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Mr. Steve M. Alexander  
Perimeter Areas Section Manager  
Nuclear Waste Program  
Department of Ecology  
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Mr. Douglas R. Sherwood  
Hanford Project Manager  
U.S. Environmental Protection Agency  
712 Swift Boulevard, Suite 5  
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Dear Messrs. Alexander and Sherwood:

QUARTERLY RESOURCE CONSERVATION AND RECOVERY ACT GROUNDWATER MONITORING DATA FOR THE PERIOD JULY 1 THROUGH SEPTEMBER 30, 1996

- References: (1) Hartman, M.J., 1992, "Results of Ground Water Quality Assessment Monitoring at the 1301-N Liquid Waste Disposal Facility and 1324-N/NA Facilities," WHC-SD-EN-EV-003, Rev. 1, Westinghouse Hanford Company, Richland, Washington. 25405
- (2) Hartman, M.J., 1995, "RCRA Assessment Report: Total Organic Halogen at the 1324-N/NA Site," WHC-SD-EN-EV-031, Rev. 0, Westinghouse Hanford Company, Richland, Washington. 41346
- (3) M. J. Furman, RL to S. M. Alexander, Ecology and D.R. Sherwood, EPA, "Quarterly Resource Conservation and Recovery Act Groundwater Monitoring Data for the Period April 1 through June 30, 1996," dated November 18, 1996. ✓

Resource Conservation and Recovery Act (RCRA) groundwater chemistry and water level data for the period July 1 through September 30, 1996, have been verified and evaluated. The data are publicly available in electronic form in the Hanford Environmental Information System (HEIS) database. The electronic availability of the data and the summary provided below fulfill the reporting requirements of WAC 173-303-400 (and by reference, 40 CFR 265.94).

Nine of the RCRA units that are monitored under indicator evaluation programs were sampled during the reporting quarter (Attachment). Seven sites that are monitored under groundwater quality assessment programs, and one site monitored under a final status compliance program were also sampled.

#### Comparison to Concentration Limits

Contamination indicator parameter data (pH, conductivity, total organic halogen, and total organic carbon) from downgradient wells were compared to background values at sites monitored under interim-status, indicator evaluation requirements, as described in 40 CFR 265.93. Concentration limits in downgradient wells were exceeded at two sites, 1324-N/NA and SST WMA U.

1324-N/NA - Conductivity at downgradient wells monitored for the 1324-N/NA site exceeded the critical mean. This site recently reverted to indicator evaluation monitoring after being monitored under assessment for elevated conductivity (Reference 1) and total organic halogen (Reference 2). The current exceedances were expected, because the data are in trend with previous conductivity measurements. Groundwater quality assessment monitoring at the 1324-N/NA Site indicated that the high conductivity is caused by the nonhazardous constituents sulfate and sodium (Reference 1). Because an assessment has already been completed and the high conductivity is caused by nonhazardous constituents, verification sampling and additional assessment monitoring will not be conducted.

Waste Management Area U - A statistically significant increase in total organic halogen concentration was observed in August in one downgradient well monitored for the Single-Shell Tanks, Waste Management Area U. The elevated total organic halogen is believed to be caused by an upgradient source of contamination (carbon tetrachloride). The well will be resampled to verify or refute this initial exceedance.

216-S-10 Pond and Ditch - As reported previously (Reference 3), conductivity at one downgradient well monitored for the 216-S-10 Pond and Ditch exceeded its critical mean value during the second quarter of 1996. Results of verification sampling were received during the third quarter and indicated that the initial exceedance was caused by an error in field measurements.

Results of statistical evaluations at all other indicator evaluation sites indicated that contamination indicator parameters in downgradient wells were below the critical mean values during the July through September quarter. Hence, there is no indication that these sites are impacting groundwater quality.

### Quality Control

Results of the RCRA Quality Control (QC) program for the July through September 1996 quarter will be discussed in detail in the "Annual Report for Hanford Site Groundwater Monitoring for Fiscal Year 1996." Highlights are summarized below. Quality control data that are not available in HEIS are available in electronic form upon request.

