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Secretary for
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California Regional Water Quality Control Board

Los Angeles Region

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Gray Davis
Governor

January 15, 2003

Brian Mossman
Boeing Realty Corporation
3855 Lakewood Boulevard
Building 1A, MCD001-0097
Long Beach, CA 90846

GENERAL WASTE DISCHARGE PERMIT COVERAGE FOR BOEING REALTY CORPORATION, FORMER C-1 FACILITY, LONG BEACH, CALIFORNIA, (ORDER NO. R4-2002-0030 (SERIES NO. 8), CLEANUP AND ABATEMENT ORDER 95-048, FILE NO. 95-034)

Dear Mr. Mossman:

We have completed our review of your application for coverage under General Waste Discharge Requirements to inject carbohydrate solutions made from sodium lactate, soybean oil, ethanol, and acetate to groundwater at the subject site for use in in-situ bioremediation to remediate volatile organic compounds (VOCs) in groundwater.

Carbohydrate solution will be delivered into the saturated zone at four pilot test areas: Buildings 1D, 3, 14, and 36. The carbohydrate solutions will be introduced into the subsurface through both injection points and injection wells. It is estimated that 1,607,000 gallons, 783,000 gallons, and 1,693,000 gallons of an approximately 1% solution of soybean oil will be injected into the Building 1D, Building 14, and Building 36 pilot test areas respectively. It is estimated that 629 gallons of ethanol and 1,527 gallons of sodium lactate will be injected annually via three extraction loops (each operating at 12 gpm) into the Building 3 pilot test area.

Groundwater monitoring programs will be implemented to evaluate the performance of the pilot tests. Monitoring results will be used to determine and adjust the concentration, rate of delivery, and volume of carbohydrate solutions used. The estimated duration of the four pilot tests range from approximately one year to two and a half years. Based on the results of these efforts, this technology may be used to remediate additional areas impacted by VOCs at the C-1 Facility pursuant to this General Permit. Boeing Realty Corporation (BRC) will be required to submit additional work plans and receive approval prior to conducting additional pilot tests or full-scale remediation at any other areas at this facility.

The groundwater monitoring programs for each injection area shall include a monitoring network to evaluate each pilot test area and shall meet the requirements in the enclosed monitoring and reporting requirements. These monitoring and reporting program requirements supercede previous requirements presented in the work plan approval letters for these four areas. An initial or "baseline" round of sampling shall be conducted to identify pre-carbohydrate solution injection groundwater conditions.

Any potential adverse water quality impacts that may result shall be localized, of short-term duration, and shall not impact any existing or prospective uses of groundwater. Groundwater quality shall be monitored to verify no long-term adverse impact to water quality. There may be small increases associated with soluble

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Boeing Realty Corporation C-1 Facility

- 2 -

January 15, 2003

gases such as methane, ethane, ethene, and carbon dioxide. The Former C-1 Facility site is located in the City of Long Beach at Latitude: N33° 50', Longitude: W118° 9'. The quantities and types of carbohydrate solution injected shall be documented per the Monitoring and Reporting Program No. 8520.

Regional Board staff has reviewed the information provided and has determined that the proposed discharge meets the conditions specified in Regional Board Order No. R4-2002-0030, "*General Waste Discharge Requirements for Groundwater Remediation at Petroleum Hydrocarbon Fuel and/or Volatile Organic Compound Impacted Sites*," adopted by this Regional Board on January 24, 2002. Refer to the attached Fact Sheet.

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2002-0030 (Series 8) and Monitoring and Reporting Program No. CI-8520. Please note that the discharge limits in Attachment A (DWR Basin No. 4-11 (Central Basin)) of this Order No. R4-2002-0030 are applicable to your discharge.

The "Monitoring and Reporting Programs" require you to implement the monitoring programs on the effective date of this enrollment under Regional Board Order No. R4-2002-0030. All monitoring reports shall be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to "Compliance File No. CI-8520," which will assure that the reports are directed to the appropriate file and staff. Also, please do not combine other reports with your monitoring reports. Submit each type of report as a separate document.

We are sending a copy of Order No. R4-2002-0030 only to the applicant. A copy of the Order will be furnished to anyone who requests it.

Please contact Mr. John Geroch at (213) 576-6737 or Dr. Rebecca Chou at (213) 576-6733 if you have any questions.

Sincerely,

Dennis A. Dickerson
Executive Officer

Enclosures

Board Order No. R4-2002-0030
Monitoring and Reporting Program No. CI-8520
Standard Provisions Applicable to Waste Discharge Requirements
Fact Sheet

cc: Chris Nagler, Watermaster-California Department of Water Resources

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- 3 -

January 15, 2003

Mitchell Yamada, Certified Unified Program Agency, City of Long Beach
Christopher Ross, Hargis + Associates
Cheryl Ross, West Basin Municipal Water District
Steve Nakauchi, City of Long Beach, Department Of Health Services
Scott Zachary, Haley & Aldrich

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