

STATE OF COLORADO

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Jane E. Norton, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

June 1, 1999

Gary Kleeman
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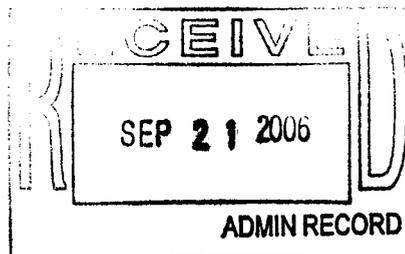
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CCDH

Dear Gary:

RE: CDPHE Comments on the Sampling and Analysis Plan for Groundwater Monitoring at the 903Pad/Ryan's Pit VOC Plume

General Comments:

This plan lacks a definite hypothesis for the apparent natural attenuation of these plumes by discharge to near ground surface. Evidence is presented for discharge of shallow ground water but a formal plan to prove out the termination of the plume in each identified pathway is lacking. The proposed surface water sampling is of little utility to help define where the plumes are discharging to the SID or to other seeps. A number of decision rules should be written for this plan to focus the analysis of the data to be collected. If the else options turn out to be true and further sampling is needed it should be anticipated in this SAP rather than having to make an addendum to it. This plan should support a formal evaluation of the natural attenuation taking place by volatilization from ground water to the atmosphere via seeps or evapotranspiration. All pathways to surface water should be quantified as well as possible so that the contaminant mass being removed can be estimated. The end result of this SAP should be long term monitoring locations that demonstrate there is no impact to surface water from these plumes.



Specific Comments:

1. Section 1.3.2 (p. 16) The input parameters and calculations that produced IT's VOC contaminant flux estimate should be provided as an appendix.
2. Section 1.3.4 (p.22) Our comments on the Draft Conceptual Remediation Design for this project criticized the head maps provided. This document discusses ground water flow as requested but no head maps to support the discussion are provided in this document.
3. Figure 4-1 contains two proposed locations for a well numbered 90199. There is a discrepancy between well 90099 as stated on page 28 and well 90199 on Fig. 4-1.
4. Section 2.0 (p.22) We agree with the proposed well locations but believe the surface water sampling should be revised to support demonstration of VOC discharge locations. Several sequential decisions are involved in this process. First, if the geoprobe borings and sample results indicate a pathway for contaminated ground water, then complete a well in the pathway (applicable for sites 90299 and 90399), else evaluate water levels and sample nearby seeps to confirm presence of discharging groundwater and VOC's. We would suggest sampling surface water at the seep locations nearest the suspected ground water pathways as located on the attached revised version of Figure 4-1. These samples may have to wait until favorable ground water discharge conditions. Decision rules should be developed to guide the surface water sampling as well.

The term "permanent monitoring well locations" is used several times in this section. A better term might "long-term monitoring" (as stated on p. 30) or "routine IMP monitoring" or merely "monitoring well locations."

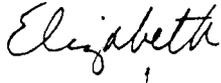
This section implies that the sampling functions will be handled through the IMP, at least after the first year of quarterly sampling. Should this be explicitly stated?

5. Section 5.0 We have a data entry program written to enter geologic logs into the Equis Geo database. Once the translation of old logs to the database is accomplished by CDPHE we expect RFETS to pick up the task of entering new boring logs and well completion information.

Gary Kleeman
June 1, 1999
Page 3

Should you have questions on the issues raised please contact me at 303-692-3429 or Carl Spreng, 303-692-3358.

Sincerely,



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cc: Tim Rehder, EPA
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2/2