Completeness: Completeness of data is determined by dividing the number of results judged to be valid by the total number of results received during the quarter. Valid results are those that have not been rejected or flagged as suspect because of associated QC concerns (e.g., exceeded holding times, results not in line with historical trends). Greater than 90 percent completeness is considered acceptable. During the July through September 1996 quarter, 92.8 percent of the total results received were valid (10,414 data points).

FEB 26 1997

Messrs. Alexander and Sherwood

-3-

Transition of Analytical Laboratories: During the July through September 1996 quarter, the RCRA monitoring program initiated a transition of routine analyses from Datachem Laboratories in Salt Lake City, Utah to Quanterra Environmental Services in St. Louis, Missouri. Approximately half of the chemical analyses were conducted by each laboratory during the quarter. Beginning October 1996, all routine chemical analyses have been conducted by Quanterra. During the transition, split samples from selected wells were collected and analyzed by three laboratories. The results are being evaluated to assess data comparability and will be reported in the future and summarized in the next quarterly data transmittal.

Laboratory QC Data: Datachem and Quanterra both participate in an U.S. Environmental Protection Agency (EPA) water supply study and provide the results to the Pacific Northwest National Laboratory (PNNL). Control limits are set at 3 standard deviations above or below the known concentration in the EPA standard. Datachem had 93.8 percent of results within acceptable limits and Quanterra had 95.2 percent within acceptable limits, indicating excellent performance.

The radiochemistry laboratory, Quanterra, Richland, participates in an Environmental Radioactivity Laboratory intercomparison study program. Results were within control limits for all constituents evaluated.

The information contained in this letter is submitted to the State of Washington Department of Ecology in accordance with WAC 173-303-400 and WAC 173-303-645. If you have questions about this quarterly data transmittal, please contact me at 373-9630.

Sincerely,



M. J. Furman, Project Manager  
Groundwater Project

GWP:MJF

Attachment

cc w/attach:  
M. Hartman, PNNL  
S. Leja, Ecology  
S. Luttrell, PNNL  
R. Smith, PNNL

Table 1. Status of RCRA Sites, July-September 1996.

Site	Sampled July-Sept 1996	Statistical exceedance
Indicator Evaluation Sites [40 CFR 265.93(b)] (sampled semiannually)		
100-D Ponds	Yes	No
1301-N Facility	Yes	No
1325-N Facility	Yes	No
1324-N/NA Site	Yes	Yes (conductivity)
A-29 Ditch	No	Not applicable
A-36B Crib	No	Not applicable
A-10 Crib	No	Not applicable
B-63 Trench	No	Not applicable
S-10 Pond and Crib	No	Not applicable
LERF	No	Not applicable
LLBG WMA 1	No	Not applicable
LLBG WMA 2	No	Not applicable
LLBG WMA 3	Yes	No
LLBG WMA 4	No	Not applicable
SST WMA A-AX	Yes	No
SST WMA C	Yes	No
SST WMA U	Yes	Yes (TOX)
NRDWL	Yes	No

Groundwater Quality Assessment Sites [40 CFR 265.93(d)] (sampled quarterly)		
Seven sites <sup>a</sup>	X	Not required
Final Status Compliance Site (WAC 173-303-645)		
183-H Basins <sup>b</sup>	X	Not applicable

LLBG = Low-Level Burial Grounds

SST = Single-Shell Tanks

WMA = Waste Management Area

<sup>a</sup> B-Pond, U-12 Crib, SST WMA B-BX-BY, SST WMA S-SX, SST WMA T, SST WMA TX-TY, 300 Area Process Trenches.

<sup>b</sup>Sampled semiannually with four independent samples (i.e., Sept-Oct-Nov-Dec; Mar-Apr-May-Jun). Statistical evaluations will be performed after data from all four independent samples received.