

February 27, 2007  
Project 13204.000.0

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Mr. Bruce Gwynne  
Environmental Scientist  
California Regional Water Quality Control Board, North Coast Region  
5550 Skylane Boulevard, Suite A  
Santa Rosa, CA 95403

Subject: Notice of Public Solicitation of Water Quality Data and Information for 2008 Integrated Report – List of Impaired Waters and Surface Water Quality Assessment [303(d)/305(b)]

Dear Mr. Gwynne:

On behalf of the Humboldt Bay Harbor, Recreation & Conservation District (Harbor District), Geomatrix Consultants, Inc. (Geomatrix) is submitting this letter and the enclosed data and information in response to the December 4, 2006 *Notice of Public Solicitation of Water Quality Data and Information for 2008 Integrated Report – List of Impaired Waters and Surface Water Quality Assessment [303(d)/305(b)]* (2008 Integrated Report). The Harbor District requests that California Regional Water Quality Control Board, North Coast Region (Regional Water Board) staff evaluate and use these data and information in developing the 2008 Integrated Report and conducting a listing/de-listing analysis for polychlorinated dibenzo-p-dioxins and polychlorinated dibenzo-p-furans (dioxins) in Humboldt Bay in accordance with the requirements of the *Water Quality Control Policy For Developing California's Clean Water Act Section 303(d) List*, which was adopted by the California State Water Resources Control Board (State Water Board) in September 2004.

Enclosed are data from multiple sources. It is our understanding that, except as noted below, the enclosed data was not reviewed during the State Water Board staff's evaluation that led to the October 25 2006 Humboldt Bay dioxins Clean Water Act Section 303(d) listing. We understand that only the tissue data collected in 2002 and presented on page 1 of 4 in Table A-5 of the *Scoping Ecological and Off-Site Human Health Risk Assessment* and the Harbor District's 2005 maintenance dredging project dioxin sediment data were the only data reviewed by the State Water Board staff prior to the 2006 listing decision. In addition, the data quality limitations of the 2002 tissue data were not considered by the State Water Board staff.



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The sources of data and associated documents enclosed include:

**United States Army Corps of Engineers, San Francisco District**

- *Bioassays and Bioaccumulation Testing, Humboldt Bay, Final Report. April 1986.*
- *Bioassays and Bioaccumulation Testing of Sediments from Humboldt Harbor. December 1989.*
- *Bioassay, Bioaccumulation, and Chemical Testing of Sediments from Humboldt Bay Harbor. July 1992.*
- *Chemical Analysis of Sediments from Humboldt Bay, Final Report. June 1992.*
- *Chemical Analysis, Toxicity Evaluation, and Bioaccumulation of Sediments from Humboldt Bay: Baseline Survey I Fiscal Year 1993, Final Report. September 1993.*
- *Chemical Analysis, Toxicity Evaluation, and Bioaccumulation Exposure of Sediments from Humboldt Bay: Baseline Survey II Fiscal Year 1994, Final Report. November 1994.*
- *Chemical Analysis, Toxicity Evaluation, and Bioaccumulation Exposure of Sediments from Humboldt Bay: Baseline Survey III Fiscal Year 1995, Final Report. February 1996.*
- *Chemical Analysis and Toxicity Evaluation of Sediments from Eureka Channel Extension, Humboldt Harbor for 1999 Maintenance Dredging, Final Report. June 1999.*
- *United States Army Corps of Engineers Humboldt Harbor Bar and Entrance Channel FY 2000 O&M Maintenance Dredging, Sampling and Analysis Results. May 2000.*
- *United States Army Corps of Engineers Humboldt Harbor Interior Channels: FY 2001 O&M Maintenance Dredging, Sampling and Analysis Results. May 2001.*
- *Chemical, Physical and Biological Testing of Sediments from the Humboldt Harbor Federal Channel, Eureka, California. March 2005.*
- *Chemical, Physical and Biological Testing of Sediments from the Humboldt Harbor Federal Channel, Eureka, California: Addendum Report: Bioaccumulation Tissue Chemistry. April 2005.*

**California Department of Health Services**

- *California Department of Health Services Dioxins in Molluscan Shellfish, Humboldt Bay Sampling, April 15 to April 18, 2003 (includes shellfish tissue and sediment data).*

