MCLs:

Ranges of Concentrations of Selected Constituents in Groundwater Near New York Slough

Constituent	Range of Concentrations (µg/l)	Maximum Contaminant Level[1] (State Drinking water Standard) (µg/l)
1,2-Dichloropropane	30 to 24,000	5.0
Carbon Tetrachloride	32 to 140,000	0.5
Chlorobenzene	99 to 600	70
Chloroform	100 to 51,000	100
cis-1,2-Dichloroethene	60 to 40,000	6.0
Methylene Chloride	37 to 180,000	5.0
Tetrachloroethene	190 to 41,000	5.0
Trichloroethene	11 to 43,000	5.0
Vinyl Chloride	140 to 20,000	0.5

[1] Maximum Contaminant Levels (MCLs) taken from California Code of Regulations (CCR) Title 22, MCLs for Organic Compounds.

Mercury: The Board has listed all segments of San Francisco Bay as impaired due to mercury pollution. The state has issued an interim fish consumption advisory based on recent studies of mercury levels in Bay fish. Mercury concentrations in fish are related to mercury concentrations in water and sediment in the Bay. Shallow groundwater less than 50 feet from the shoreline in the Former Outfall Pond Area of the Dow facility exceeds the Basin Plan objective for total recoverable mercury in several sample locations by factors ranging from greater than 10 to greater than 100 times. Methylmercury, the most toxic and bioavailable form of mercury, is also present in groundwater at some of the same sample locations in excess of the proposed draft TMDL Phase I target level for methylmercury in surface water. The average mercury concentration in surface soil and sediment samples collected from the Former Outfall Pond Area exceeds the California hazardous waste threshold for mercury.

d. Economic Savings Resulting from the Violations:

For **Violation No. 1,** hydraulic containment system: The hydraulic control system as required by the order would have been a major investment. Dow benefited economically by not constructing and operating the groundwater treatment system it proposed. The implemented bioremediation system is also a major investment. It is unclear from the record what the long-term cost comparison between the hydraulic containment system and the bioremediation alternative may be.

For **Violation No. 2,** pond closure certification: Dow benefited economically due to the delay in construction of the approved pond cap. Dow did incur additional costs related to additional design work.

e. Ability To Pay and Effect On Ability To Stay In Business:

The Dow Chemical Company can afford to pay the maximum penalty.

f. Prior History of Violations:

In October 1994, the Board adopted Cease and Desist Order No. 94-148 to enforce NPDES discharge limits for copper and nickel in treated groundwater discharged to New York Slough. Dow has not discharged treated groundwater to the slough since adoption of the CDO.

g. Degree of Culpability:

Violation No. 1: Dow was repeatedly reminded of the March 31, 2000, compliance deadline and warned of the risk it was taking by substituting an unapproved corrective action technology for hydraulic containment. A letter signed by the Executive officer dated March 2, 1999, was sent to Dow reiterating the Board's position that full-scale implementation of the groundwater extraction and treatment system must be certified by the compliance date in Order No. 98-059. Dow responded by stating that the remedy described in the 1997 CAP would not work, undertaking a study of alternatives submitted in the 1999 SRCAP which describes bioremediation as the preferred alternative, and then implementing the remedy on March 17, 2000.

Violation No. 2: Dow did not submit an acceptable closure plan by the February 28, 1999 deadline in the Order. Staff responded by sending a letter dated April 27, 1999, stating the deficiencies of the plan and advising Dow to revise the closure plan in a timely manner to be in compliance with the Order. Dow submitted a draft closure plan in August and a finalized and acceptable closure plan on November 4, 1999, about two months prior to the December 31, 1999 final closure requirement. Dow concurrently submitted to the Army Corp of Engineers an application for a Section 404 permit needed to perform the closure work. This permit was not granted until June 8, 2000, nearly seven and one-half months after application. This additional delay might have been avoided, however, if Dow had more promptly provided an acceptable closure plan in response to staff's comments in April of 1999.

h. Voluntary Cleanup Efforts:

None that address the requirements of the Order.

i. Other Matters as Justice May Require:

Staff time to prepare the Complaint and Staff Report totaled 60 hours, at an average cost to the State of $100 per hour. The total staff cost to date is $6,000.

6. Issuance of this Complaint is exempt from the provisions of the California Environmental Quality Act (CEQA) in accordance with Section 15321(a)(2), Title 14 of the California Code of Regulations.

PROPOSED CIVIL LIABILITY

7. The maximum civil liability that potentially could be imposed by the Regional Board in this matter, under Section 13268, is a maximum of $1000 per day for each day each report is late.

8. In light of the factors examined in Findings 5(a) through 5(i) above, staff recommends a penalty of $1,000 per day of violation.

