PORT OF OAKLAND

February 17, 1999

Mr. Stephen Wilson, Manager
Environmental Affairs
Crowley Marine Services, Inc.
PO Box 2287
Seattle, Washington 98111-2287

Mr. Barney Chan
Alameda County Health Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, CA 94502

Subject: Pacific Dry Dock and Repair Company, Yards I (1441 Embarcadero) and II (321 Embarcadero) in Oakland

Dear Mr. Wilson and Mr. Chan:

Rick Calculations for Pacific Dry Dock and Repair Company, Yards I and II prepared by Risk-Based Decisions, Inc., dated January 26, 1999

The Port appreciates Crowley's efforts to refine the risk assessments for Yards I and II as documented in the above-referenced report. To complete the Port's evaluation of the revised risk calculation, we request the following information:

- Maps showing the spatial distribution of all the analytical data (old and new);
- Color or "cleaner" copies of the tables in the January 1999 report and the significance of any shaded data (i.e., was the data not evaluated in the risk assessment?); and
- An electronic copy of the data spreadsheets (preferably in Excel format)

Yard I named a Candidate Toxic Hot Spot in Regional Toxic Hot Spot Cleanup Plan

The S.F. Bay Regional Water Quality Control Board (RWQCB) recently prepared its Draft Final Regional Toxic Hot Spot Cleanup Plan (Plan) for the Bay Protection and Toxic Cleanup Program (dated December 1998). The Plan lists Pacific Dry Dock Yard I (area in front of storm drain) as a (moderate priority) Candidate Toxic Hot Spot due to risk to

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aquatic life from copper, lead, mercury, zinc, tributlytin, ppDDE, PCBs, polynuclear aromatic hydrocarbons (PAHs), chlorpyrifos, chlordane, dieldrin, and mirex. Enclosed find excerpts from the Plan including Candidate Toxic Hot Spots, reference list, criteria for ranking toxic hot spots, and Sites of Concern; and the Staff Summary Report for this item at the January 27, 1999 RWQCB meeting. Note that tributyltin, a compound used as an antifouling ingredient in marine paints, was found at Pacific Dry Dock Yard I and several Sites of Concern including Hunters Point Shipyard, Alameda Naval Air Station, and the Mare Island Naval Shipyard; however, tributlytin was not found at the Fruitvale site (in front of the storm drain) or any other Candidate Toxic Hot Spots.

The Ranking Matrix table included in the Plan states that the Remediation Potential at the < 1 acre area of concern at Yard I ranks high meaning that the site is unlikely to improve without intervention (see Natural Remediation Potential section of criteria for ranking toxic hot spots). The Staff Summary Report states that individual cleanup plans have been developed for all toxic hot spots ranked high. Cleanup plans require further investigations to define the aerial extent of contamination and feasibility studies evaluating potential cleanup options.

Therefore, additional work is likely at Yard I to address aquatic life. The Port requests that the County and RWQCB take the above information into account in evaluating whether to grant Crowley's request for site closure.

If you have any questions, please contact me at 510-272-1467.

Sincerely,

Diane Heinze

Diane Heinze, P.E.
Associate Environmental Scientist

encl: Excerpts from S.F. Bay RWQCB's Draft Final Regional Toxic Hot Spot Cleanup Plan and January 27, 1999 Staff Summary Report

cc: Karen Taberski, RWQCB
Derek Lee, RWQCB
Steve Moore, RWQCB
Madhulla Logan, Alameda County
Michele Heffes
Neil Werner
Joyce Washington

Bay Protection and Toxic Cleanup Program

DRAFT FINAL

REGIONAL TOXIC HOT SPOT CLEANUP PLAN

DECEMBER 1998

SAN FRANCISCO BAY REGION

REGIONAL WATER QUALITY CONTROL BOARD
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

Part II

Candidate Toxic Hot Spots (except for San Francisco Bay, sites are listed from north to south)