**North Coast Regional Water Quality Control Board**

- *Dioxin Lab Sheet and Summaries, Pulp Mill Effluent Summaries, 1989 and 1990.*

**City of Eureka and Humboldt Bay Harbor and Recreation and Conservation District**

- *Cooperative Eureka Waterfront Facilities Maintenance Dredging Project, Eureka Channel, Humboldt Bay, California, Sampling Results Report for Dioxins/Furans, PCP and PCB Testing. December 2005.*



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#### **Sierra Pacific Industries**

- *Scoping Ecological and Off-Site Human Health Risk Assessment, Sierra Pacific Industries, Arcata Division Sawmill, Arcata California. September 2004.*
- *Revised Supplement to Scoping Ecological and Off-site Human Health Risk Assessment, Sierra Pacific Industries, Arcata Division Sawmill, Arcata California. September 2006.*

Additional data on file at the Regional Water Board office in Santa Rosa that was not reviewed by State Water Board staff as part of the 2006 listing evaluation include effluent and receiving water priority pollutant analysis results that permitted dischargers have performed pursuant to their National Pollutant Discharge Elimination System (NPDES) permit requirements. These priority pollutant results include dioxin data that should be evaluated in development of the 2008 Integrated Report and in the listing/de-listing analysis. Albeit not enclosed in this submittal, Geomatrix assumes that reference to these data already in Regional Water Board files will result in the data being assembled and reviewed by Regional Water Board staff.

Also enclosed in this submittal is information presented to the State Water Board before and during their February 20, 2007 meeting in Sacramento as part of a petition to reconsider the dioxin listing decision made by the State Water Board at its October 25, 2006 meeting. This information includes the *White Paper, 2006 Humboldt Bay Clean Water Act Section 303(d) Listing for Dioxins*, dated January 5, 2007, that was prepared by Geomatrix on behalf of Humboldt Bay stakeholders, and a slide presentation prepared on behalf of the Harbor District for the February 20, 2007 meeting. Geomatrix's review of the analysis completed by State Water Board staff that led to the 2006 Humboldt Bay dioxins 303(d) listing is summarized in this information and may assist Regional Water Board staff during their listing/de-listing analysis.

In our review of the analysis completed by State Water Board staff for the 2006 listing, we have identified several significant technical flaws that Regional Water Board staff should be aware of and should correct during their 2008 listing/de-listing analysis. These include:

- A selected subset of available data was reviewed by State Water Board staff as part of the 2006 listing evaluation. All of the available and pertinent Humboldt Bay dioxin data from all media (shellfish tissue, fin fish tissue, sediment, water column) should be reviewed in the 2008 process.
- The 2006 evaluation guideline used for the listing assumed an inappropriate consumption rate for shellfish. The 2008 evaluation guideline should be based on appropriate, species-specific consumption rates such as those published by the United States Environmental Protection Agency (USEPA).



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- Whole fin fish tissue data were compared to human health screening criteria in the 2006 listing process. Consistent with guidance from the California Office of Environmental Health Hazard Assessment (OEHHA) and USEPA, fin fish filet data should be used in the 2008 process rather than whole fin fish data. Fin fish filet data for Humboldt Bay is readily available and is included with this submittal.
- Dioxin Toxicity Equivalency Factors (TEFs) for aquatics species were used incorrectly for comparison to human health screening values. The correct, mammalian TEFs should be used during the 2008 process.
- Sediment and water quality dioxin data were not assessed as part of the weight-of-evidence evaluation. All available data should be evaluated and considered in the 2008 listing process.

We appreciate this opportunity to provide you with information that will assist the Regional Water Board in completing its 2008 Integrated Report listing/de-listing analysis. If you have any questions regarding this submittal, please contact Jess Brown at 707-444-7800 ext 12 or Ed Conti at 510-663-4140.

Sincerely yours,  
GEOMATRIX CONSULTANTS, INC.