9. The Executive Officer of the Regional Board proposes that administrative civil liability be imposed by the Regional Board under Section 13268 of the Water Code in the amount of $182,000. Staff costs of $6,000 are included in this amount.

The calculations for the recommended penalty for Violations 1 and 2 are as follows:

- **Violation 1**: The compliance date for submittal of the report documenting implementation of the hydraulic containment system was March 31, 2000. As of July 1, 2000, 91 days after the submittal requirement, Dow has not completed construction of the hydraulic containment system as specified in Provision C.10. The proposed penalty is 91 days x $1,000 per day = $91,000.

- **Violation 2**: Provision C.5 of Order No. 98-059 requires Dow to submit a technical report documenting completion of closure of the FOP Area in accordance with an approved closure plan. The compliance deadline was December 31,1999. As of July 1, 2000, 182 days after the submittal requirement, Dow has not completed closure of the FOP Area. The proposed penalty is 90 days x $1,000 per day = $91,000. The maximum penalty is reduced by 90 days to account for Dow's diligent change in direction on closure design and additional time needed to evaluate closure with respect to mercury contamination.

- Total proposed penalty for violations 1 and 2 is $182,000.

10. Board staff recommends that up to $145,600, or 80% of the total administrative civil liability be suspended if Dow proposes an acceptable supplemental environmental project (SEP) equivalent in value to at least the suspended amount. If Dow wishes to propose a SEP, it must submit a proposal for such an SEP to the Regional Board within 30 days of signing a waiver. If the proposed SEP is not acceptable, Dow has 30 days from receipt of

notice of rejection of that submittal to either submit a new or revised proposal or make payment for the full amount of $182,000 to the State Cleanup and Abatement Account. The SEP must be completed by October 18, 2001. Any money not used by that date must be submitted to the Regional Board and made payable to the State Cleanup and Abatement Account or directed toward an alternative environmental project acceptable to the Executive Officer. Regular reports on the SEP shall be provided to the Board according to a schedule to be determined. The final report on the SEP shall be submitted to the Board within 60 days of project completion.

10/5/2000
DATE

LAWRENCE P. KOLB
ACTING EXECUTIVE OFFICER

WAIVER OF HEARING

You may waive the right to a hearing. If you wish to waive the hearing, an authorized person must check and sign the waiver and return it to the Executive Officer, Attention: Mr. Curtis Scott, Regional Water Quality Control Board, San Francisco Bay Region, at 1515 Clay Street, Suite 1400, Oakland, CA 94612. If you do not waive the hearing, the payment of the civil liability is due within 30 days after the Board adopts an order assessing civil liability.

If you should have any questions, please contact the Acting Executive Officer, Lawrence P. Kolb, at (510) 622-2372 or the Regional Board Counsel, Ms. Sheryl Freeman at (916) 657-2406.

WAIVER

☐ **Waiver of a right to a hearing, and agreement to make payment in full.**

By checking this box, I agree to waive my right to a hearing before the Regional Board with regard to the violations alleged in Complaint No. 00-073. I understand that I am giving up my right to be heard, and to argue against the allegations made by the Executive Officer in this Complaint, and against the imposition of or the allegations made by the Executive Officer in this Complaint, and against the imposition of or the amount of, civil liability proposed. I further agree to remit payment for the civil liability imposed within 30 days after the waiver is signed.

☒ **Waiver of a right to a hearing, with payment in part by an SEP:**

By checking this box, I agree to waive my right to a hearing before the Regional Board with regard to the violations alleged in Complaint No. 00-073, and to remit payment for up to 80% of the civil liability imposed to include a proposal for supplemental environmental projects as mitigation for the amount of liability suspended. I understand that I am giving up my right to be heard, and to argue against the allegations made by the Executive Officer in this Complaint, and against the imposition of or the allegations made by the Executive Officer in this Complaint, and against the imposition of or the amount of, civil liability proposed. I further agree to remit payment for the civil liability imposed within 30 days after the waiver is signed.

RANDALL A. FISCHBACK — Name (print)

Randall A Fischback — Signature

Regulatory Affairs Manager — Title/Organization

October 10, 2000 — Date

APPENDIX B

October 10, 2000

Mr. Larry Kolb, Acting Executive Officer
California Regional Water Quality
Control Board
1515 Clay Street, Suite 1400
Oakland, California 94612

Re: Notice of Waiver of Hearing on ACL Complaint No. 00-073

Dear Mr. Kolb:

By this letter The Dow Chemical Company (Dow) notifies the Regional Water Quality Control Board San Francisco Bay Region of its decision to waive hearing in the above referenced matter. Accordingly, I have executed the enclosed waiver provision set forth at the end of the ACL Complaint with the understanding that the Board will adopt the recommended remedy set forth in paragraphs 9 and 10 of the ACL Complaint. In connection with this waiver, Dow respectfully requests that this letter be brought to the attention of Board members and be made a part of the official record in this matter.

