



California Regional Water Quality Control Board

Los Angeles Region



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February 5, 2004

Mr. Nirmal Singh
ITT Cannon International, Inc.
666 E. Dryer Road
Santa Ana, CA 92705

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
CLAIM NO: 7002 2410 0006 3316 3213

Dear Mr. Singh:

GENERAL WASTE DISCHARGE REQUIREMENTS FOR GROUNDWATER REMEDIATION AT PETROLEUM HYDROCARBON FUEL AND/OR VOLATILE ORGANIC COMPOUND IMPACTED SITES – ITT CANNON, HUMBOLDT STREET PROPERTY, 3209 HUMBOLDT STREET LOS ANGELES, CALIFORNIA (FILE NO. 03-166, CI NO. 8694)

We have completed our review of your application for Waste Discharge Requirements to conduct a pilot test to evaluate In-situ Reactive Zone (IRZ) technology to remediate petroleum hydrocarbon and volatile organic compound (VOCs)-contaminated groundwater at the above referenced site.

ITT Cannon International, Inc. (Discharger) owns the approximately 3.75 acre vacant property, commonly known as the ITT Cannon Humboldt Street Property, which is located at 3209 Humboldt Street in Los Angeles (Site). In 1998, the Discharger entered into a voluntary clean-up agreement with the Department of Toxic Substances Control (DTSC) to provide oversight for the characterization and cleanup of the contaminated soil and groundwater at the Site. The Site lies at the Los Angeles Coastal Plain Groundwater Basin, West Coast Central Basin, and is located approximately ½ miles east of the intersection of Arroyo Seco with the Los Angeles River at the Los Angeles Narrows. The Site's latitude is 34°04'55" and the longitude is 118°12'59". The depth of groundwater is approximately 40 feet, with a south to southwest direction.

Based on investigations conducted between 1989 and 1991, it was determined that the soil was contaminated with trichloroethene (TCE), tetrachloroethene (PCE), polychlorinated biphenyls (PCBs), fuel oil/light oil, gasoline and light to heavy oil as total petroleum hydrocarbon (TPH) and benzene, toluene, ethylbenzene and xylenes (BTEX). Lead, copper and cadmium metals were also found in the soil at localized areas and at a shallow depth. In addition, the investigations indicated that PCE, TCE, TPH, BTEX and PCBs are present in the shallow aquifer.

On October 8, 2003, the DTSC approved the Final Remedial Action Plan (FRAP) to use IRZ technology to remediate the groundwater contaminated with PCE, TCE, TPH and BTEX. However, the PCB cleanup was not included in the FRAP because the analytical results show that there are no PCBs dissolved in groundwater.

IRZ technology uses a groundwater injection system with sucrose and a carbohydrate source to enhance the biologically mediated reactions. At this site, molasses will be injected into the

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contaminated groundwater to enhance bio-remediation. Hydrolysis and fermentation of carbohydrate ultimately result in the production of acetate and hydrogen, which serve as the source of energy for bacteria using sulfate and carbon dioxide (CO₂) as electron acceptors. Methanogens that use CO₂ as electron acceptors are the most noted metabolic group of anaerobic bacteria that is responsible for reductive dechlorination which transforms the VOCs into less chlorinated intermediates and finally to CO₂ and water

The remediation plan includes a pilot test to determine the final design parameters for a full-scale groundwater remediation. The pilot test will inject enough carbon source inside the main area of the on-site plume to effectively initiate an IRZ. Groundwater monitoring will be completed in selected wells during the pilot test events and during the full scale IRZ implementation. The pilot test will be completed with one injection well, INJ-1, and four new IRZ monitoring wells, IRZM 1, 2, 3 and 4. A maximum of six injection events is planned for the pilot test. Four injections are planned during the first two months, with two supplemental injections as needed.

Potassium bromide (tracer) will be added to the reagent solution and delivered to injection well INJ-1 during the first injection event. The pilot test wells will be periodically sampled for bromide ions to trace the maximum effective radius of the injection events. The potassium bromide solution will be used to evaluate the diffusion of the reagent solution during the pilot test.

If the pilot or feasibility test is determined to be successful and a full-scale treatment system is proposed for site cleanup, then the following is required:

- a. A final Remedial Action Plan (RAP) is to be submitted to the Regional Board for review and approval prior to its implementation; and
- b. A revised Report of Waste Discharge (RoWD) is to be submitted for the full-scale treatment system.

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 gases such as methane, ethane, ethene, and carbon dioxide. The quantities of IRZ injected shall be documented per the Monitoring and Reporting Program No. CI-8694.

Regional Board staff have reviewed the information provided and have determined that the proposed discharge meets the conditions specified in 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.

Enclosed are your Waste Discharge Requirements, consisting of Regional Board Order No. R4-2002-0030 (Series No. 044) and Monitoring and Reporting Program No. CI-8694.

Mr. Nirmal Singh
ITT Cannon International, Inc.

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February 5, 2004

The Monitoring and Reporting Program requires you to implement the monitoring program on the effective date of this enrollment (February 5, 2004) 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, include a reference to No. CI-8694, which will assure that the reports are directed to the appropriate file and staff. 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.

If you have any additional questions, please contact Ms. Dionisia Rodriguez at (213) 620-6122.

Sincerely,

Dennis A. Dickerson
Executive Officer

Enclosures:

1. Board Order No. R4-2002-0030
2. Monitoring and Reporting Program No. CI-8694
3. Standard Provisions Applicable to Waste Discharge Requirements (addressee only)

cc: Mr. Alberto Valmidiano, Department of Toxic Substances Control
Ms. Vera Melnyk-Vecchio, State Department of Health Services, Drinking Water Field Operations
Mr. John J. Dodge, Arcadis G&M, Inc.
Mr. Robert Ruscitto, Arcadis G&M, Inc.
Mr. Jose Reynoso, Los Angeles County Department of Health Services, Water Well Permits

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