Waterbody Name	Segment Name	Site Identification	Reason for Listing	Pollutants present at the site	Report reference
S.F. Bay	S.F. Bay	S.F. Bay	Human Health	Hg, PCBs, dieldrin, chlordane, DDT, dioxin,	12, 24, 26, 27, 28, 30, 31, 32, 35, 54
Suisun Bay	Suisun Bay	Peyton Slough	Aquatic Life	Ag, Cd, Cu, Se, Zn, PCBs, chlordane, ppDDE, pyrene	3, 12, 35, 39, 40, 41, 42, 43, 44
S.F. Bay	San Pablo Bay	Castro Cove	Aquatic Life	Hg, Se, PAHs, dieldrin	7, 8, 9, 11, 12, 27, 33, 34, 35, 55
S.F. Bay	Central Bay	Stege Marsh	Aquatic Life	As, Cu, Hg, Se, Zn, chlordane, dieldrin, ppDDE, dacthal, endosulfan I, endosulfan sulfate, dichlorobenzophenone, heptachlor epoxide, hexachlorobenzene, mirex, oxadiazon, toxaphene, PCBs	19, 29, 35, 37, 45, 46, 47, 48, 49, 50, 51, 52
S.F. Bay	Central Bay	Point Potrero/ Richmond Harbor	Human Health	Hg, PCBs, Cu, Pb, Zn	2, 4, 14, 15, 16, 17, 18, 24, 35, 36
S.F. Bay	Oakland Estuary	Pacific Dry Dock #1 (area in front of stormdrain)	Aquatic Life	Cu, Pb, Hg, Zn, TBT, ppDDE, PCBs, PAHs, chlorpyrifos, chlordane, dieldrin, mirex	25, 35, 38
S.F. Bay	South Bay	Mission Creek	Aquatic Life	Ag, Cr, Cu, Hg, Pb, Zn, chlordane, chlorpyrifos, dieldrin, mirex, PCBs, PAHs, anthropogenically enriched H_2S & NH_3	20, 35, 56

Waterbody Name	Segment Name	Site Identification	Reason for Listing	Pollutants present at the site	Report reference
S.F. Bay	Oakland Estuary	Fruitvale (area in front of stormdrain)	Aquatic Life	chlordane, PCBs	35
S.F. Bay	South Bay	Central Basin, S.F.	Aquatic Life	Hg, PAHs	35
S.F. Bay	South Bay	Islais Creek	Aquatic Life	PCBs, chlordane, dieldrin, endosulfan sulfate, PAHs, anthropogenically enriched H_2S & NH_3	1, 5, 6, 20, 21, 22, 23, 35, 53, 55
S.F. Bay	South Bay	San Leandro Bay	Aquatic Life	Hg, Pb, Se, Zn, PCBs, PAHs, DDT, chlordane, dieldrin, ppDDE, hexachlorobenzene, heptachlor, chlorpyrifos	10, 13, 35

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IV. STATEWIDE CRITERIA FOR RANKING TOXIC HOT SPOTS

A value for each criterion described below shall be developed provided appropriate information exists or estimates can be made. Any criterion for which no information exists shall be assigned a value of "No Action". The RWQCB shall create a matrix of the scores of the ranking criteria. The RWQCBs shall determine which sites are "high" priority based on the five general criteria (below) keeping in mind the value of the waterbody. The RWQCBs shall provide the justification or reason a rank was assigned if the value is an estimate based on best professional judgment.

Human Health Impacts

Human Health Advisory issued for consumption of non-migratory aquatic life from the site (assign a "High"); Tissue residues in aquatic organisms exceed FDA/DHS action level and U.S. EPA screening levels ("Moderate").

Aquatic Life Impacts

For aquatic life, site ranking shall be based on an analysis of the substantial information available. The measures that shall be considered are: sediment chemistry, sediment toxicity, biological field assessments (including benthic community analysis), water toxicity, toxicity identification evaluations (TIEs), an bioaccumulation.

