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Part C 1J-1

Department of Toxic Substances Control

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Arnold Schwarzenegger
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March 27, 2007

Ms. Ellie Townsend-Hough
California Energy Commission
1516 Ninth Street MS 40
Sacramento, CA 95814

Re: Proposed Vernon Power Plant

Dear Ms. Townsend-Hough:

As requested, the Department of Toxic Substances Control (DTSC) has reviewed the reports referenced below. The documents were prepared by Geomatrix Consultants, Inc. on behalf of Alcan, Inc. (Facility). These reports were submitted to comply with requirements set forth by the California Energy Commission as part of the application process for the proposed Power Plant in Vernon, California.

Documents Reviewed: Phase II Report Pechiney Cast Plate Facility (March 2006); Supplemental Phase II Environmental Site Assessment Report (December 2006); Stoddard Solvent Impacted Soils Investigation (May 2006); PCB Notification Plan (September 2006).

Based on the review, the following comments and/or suggestions are provided:

1. **Monitoring Wells:** At least three (3) monitoring wells remain at the former Facility. The fate of these wells should be documented indicating that proper well abandonment activities and/or adequate protection were provided during demolition activities at the site in compliance with California DWR Bulletins 74-81 and 74-90. Further, the RWQCB oversight with regard to the existing groundwater contaminant plume should be discussed.

2. **Polychlorinated Biphenyls (PCBs):** It is not clear if concrete and/or soils contaminated with PCBs were appropriately handled and disposed during demolition activities. Further, there appear to be areas where additional sampling for PCBs is necessary. The status of these investigations should be reported [transformer pads, cathouse area, bldg 104 and bldg 106].

    - If the local agency has determined that certain concentrations of PCBs can remain in the subsurface with a land use covenant, this should not only be discussed in detail, but documentation of the decisions and site maps showing where those areas are located should be presented.

- For areas where PCBs have been detected at depth {vertical pits bldg 104}, an evaluation of contaminant migration to groundwater should be presented.

3. **Stoddard Solvent Contamination**: The reports identify that contamination from Stoddard Solvent exists in the subsurface. It is also stated that Areas B and D are not vertically defined. The report states that it has been adequately demonstrated that biodegradation is occurring. However, other sections of the report state that 'with few exceptions, the concentration distribution data from the recent characterization is consistent with previous surveys'. It is the author's opinion that it has not been clearly demonstrated that the contamination has been reduced by natural attenuation. It also appears that a proposal for continued monitored natural attenuation (MNA) of the contaminant plume in the vadose zone is likely to be submitted. While this may be a potential option for the site, it has not been demonstrated that it can be successfully applied to this site. The following additional comments are provided with regard to the MNA approach:

   - EPA's directive provides that all viable remedial options should be evaluated and compared during a study phase leading to a selection of a remedy. In this case MNA is apparently the sole remedy proposed for the site.

   - Under the OSWER programs, MNA must still be protective of human health and the environment. One of the key principles of the OSWER program is that contaminated soil should be remediated to achieve an acceptable level of risk to human and environmental receptors and to prevent any transfer of contamination to other media (i.e. soil and groundwater). Further, groundwater should be considered to have 'beneficial use' whenever possible. In this case, transfer of contaminants from soil matrix to vapor and groundwater has not been fully evaluated.

   - A conceptual site model (CSM) has not been presented. CSMs reflect both the level of site understanding and the amount of information and complexity of analysis required to support the decisions that need to be made.

   - The 'mass' of contaminants should be quantified. The nature and extent of the contamination should be clearly defined. Figures should be presented which depict the outline of the plume, including its vertical and lateral limits.

   - It may be necessary to conduct contaminant fate and transport models to further support the theory that the 'mass' of contaminated soils is decreasing through biodegradation processes, and that any remaining contamination does not pose a risk to human health or the environment.

- Geologic cross sections and boring logs signed by a professional geologist should be submitted which support the contention that a 'high quality clay layer' exists in the subsurface; and that this clay layer successfully limits vertical migration of contaminants to the aquifer.

- Groundwater affected by the Stoddard Solvent plume should be addressed. Monitoring wells should be installed and/or a model should be presented which addresses migration of contaminants to the aquifer.

4. **Volatile Organic Compounds (VOCs):** Elevated concentrations of VOCs exist in the subsurface at the former Facility. For example, vapor phase TCE was detected at 1,900 ug/l at 15 feet bgs. It is the author's experience that this concentration presents a significant risk to human health and the environment. It is recommended that the vapor plume be completely defined, and that an indoor air risk assessment, following DTSC and USEPA Guidance and using the J & E model, be completed for this property prior to redevelopment. Further, the risk to groundwater from migration of VOCs should also be addressed.

5. **Risk Assessment:** If a 'Risk Based Closure' is proposed for this property, along with a 'Land Use Covenant' [as mentioned in the reports], then it will be necessary to conduct a risk assessment for the site. Current conditions at the site must be assessed, in order to adequately predict the risk to human health and the environment. The intrusion of subsurface vapors into buildings is one of many exposure pathways that must be considered in assessing the risk posed by releases of hazardous chemicals into the environment. The Department of Toxic Substances Control (DTSC) recommends an approach for evaluating vapor intrusion into buildings and its subsequent impact on indoor air quality. If VOCs are present in the subsurface at a site, the vapor intrusion pathway should be evaluated along with the exposure pathways identified in other guidance (Preliminary Endangerment Assessment (PEA) Guidance Manual, DTSC, reprinted 1999; Risk Assessment Guidance for Superfund (RAGS), Volume 1 Human Health Evaluation Manual, Part A, United States Environmental Protection Agency (USEPA) 1989). This approach is applicable to both Comprehensive Environmental Response Compensation and Liability Act (CERCLA) sites and Resource Conservation and Recovery Act (RCRA) facilities.

   As discussed by the USEPA in their risk assessment guidance (USEPA RAGS,1989), the risks from each chemical and from all applicable exposure pathways should be summed to obtain the overall screening level risk posed by chemicals detected at the facility/site. The guidance (listed below), along with the vapor intrusion guidance from the United States Environmental Protection Agency (USEPA, 2002a), provides technically defensible and consistent approaches for evaluating vapor intrusion to indoor air, based upon the current understanding of this exposure pathway.

http://www.dtsc.ca.gov/AssessingRisk/upload/HERD_POL_Eval_Subsurface_Vapor_Intrusion_interim_final.pdf

The risk assessment should include all contaminants of concern detected at the facility, including VOCs, metals [and hexavalent chromium], naphthalene [and other SVOCs], total petroleum hydrocarbons, and PCBs. Further, because vapors can migrate, it may not be appropriate to separate the site into 'high' occupancy and 'low' occupancy areas, as suggested in the report, unless appropriate engineering controls are developed and implemented. Any such controls would need to be monitored under an operation and maintenance agreement as part of the land use covenant.

6. **Other areas:** It is not clear from the reports if the areas listed below were adequately characterized:

    - Sump (sediments within), boring 107 area
    - Saw area (PCBs)
    - Outfall #6 (metals)
    - Former etch station (metals)
    - Rail Line

The comments, provided above, are presented to address concerns with risk to future occupants at the site, as well as threats to groundwater quality. Any questions should be directed to the author, at cbucklin@dtsc.ca.gov.

Sincerely,

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