



Department of Toxic Substances Control



Winston H. Hickox
Secretary for
Environmental
Protection

Edwin F. Lowry, Director
1011 N. Grandview Avenue
Glendale, California 91201

Gray Davis
Governor

June 18, 1999

Attn: D. Dassler
S. Lafflam

Ms. Mary Ellen Waller
185 Bell Canyon Boulevard
Bell Canyon, California 91307

Dear Ms. Waller:

EVALUATION OF ANALYTICAL RESULTS FROM SOIL AND SEDIMENT SAMPLES COLLECTED IN BELL CANYON, JUNE 1998

The Department of Toxic Substances Control (DTSC) has evaluated the analytical results from the soil and sediment samples collected by DTSC in Bell Canyon in June 1998. Attached is DTSC, Human and Ecological Risk Division's evaluation of that data by Staff Toxicologist Dr. T. R. Hathaway.

Because these samples were collected for purposes of evaluating any future application proposed by Boeing for its data, the small number of samples that were collected do not allow DTSC to determine if contaminant migration from the Santa Susana Field Laboratory (SSFL) into Bell Canyon has occurred. As you are aware, DTSC is continuing to oversee an investigation at SSFL to determine the nature and extent of contamination from operations. When the on-site RCRA Facility Investigation Report has been received and reviewed, DTSC will be able to determine if contaminants of potential concern (COPC) could have migrated off-site, warranting an off-site investigation. Without adequate characterization of SSFL or Bell Canyon, DTSC cannot determine if the sample results are representative.

If you would like to arrange a meeting with DTSC to discuss the analytical results, please contact Penny Nakashima at (818) 551-2900.

Sincerely,

José Kou, P. E., Chief
Southern California Permitting Branch

Attachment

cc: see next page

06-22-99A11:10 RCVD

004159 RC

California Environmental Protection Agency
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Ms. Mary Ellen Waller

June 18, 1999

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Protection

MEMORANDUM

To: Penny Nakashima, Project Manager
Permitting Branch (Glendale Office)
Department of Toxic Substances Control
California Environmental Protection Agency
1011 N. Grandview Avenue
Glendale, California 91291

From: TR Hathaway, DVM, MS, DABT
Staff Toxicologist, Human and Ecological Risk Section (HERS)
Human and Ecological Risk Division (HERD)
Science, Pollution Prevention, and Technology (SPPT)
Department of Toxic Substances Control (DTSC)
California Environmental Protection Agency

Date: June 7, 1999

Subject: Bell Canyon Area - Evaluation of Split Sample Results
Santa Susana Field Laboratory
Ventura County, California
PCA Code: 24120 Site Codes: 300122/53, 300381/53, 300232/53
MPC: 44

Background

Bell Canyon is adjacent to the southern edge of the SSFL. Soil and sediment samples were collected to determine if off-site contaminant migration into the Bell Canyon area had occurred. Surficial soil samples were collected from three residential yards, Bell Creek, drainages from SSFL to Bell Creek, and from undeveloped areas of Bell Canyon and the SSFL Buffer Zone. This memorandum reports the evaluation of split sample data collected by DTSC in the Bell Canyon area.

Documents Reviewed

Laboratory reports of results of split samples collected in the Bell Canyon area and analyzed by the Hazardous Materials Laboratory of the Department of Toxic Substances Control (DTSC).

Scope of Review

The DTSC Project Manager requested review of the split sample data and assessment of potential health effects. This review does not include assessment of congruence of samples collected to evaluate potential radiological contamination. The DHS Radiologic Health Branch should review the analytical results of the split samples to assess radiological contamination.

General Comments

Split samples are two or more samples collected from the same location and analyzed by different laboratories. Split sample collection locations include: 1) four samples collected from residential yards, 2) six samples collected from undeveloped areas of Bell Canyon, 3) two background samples collected in areas which were not likely to be impacted by activities at the SSFL, and 4) one sample collected an area which was a drainage area from the SSFL.

The following numbers of analyses were conducted on the split samples that were collected by DTSC personnel: 1) thirteen were analyzed for polychlorinated dibenzodioxins/furans (PCDD/Fs), 2) three from residential yards were analyzed for radionucleotides (these results have not been evaluated), 3) eleven were analyzed for semivolatile organic compounds (SVOCs), 4) thirteen were analyzed for metals (including five which were analyzed for hexavalent chromium), 5) nine samples were analyzed for polychlorinated biphenyls (PCBs), and 6) eight were analyzed for two classes of Total Petroleum Hydrocarbons [*i.e.*, C6-C10 (gasoline range) and C10-C25 (diesel range)].

