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NAS FORT WORTH
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LETTER REGARDING REGULATORY REVIEW AND COMMENTS ON BASEWIDE
QUARTERLY GROUNDWATER MONITORING FIRST SEMI ANNUAL REPORT NAS FORT
WORTH TX
1/29/1996
TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

File: 17G
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NAVAL AIR STATION
FORT WORTH JRB
CARSWELL FIELD
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 277

Barry R. McBee, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
John M. Baker, *Commissioner*
Dan Pearson, *Executive Director*



File: 17A60
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TEXAS NATURAL RESOURCE CONSERVATION COMMISSION

Protecting Texas by Reducing and Preventing Pollution

January 29, 1996

Mr. Ohlen Long, P.E.
Site Manager
Carswell Air Force Base/
Naval Air Station Joint Reserve Base Fort Worth
AFBCA/OL-H
6550 White Settlement Road
Ft. Worth, TX 76114

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Re: Naval Air Station Joint Reserve Base Fort Worth (NAS Ft. Worth)
a.k.a. Carswell AFB
TNRCC Solid Waste Registration No. 65004
EPA ID NO. TX0571924042
Hazardous Waste Permit No. 50289
Basewide Quarterly Groundwater Monitoring First Semi-Annual Report, October, 1995

Dear Mr. Long:

The staff of the Texas Natural Resource Conservation Commission (TNRCC) Federal Facilities Team and Petroleum Storage Tank (PST) Division have completed their review of the above referenced Report. Based on our review, we have the following comments:

1. Field methodology: The report indicates that too much time was consumed in the first quarter by purging the monitor wells by means of hand bailing and that a submersible pump was utilized during the second quarter. The rate at which the monitor wells were purged, the depth of pump setting, and the rate of water level decline induced in the monitor wells should be documented and included in the text when a pump is used to purge the monitor wells. Rapid evacuation of the monitor wells should be avoided to reduce turbidity and loss of volatiles from recharging ground water.

As an alternative, the TNRCC recommends once again that micro-purging techniques be considered for future events. The purging and sampling of the monitoring wells should be accomplished at a rate of 100-300 milliliters per minute until aquifer water quality parameters (specific conductance, dissolved oxygen, and turbidity) stabilize. The sample pump and tubing should be micropurged a minimum of approximately two volumes to

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ensure the complete removal of stagnant water. It is not necessary to purge the well casing and screen. The purging rate can be increased to one (1) liter per minute as long as drawdown does not exceed 0.1 meter. If well drawdown is greater than 0.1 meter, the pumping rate should be reduced until drawdown is minimized.

Once water quality parameters have stabilized, samples should be collected immediately without waiting for an additional period of time. Samples should be taken from dedicated sampling devices such as bladder or submersible pumps. The use of bailers for well purging and/or sample collection is not appropriate.

The intake of the pump should be located within the section of the well screen that is adjacent to the most permeable strata in the saturated interval. It is recommended that this interval be determined via the inspection of the soil boring logs of each well. If a most permeable zone cannot be identified, then the pump intake should be located in the center of the screen. Non-aqueous phase liquids must be measured prior to purging or sampling a well.

The above method is based upon EPA Region VI consultation with EPA's Robert S. Kerr Environmental Research Laboratory (Ada, Oklahoma) and Field Comparison of Micropurging vs. Traditional Groundwater Sampling, (Kearl, Peter M., et al, 1994). This sampling method should considerably reduce the volume of purge water and hazardous waste disposal fees. It can also negate the need to filter samples due to turbidity, while still providing information necessary to evaluate colloidal contaminant transport.

2. Sample Analysis: A review of Table F, the positive results summary table, indicates that some ground water samples were analyzed for VOCs using EPA method 8240 and 8260. Tables 2-2 and 2-4, the first and second quarter sampling details, do not reference method 8240. Please indicate which samples were analyzed by method 8240. An additional explanation is needed to explain why some of the ground water samples were analyzed for VOCs using EPA method 8240 and not 8260 and vice versa.