This letter contains three essential points.

First, Dow takes very seriously its obligation to fully comply with all board orders. Dow apologizes for any failure to fully comply with Board Order 98-059. Dow intends to redouble its efforts to ensure that it does not find itself before the Board under similar circumstances again.

Second, this letter is offered to explain to the Board Dow's perspective on the events leading up to the ACL Complaint. It is not offered in anyway to excuse Dow from the recommended remedy set forth in ACL Complaint.

Finally, with regard to Violation Nos. 1 and 2, Dow offers the comments set forth below on the events leading up to the issuance of the ACL Complaint with the understanding that, if a hearing were held, Dow would present the facts through competent witnesses to the full Board.

Summary of Dow's Comments:

With regard to Violation No. 1, Dow acknowledges that it did not submit a report acceptable to the Executive Officer on March 31, 2000. Nevertheless, under the circumstances described below, Dow believes that it acted in the only manner possible, consistent with its obligations under Order 98-059, when it implemented the enhanced in situ bioremediation remedy at its Pittsburg site. Dow also believes that the enhanced in situ bioremediation remedy implemented at its Pittsburg site presents an extraordinary opportunity to demonstrate the effectiveness of an innovative remediation technology which could be used in the future at other sites within the

region as one of the most effective and environmentally sound groundwater cleanup remedies available.

With regard to Violation No. 2, immediately upon receiving its Section 404 wetlands fill permit from the U. S. Army Corps of Engineers on June 8, 2000, Dow commenced capping and closure of the Former Outfall Pond which will be completed by December 3, 2000. Dow believes that the delay in the pond closure was unavoidable because of the time needed to reach agreement between Dow and staff on an acceptable closure plan and then obtain the necessary permit from the U. S. Army Corps of Engineers. The Corps took seven and one-half months to review Dow's application and issue the permit.

Dow's Comments on Violation No. 1:

The objective of Order 98-059 with regard to contaminants in the groundwater under Dow's Pittsburg site is set forth in Prohibition 3.b., which provides that "further significant migration of pollutants through subsurface transport to waters of the state is prohibited." Provision 10 of Order 98-059 required Dow to "submit [prior to March 31, 2000] a report, acceptable to the Executive Officer, which documents completion of construction and commencement of full-scale operation of the groundwater extraction and treatment system as proposed in Section 2 of Corrective Action Plan for the Pittsburg Facility of the Dow Chemical Company dated September 19, 1997 [1997 Cap]." Section 2 of the 1997 CAP proposed a pump and treat remedy to achieve containment of contaminants in the groundwater at the site.

To ensure that the groundwater objective of Order 98-059 would be met, the Board required Dow to make all necessary adjustments in its remedy as field information was developed. Finding 12(a) required Dow to study the remedy during the startup period to "evaluate whether adjustments need to be made to achieve containment." Finding 13 provided that the remedy "may be revised based on the degree to which groundwater monitoring demonstrates adequate containment and reduction of chemical groundwater contamination during implementation of Corrective Action." Finally, in recognition of the fact that significant time and remedy adjustment would be needed after the March 31, 2000 start-up deadline to achieve the groundwater objectives of Order 98-059, Provision 11 required Dow to submit quarterly reports which describe the "corrective actions taken to improve performance" and "plans for upgrades or changes in the next reporting period."

During the final design stages of the hydraulic containment remedy in 1998 and 1999, Dow's consultants discovered that the originally proposed pump and treat remedy would not achieve hydraulic containment of the contaminants in the groundwater under Dow's Pittsburg site. Specifically, it was determined from additional field testing and revised modeling that the hydraulic conductivity of the groundwater was in fact much higher than earlier believed. Dow notified Board staff of this discovery. As a result, and consistent with Dow's obligations under Order 98-059, Dow undertook to further investigate, with the full knowledge of Board staff, alternatives to the 1997 CAP. Over the next 12 months, Dow's consultants investigated and regularly reported to staff on all possible alternatives. Dow's investigation culminated in July 1999 with Dow's submission of a Supplemental and Revised Corrective Action Plan (1999 SRCAP) which proposed enhanced in situ bioremediation as the most feasible and effective

remedy alternative to meet the groundwater contaminant containment objectives of Order 98-059. If successful, enhanced in situ bioremediation would not only contain the contaminants in the groundwater but would destroy them in situ before they could migrate off the property.