Stations with hits in any two of the biological measures if associated with high chemistry, are assigned a "High" priority. A hit in one of the measures associated with high chemistry is assigned "moderate", and high sediment or water chemistry only shall be assigned "low". In analyzing the substantial information available, RWQCBs should take into consideration that impacts related to biological field assessments (including benthic community structure) are of more importance tha other measures of impact.

Water Quality Objectives[1]:

Any chemistry data used for ranking under this section shall be no more than 10 years old, and shall have been analyzed with appropriate analytical methods and quality assurance.

Water quality objective or water quality criterion: Exceeded regularly (assign a "High" priority), occasionally exceeded ("Moderate"), infrequently exceeded ("Low").

Areal Extent of Toxic Hot Spot

Select one of the following values: More than 10 acres, 1 to 10 acres, less than 1 acre.

Natural Remediation Potential

Select one of the following values: Site is unlikely to improve without intervention ("High"), site may or may not improve without intervention ("Moderate"), site is likely to improve without intervention ("Low").

Overall Ranking

The RWQCB shall list the overall ranking for the candidate toxic hot spot. Based on the interpretation and analysis of the previous ranking criteria, ranks shall be established by the RWQCBs as "high", "moderate" or "low".

V. FUTURE NEEDS

This document is primarily oriented to the cleanup of specific sites that have contaminated sediments. However, the goals of the Bay Protection and Toxic Cleanup Program are not only to clean up toxic hot spots but also to prevent them from occurring. U.S. EPA and the State Board are strongly encouraging the development of watershed management plans to protect

1. Water quality objectives to be used are found in Regional Water Quality Control Board Basin Plans or the California Ocean Plan (depending on which plan applies to the water body being addressed). Where a Basin Plan contains a more stringent value than the statewide plan, the regional water quality objective will be used.

Ranking Matrix (except for San Francisco Bay sites within an overall rank are listed from north to south)

Waterbody Name	Site Identification	Human Health Impacts [1]	Aquatic Life Impacts	Water Quality Objectives	Areal Extent	Remediation Potential	Overall Rank
S.F. Bay	S.F. Bay	High	NA	NA	> 10 acres	Moderate	High
Suisun Bay	Peyton Slough	High	High	NA	1-10 acres	High	High
S.F. Bay	Castro Cove	High	High	NA	> 10 acres	High	High
S.F. Bay	Stege Marsh	High	High	NA	> 10 acres	High	High
S.F. Bay	Point Potrero/ Richmond Harbor	High	Low	NA	1-10 acres	High	High [2]
S.F. Bay	Mission Creek	High	High	NA	1-10 acres	High	High
S.F. Bay	Islais Creek	High	High	NA	1-10 acres	Moderate	High
S.F. Bay	Pacific Drydock	High	Moderate	NA	<1 acre	High	Moderate
S.F. Bay	Fruitvale	High	Moderate	NA	<1 acre	High	Moderate
S.F. Bay	San Leandro Bay	High	Moderate	NA	unknown [3]	Moderate	Moderate
S.F. Bay	Central Basin	High	Moderate	NA	<1 acre	High	Moderate

1. All sites within San Francisco Bay were ranked high in this category because the health advisory applies to the entire Bay and elevated levels of mercury and PCBs are found throughout the Bay.
2. This site was ranked high because it is in the area where the health advisory applies, the health advisory is based on PCBs and mercury and this site had the highest PCB and mercury concentrations in over 600 samples collected statewide in the BPTCP. In addition, this site ranked high in other ranking criteria.
3. A study is currently being conducted through the San Francisco Estuary Institute to define the areal extent of contamination at this site.