The PQLs for some of the chemicals of concern, specifically benzene, tetrachloroethene, and trichloroethene, that were analyzed with method 8240 appear to be one to two orders of magnitude above the MCL/MSCs for those chemicals. Please explain why the PQLs were elevated above the MCL/MSCs. In the future, the PQLs should be set at or below MCL/MSCs.

3. The TNRCC is concerned that NAS Ft. Worth disqualified the well from the sampling program if free phase product occurred in the wells (page 2-5). Please clearly indicate on subsequent maps where free phase constituents exists in the groundwater.

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4. Please note that background concentrations for organic constituents (page 2-72) is assumed to be the Practical Quantitation Limit (PQL) for the appropriate analytical method. Only inorganic constituents (e.g. metals) require an established background concentration for comparison to sample results. Please also be advised that NAS Ft. Worth must define the extent of the plumes to background or PQL, whichever is greater. Finally, the term ARAR implies that the monitoring program is a CERCLA initiative, rather than a RCRA requirement. Please resist the use of this and other CERCLA terminology when discussing environmental activities on NAS Ft. Worth, unless it is associated with the adjacent Air Force Plant 4.
5. The large foldout maps provided in the report provide good detail regarding the locations of monitor wells and surface features; however, the large number of these foldout maps complicates the cross reference process with this report. One large foldout site map which highlights the monitor wells used in the monitoring program would be sufficient. The subsequent potentiometric maps as well as the analyte maps could be adequately depicted on smaller scale maps to fit 11 x 17 inch sized folded pages. This could potentially reduce the overall thickness of the report as well as simplify the cross reference process between text and figures.

Subsequent maps should reflect the extent of the contaminant plume to background or PQL, rather than to a health based standard such as an MCL or Risk Reduction Standard 2 value. The detected analyte maps should reference the EPA method(s) used in the analysis of ground water samples. The presence of free phase product should be clearly indicated wherever known, including in wells not in the sampling program.

The two total BTEX detected maps (not the contoured versions) could be eliminated by adding the total BTEX value to the list of volatiles detected for each monitor well shown on the preceding maps. This would be preferable since the reviewer would be interested in knowing the individual concentration of each BTEX component in addition to the total BTEX concentration.

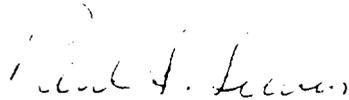
The contoured total BTEX and the contoured total benzene maps appear to give some misinterpretation of the data. The contours generated for the detected analytes have been extrapolated and the contours closed in areas where a lack of control points does not yield sufficient information to form these conclusions. For example, on the total BTEX detected map for the first quarter, specifically in the area of the Base Service Station, the contours are shown to extend approximately 500 feet west and upgradient of the known area of contamination. Granted, there are no nearby monitor wells in that direction to dispel the possibility of contamination in that area, but neither are there adequate control points to support this conclusion. Contour lines should be dashed where approximated or omitted in areas where a lack of data exists.

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The TNRCC concurs with the report's recommendations presented in Section 4.3. We are particularly concerned about the need to address the poorly defined edges of the contaminant plumes. The TNRCC requests that we participate in the next groundwater monitoring program scoping meeting so that we may provide input into new monitor well selection and drilling locations.

If you have any questions or need further assistance with this matter, please contact Mr. Geoffrey Meyer in the Corrective Action Section in Austin at (512) 239-2577, mail code MC127; and/or Mr. Ray Newby of the PST Division in Austin at (512) 239-5695, mail code MC137.

Sincerely,



Paul S. Lewis, Manager
Corrective Action Section

PL/GM &RN

cc: Charles Ray Hatch, P.E., Project Manager, Southwest Division, HQ AFBCA/SW, HQ AFBCA/LD, 1700 N. Moore St., Ste. 2300, Arlington, VA, 22209-2802
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