Because of the innovative nature of the bioremediation remedy proposal, Board staff requested, and Dow funded, an independent third party blue ribbon panel of distinguished experts to assess the potential for the use of bioremediation at Dow's Pittsburg site. The panel was made up of Catherine Vogel, P.E. (SERDP/ESTCP Cleanup Program Manager – Arlington VA.), James Tiedje, Ph.D. (Center for Microbial Ecology, Michigan State Universtiy), Lewis Semprini, Ph.D. (Department of Civil, Construction, and Environmental Engineering, Oregon State University), and Mark Dolan, Ph.D. (Department of Civil, Construction, and Environmental Engineering, Oregon State University), all well known experts in the field of the bioremediation of chemical compounds in groundwater. The blue ribbon panel report was submitted to Board staff and Dow on March 6, 2000. It confirmed that the proposed "in situ bioremediation approach has merit and is attractive considering the technical difficulties and the cost associated with the alternative approaches." The report also raised a number of questions which could only be answered through further investigation and field testing during the start-up period.

After submission of the blue ribbon panel report, there was simply not enough time to address the questions it raised and obtain Board staff approval of the enhanced in situ bioremediation remedy prior to the March 31, 2000 remedy start-up deadline. Thus, Dow determined that its only responsible course of action, consistent with its obligations under Order 98-059, was to complete construction of the enhanced in situ bioremediation remedy, and submit its report to the Executive Officer on March 31, 2000, certifying the actions it had taken to comply with the order. Dow did just that.

In short, in March 2000, Dow found itself in a position where it could not, consistent with all its obligations under Order 98-059, implement a pump and treat remedy that it was convinced would not work. Dow, nevertheless, acknowledges that it did not obtain staff approval of the final remedy prior to its implementation and thus did not submit on March 31, 2000, a report acceptable to the Executive Officer, although it submitted a full report describing its implementation of the bioremediation remedy. Since, receiving notice of a violation last April, Dow has been working closely with Board staff to develop the appropriate criteria for demonstrating the effectiveness of enhanced in situ bioremediation at Dow's Pittsburg site.

Dow's Comments on Violation No. 2

Provision C.5 of Order 98-059 required Dow to "submit a technical report documenting closure of the Former Outfall Pond Area [which covers over 15 acres] according to an approved closure plan" by December 31, 1999. Dow acknowledges that it failed to submit the required report. Dow also respectfully submits that it did not ignore its obligations with regard to closure of the Former Outfall Pond.

At the time Order 98-059 was approved in June 1998, the final design for closure of the Former Outfall Pond was not yet known. Thus, it was also not known if the final closure plan would require a Section 404 wetland fill permit from the U. S. Army Corps of Engineers. In fact, Provision C.4 of Order 98-059 required Dow to evaluate all reasonable closure alternatives and propose the most appropriate one for approval by the Executive Officer by February 28, 1999.

As required, on February 28,1999, Dow submitted its final closure plan for approval by the Executive Officer. Dow's final closure plan recommended a synthetic barrier and soil cover which would keep the pond as a wetland. On April 27, 1999, Board staff notified Dow in writing that the selected alternative was unacceptable and directed that a RCRA cap be used to close the pond. This decision triggered the requirement that a Section 404 permit be obtained from the U. S. Army Corp of Engineers before any construction activity could commence. On August 4, 1999, Dow proposed a RCRA cap over the most impacted area of the pond. In response Board staff requested a RCRA cap over the entire pond area. A final RCRA cap plan was approved by Board staff in early December 1999. On October 28, 1999, in anticipation of that approval, Dow submitted its application for a Section 404 permit to the U.S. Army Corp of Engineers. Thereafter, the Army Corps of Engineers took seven and one half months, despite the diligent efforts of Dow and Board staff, to approve Dow's permit application. The Section 404 permit was issued on June 8, 2000. Construction of the cap and final closure of the Former Outfall Pond commenced immediately thereafter on June 10, 2000, and will be completed by December 3, 2000.

Despite Dow's efforts, delays in working out a final RCRA cap for the pond with Board staff and the time taken to obtain the necessary fill permits from the U. S. Army Corps of Engineers caused the delay in implementation of the final closure plan for the Former Outfall Pond. As of April 27, 1999, and Board staff's rejection of Dow's original closure plan, it was effectively impossible to close the pond by December 31, 1999, because there was simply insufficient time to obtain a Section 404 permit and complete construction before the fall rains began.

Conclusion:

Dow believes that it is important to its continuing relationship with the Board and Board staff to resolve the ACL Complaint in the manner proposed by the Executive Officer to the Board. Dow also commits to the Board and its staff that it will do everything in its power to avoid the violation of Board orders in the future.

Very truly yours,

Randy Fischback

Randy Fischback
Regulatory Affairs Manager
Pittsburg, California Plant
The Dow Chemical Company