Sites of Concern (These sites do not qualify as Candidate Toxic Hot Spots)

Waterbody Name	Segment Name	Site Identification	Pollutants Present	Status/Comments	Report reference
San Francisco Bay	South Bay	Hunters Point Shipyard /Yosemite Creek & South Basin	PCBs, PAHs, DDT, chlordane, dieldrin, endrin, TBT, metals	Offshore Feasibility Study submitted in April 1998; studies in Yosemite Creek ongoing	6, 8, 15, 16, 23, 28, 30
San Francisco Bay	South Bay	Alameda Naval Air Station	Cr, Hg, PAHs, DDT, PCBs, TBT	Field work and analysis ongoing	11, 16, 19, 22, 35
San Francisco Bay	Central Bay	Treasure Island Naval Station	fuels, Ag, As, Cu, Hg, Pb, Zn	Offshore Remedial Investigation report submitted in June 1998	1, 3, 10, 16, 17, 18, 30, 36
Napa River	Mare Island Straits	Mare Island Naval Shipyard	As, Ag, Cr, Cu, Hg, Zn, TBT, PAHs, PCBs, dieldrin, endrin toxaphene	Risk characterization in progress	12, 16, 30, 37
Suisun Bay	Suisun Bay	Concord Naval Weapons Station	As, Cd, Cu, Pb, Zn	Most contaminated area cleaned up, rest undergoing investigation	14, 16, 21, 24, 25, 38, 39, 40
San Francisco Bay	South Bay	Moffett Naval Air Station	Hg, Pb, Zn, PCBs, DDT, chlordane, PAHs	Finalizing Feasibility Study for cleanup at Eastern Diked Marsh and channels. Developing ecological monitoring program.	9, 13, 16, 20, 26, 27

Sites of Concern (These sites do not qualify as Candidate Toxic Hot Spots)

Waterbody Name	Segment Name	Site Identification	Pollutants present	Status/Comments	Report reference
San Francisco Bay	San Pablo Bay	Hamilton Army Airfield	Cr, Hg, Pb, PAHs, PCBs, DDT, petroleum	Currently validating ecological risk assessment	7, 16, 33, 34, 41
San Francisco Bay	South Bay	Shearwater/ U.S. Steel	Pb, PCBs	Regional Board approved remediation plan , Bay Area Conservation and Development Commission (BCDC) denied approval	16, 29, 30, 31, 32
San Francisco Bay	South Bay	Warmwater Cove	PAHs	No toxicity in screening despite high levels of PAHs	4, 16, 30
San Francisco Bay	Central Bay	Gashouse Cove	PAHs	Finished report on study to characterize aerial extent of contamination	2, 16, 30
San Francisco Bay	Richardson Bay	Waldo Point	PCBs, PAHs	EIR released	5, 16, 30

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

STAFF SUMMARY REPORT
MEETING DATE: January 27, 1999

ITEM: 4.B

SUBJECT: BAY PROTECTION AND TOXIC CLEANUP PROGRAM, DRAFT FINAL REGIONAL TOXIC HOT SPOT CLEANUP PLAN

CHRONOLOGY: Last status report - February 18, 1998

DISCUSSION: In 1989 the California State legislature established the Bay Protection and Toxic Cleanup Program (BPTCP). The BPTCP has four major goals: (1) provide protection of present and future beneficial uses of the bays and estuarine waters of California; (2) identify and characterize toxic hot spots; (3) plan for toxic hot spot cleanup or other actions that will remediate or mitigate toxic hot spots and; (4) develop prevention and control strategies for toxic pollutants that will prevent creation of new toxic hot spots or the perpetuation of existing ones. This legislation specifies the content and deadlines for Regional and Statewide Toxic Hot Spot Cleanup Plans.

Four major investigations have been conducted by the BPTCP; 1) the Pilot Regional Monitoring Program, 2) a study on contaminant levels in fish in San Francisco Bay (Appendix A) which resulted in a human health advisory for consuming fish (Appendix B), 3) a reference site study, and 4) an investigation to screen 127 stations and confirm toxic hot spots. Information from all of these studies, as well as the health advisory, was used to identify and rank toxic hot spots.

A Proposed Regional Toxic Hot Spot Cleanup Plan was submitted to the State Board on December 22, 1997 and was presented to the Regional Board on February 18, 1998 as an information item. However, at that time all of the data had not been finalized and guidelines had not been approved by the State Board for identification and ranking of toxic hot spots. In August 1998 a report was issued, *Sediment Quality and Biological Effects in San Francisco Bay*, that reported and analyzed the data from the investigation to screen and confirm toxic hot spots (Appendix C). On September 2nd, 1998 the State Board approved a *Water Quality*

Control Policy on Development of Regional Toxic Hot Spot Cleanup Plans (Appendix D). This policy includes definitions for toxic hot spots and procedures for ranking them. The Office of Administrative Law (OAL) approved this policy on November 9, 1998.