The potential risks and hazards associated with these sample results for each group of chemicals is discussed in the Specific Comments section (below) and are summarized in Table 1 in the Conclusions section.

Specific Comments

Polychlorinated dibenzo-p-dioxins/furans

The carcinogenic risk associated with potential exposures to PCDD/Fs is evaluated according to an approved EPA method which utilizes Toxicity Equivalency Quotients (TEQs) to weight each congener concentration according to toxicity and structural activity data. In general, a larger number of chlorine molecules results in a lower toxicity rating. Toxicity Equivalency Quotients of the 13 split samples are 14, 20, 14, 38, 32, 15, 7.6, 21, 2.6, 2.8, 2.7, 1.4, and 1.8 parts per trillion (ppt).

Metals

Metals, with the exception of lead, were not detected at levels which exceeded general background in California soils. The detection limit was 5 milligrams per kilogram soil in 13 samples. Lead was detected in sample 971060, a split sample collected at a residence in Bell Canyon, at a concentration of 383 mg Pb/ kg soil. No other sample exceeded 21 milligrams per kilogram. The sample result was

probably not related to off-site migration since no other split samples indicated serious contamination and there was no indication of migration in the SSFL drainages or in Bell Creek. Additionally lead has not been identified as a chemical of potential concern at SSFL sites which have been previously characterized. Hexavalent chromium was not detected in five samples.

Semivolatile organic compounds and petroleum hydrocarbons

Two SVOCs, di-n-butyl phthalate and bis(2-ethylhexyl) phthalate, were identified in each of two of 11 samples analyzed. These chemicals are common laboratory contaminants with no reported history of use at or near the facility. Therefore, no conclusions relative to potential risk or hazard are appropriate at this time.

PCBs were not detected at detection limits of 0.5 milligrams per kilogram soil in nine samples

Total petroleum hydrocarbon (TPH) levels are low (30 and 31 milligrams per kilogram in 2 of eight samples) and specific chemicals found in petroleum, *i.e.*, volatile organic compounds (*e.g.*, benzene, toluene, ethylbenzene, and xylene), metals and polycyclic aromatic hydrocarbons, were also not detected in these samples.

Conclusions

The United States Agency for Toxic Substances and Disease Registry (ATSDR) has established an action level for polychlorinated dibenzo(p)dioxins and dibenzofurans of one part-per-billion (ppb) total TEQ in residential soils. This ATSDR action level has been endorsed by the USEPA, the DTSC, and the Cal-EPA Office of Environmental Health Hazard Assessment as appropriate for screening residential soil samples when they are analyzed for dioxins, along with the conclusion that soils below the 1 ppb action level require no action to be taken for purposes of public health protection. As all samples reported in this study are well below this action level, the soils are deemed safe.

Lead in soils are usually screened using either established models developed by regulatory agencies, such as the USEPA Integrated Exposure/Uptake Biokinetic Model (IEUBK) or the DTSC Leadsread spreadsheet. Both require specific information regarding lead in air, drinking water, and food to be used correctly. For screening single data points, the USEPA, using the IEUBK model and generic data for air and water, has published a screening value of 400 mg lead per kilogram soil (*USEPA Region 9 Preliminary Remediation Goals, 1998*). Using similar generic information for air and water, as well as the most current information supplied by the U.S. Food and Drug Administration about lead in the food supply (*Gunderson, E.L., 1995 FDA Total Diet Study, July 1986-April 1991, Dietary Intakes of Pesticides, Selected Elements, and Other Chemicals. Journal of AOAC International, 78 [6] 1353-1363*), the DTSC Leadsread spreadsheet generates a screening value of 300 mg lead per kilogram soil. Therefore, the single sample of 383 mg lead per kg soil falls within the range of screening values used within the State of California. However,

caution must be exercised when interpreting the results of any single analysis taken from a property,
as no conclusions are possible about how representative that single sample is of the remaining soils.



Reviewer: Deborah J. Oudiz, Ph.D.
Senior Toxicologist, HERD

cc: Mike Anderson, Ph.D.
Associate Toxicologist, HERD

DATE: 6-18-99

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