Jess Brown  
Senior Scientist

Edward Conti, CEG, CHG  
Principal Geologist

JB/EC/jd  
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Attachment: List of Enclosures

cc: Mr. David Hull - Humboldt Bay Harbor Recreation & Conservation District,  
w/enclosures  
Mr. David Evans – North Coast Regional Water Board, w/o enclosures  
Ms. Catherine Kuhlman – North Coast Regional Water Board, w/o enclosures  
Mr. William Massey – North Coast Regional Water Board, w/o enclosures



## LIST OF ENCLOSURES

### Notice of Public Solicitation of Water Quality Data and Information for 2008 Integrated Report List of Impaired Waters and Surface Water Quality Assessment [303(d)/305(b)]

- Blasland, Bouck, and Lee, Inc., 2005, *Chemical, Physical and Biological Testing of Sediments from the Humboldt Harbor Federal Channel, Eureka, California*, March.
- Blasland, Bouck, and Lee, Inc., 2005, *Chemical, Physical and Biological Testing of Sediments from the Humboldt Harbor Federal Channel, Eureka, California: Addendum Report: Bioaccumulation Tissue Chemistry*, April.
- California Department of Health Services, 2003, *Dioxins in Molluscan Shellfish Humboldt Bay Sampling*, April 15 to April 18.
- EVS Environment Consultants, Inc., 1989, *Bioassays and Bioaccumulation Testing of Sediments From Humboldt Harbor*, December.
- EVS Environment Consultants, Inc., 1992, *Bioassay, Bioaccumulation, and Chemical Testing of Sediments from Humboldt Bay Harbor*, July.
- EVS Environment Consultants, Inc, 2000, *United States Army Corps of Engineers Humboldt Harbor Bar and Entrance Channel FY 2000 O&M Maintenance Dredging, Sampling and Analysis Results*, May.
- EVS Environment Consultants, Inc, 2001, *United States Army Corps of Engineers Humboldt Harbor Interior Channels: FY 2001 O&M Maintenance Dredging, Sampling and Analysis Results*, March.
- Geomatrix Consultants, Inc., 2004, *Scoping Risk Assessment and Off-Site Human Health Risk Assessment Sierra Pacific Industries, Arcata Division Sawmill, Arcata, California*, September.
- Geomatrix Consultants, Inc., 2006, *Revised Supplement to Scoping Ecological and Off-site Human Health Risk Assessment. Sierra Pacific Industries, Arcata Division Sawmill, Arcata, California*, September.
- Geomatrix, 2007, *White Paper, 2006 Humboldt Bay Clean Water Act Section 303(d) Listing for Dioxin*, January 5.
- Geomatrix, 2007, *2006 Humboldt Bay Clean Water Act Section 303(d) Listing for Dioxins*, PowerPoint Presentation, February 20.
- North Coast Regional Water Quality Control Board, 1989 & 1990, *Dioxin Lab Sheet and Summaries, Pulp Mill Effluent Summaries*.
- Northwestern Aquatic Services, Inc., 1986, *Bioassays and Bioaccumulation Testing, Humboldt Bay, Final Report*, April.



- Pacific Affiliates, Inc., 2005, *City of Eureka and Humboldt Bay Harbor and Recreation and Conservation District, Cooperative Eureka Waterfront Facilities Maintenance Dredging Project Eureka Channel, Humboldt Bay, California, Sampling Results Report for Dioxins/Furans, PCP and PCB Testing*, December.
- Toxscan, Inc. and Kinetic Laboratories, Inc., 1992, *Chemical Analysis of Sediments from Humboldt Bay, Final Report*, June.
- Toxscan, Inc. and Kinetic Laboratories, Inc., 1993, *Chemical Analysis, Toxicity Evaluation, and Bioaccumulation of Sediments from Humboldt Bay: Baseline Survey I Fiscal Year 1993, Final Report*, September.
- Toxscan, Inc. and Kinetic Laboratories, Inc., 1994, *Chemical Analysis, Toxicity Evaluation, and Bioaccumulation Exposure of Sediments from Humboldt Bay: Baseline Survey II Fiscal Year 1994, Final Report*, November.
- Toxscan, Inc. and Kinetic Laboratories, Inc., 1996, *Chemical Analysis, Toxicity Evaluation, and Bioaccumulation Exposure of Sediments from Humboldt Bay: Baseline Survey III Fiscal Year 1995, Final Report*, February.
- Toxscan, Inc. and Kinetic Laboratories, Inc., 1999, *Chemical Analysis and Toxicity Evaluation of Sediments from Eureka Channel Extension, Humboldt Harbor for 1999 Maintenance Dredging, Final Report*, June.