A draft final Regional Toxic Hot Spot Cleanup Plan has been prepared by staff (Appendix E). This report is based on the State Board guidance document, the data collected in the BPTCP investigations and the human health advisory issued by the Office of Environmental Health Hazard Assessment on consuming fish in San Francisco Bay. This document has been distributed for peer review and public comments. Peer review and public comments are included in Appendix F. Response to comments are in Appendix G.

The peer review comments were generally supportive of the draft final Regional Toxic Hot Spot Cleanup (Appendix E). Public comments tend to focus on technical and policy issues at specific locations. In response to these comments, some changes to the plan are proposed. However, these changes could be typified as clarification or correction, and do not result in substantive changes to the plan, as presented.

Regional Board staff identified 11 toxic hot spots in the San Francisco Bay Region. These are 1) the entire San Francisco Bay (due to the human health advisory), 2) Peyton Slough, 3) Castro Cove, 4) Stege Marsh, 5) Point Potrero, 6) Mission Creek, 7) Islais Creek, 8) Pacific Drydock (area in front of stormdrain), 9) Fruitvale (area in front of stormdrain), 10) San Leandro Bay and 11) Central Basin. The first seven of these sites were ranked high, the rest were ranked moderate. Following State Board guidance, individual cleanup plans were developed for all toxic hot spots ranked high. Except for the San Francisco Bay cleanup plan, these cleanup plans require further investigations of these sites to define the aerial extent of contamination and feasibility studies evaluating potential cleanup options. All of these investigations are ongoing. When a Cleanup Order is prepared for any of these sites that order will be brought to the Board for approval. The San Francisco Bay cleanup plan includes cleanup of New Almaden Mine and Pt. Potrero, implementation of a regional mercury strategy, investigation and cleanup of ongoing sources of mercury and PCBs, continuation of fish monitoring and public education on reducing risks from consuming fish, source control and product substitution. At this time there is no requirement or funding for implementation of these plans except through the

standard regulatory process that is commonly used to address contaminated sites.

The State Board requested that Regional Board staff evaluate potential impacts from possible remediation measures and mitigations for those impacts to assist them in CEQA documentation. This evaluation, included in Appendix H, is solely intended to provide information to State Board staff. Actual CEQA compliance will be part of the consolidated statewide plan. A letter from the Ca. Dept. of Fish and Game approving the Regional Toxic Hot Spot Cleanup Plan under the Ca. Endangered Species Act is included in Appendix I.

State Board staff will prepare a consolidated statewide cleanup plan which will include all regional cleanup plans as well as statewide ranking and guidance on delisting sites, reevaluating WDRs and recommendations for further funding of cleanups. The statewide plan requires CEQA documentation, State Board approval and OAL approval before it is submitted to the legislature. The legislative deadline is June 30, 1999.

RECOMMENDATION: Information item, no action required

File No. 1150 (KMT)

APPENDICES:

A - Contamination Levels in Fish Tissue in San Francisco Bay (Board Members Only)
B - Interim Human Health Advisory for Consumption of Fish From San Francisco Bay
C - Sediment Quality and Biological Effects in San Francisco Bay (Board Members Only)
D - Water Quality Control Policy for Guidance on Development of Regional Toxic Hot Spot Cleanup Plans (Board Members Only)
E. - Draft Final Regional Toxic Hot Spot Cleanup Plan, San Francisco Bay Region (Board Members Only)
F - Public and Peer Review Comments
G - Response to Comments
H - Evaluation of Potential Impacts From Possible Remediation Alternatives and Mitigation for Those Impacts
I - Ca. Dept. of Fish and Game Ca. Endangered Species Act Letter