



# United States Department of the Interior

U. S. GEOLOGICAL SURVEY

Box 25046 M.S. 974

Denver Federal Center

Denver, Colorado 80225

IN REPLY REFER TO:

March 24, 2005

U.S. Nuclear Regulatory Commission

ATTN: Alexander Adams

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*Phone deck  
50-274*

Gentlemen:

This letter is in response to our telephone conversation earlier today concerning ground water contamination from chemicals on the Denver Federal Center. I am submitting herein the following table of analytical results from ground water samples taken near the reactor facility. The sampling well is located downstream of the reactor tank. Only one sample (6/4/02) has a result slightly greater (40 pCi/l) than the MDA/LLD and we believe that result is an aberration that does not reflect the actual non-detectable tritium concentration in the water. In comparison, the 10 CFR 20, Appendix B Table 2, Col 2 value for tritium in water effluent is 0.001  $\mu\text{Ci/ml}$  or 1,000,000 pCi/l.

The well water is only analyzed for tritium because that is the only significant reactor-produced radionuclide that is in the reactor tank water. The tritium concentration in the reactor tank water is normally about 100,000 pCi/l while the gross alpha/beta concentration is <25 pCi/l. Normal potable water in the Denver area contains a gross alpha/beta concentration of ~ 10 pCi/l. Since the tritium is also "water soluble", it provides the most sensitive indicator of possible reactor leakage into ground water.

Sincerely,

*Tim DeBey*

Tim DeBey  
Reactor Supervisor

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 3/24/05

*Tim DeBey*

A020

USGS Well water Samples 12-1996 thru 12-2004

| Sample Date | Depth   | Result pCi/l | MDA / LLD pCi/l |
|-------------|---------|--------------|-----------------|
| 12/6/1996   | 20' 2"  | 121+315      | 520             |
| 6/3/1997    | 22' 8"  | 95 + 265     | 440             |
| 12/1/1997   | 20' 5"  | 152 + 226    | 370             |
| 6/9/1998    | 21' 5"  | 3 + 180      | 300             |
| 12/1/1998   | 21' 0"  | 0+ 225       | 380             |
| 6/1/1999    | 21' 2"  | 64+ 219      | 360             |
| 12/1/1999   | 20' 10" | 64+220       | 400             |
| 6/1/2000    | 21' 5"  | 51+ 230      | 400             |
| 12/6/2000   | 20' 7"  | 18+ 240      | 400             |
| 6/5/2001    | 21' 3"  | 20+ 100      | 180             |
| 12/11/2001  | 20' 3"  | 0+ 100       | 190             |
| 6/4/2002    | 22' 5"  | 540+ 500     | 500             |
| 12/4/2002   | 25' 0"  | 0+ 450       | 450             |
| 7/7/2003    | 22' 10" | 0+ 470       | 490             |
| 11/10/2003  | 22' 5"  | 150+ 450     | 440             |
| 8/13/2004   | 24' 9"  | 40+ 310      | 310             |
| 12/15/2004  | 20' 0"  | 184+ 165     | 288             |