



Department of Energy
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OCT 07 2003

Mr. James A. Saric, Remedial Project Manager
United States Environmental Protection Agency
Region V, SR-6J
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DOE-0008-04

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Ms. Val Orr
Ohio Environmental Protection Agency
Division of Drinking and Ground Waters – UIC Unit
P.O. Box 1049
Columbus, OH 43216-1049

Dear Mr. Saric, Mr. Schneider, and Ms. Orr:

**SECOND QUARTER 2003 RE-INJECTION OPERATING REPORT FOR THE FERNALD
CLOSURE PROJECT**

The purpose of this letter is to transmit the Second Quarter 2003 Re-Injection Operating Report for the Fernald Closure Project (FCP) for the United States Environmental Protection Agency (USEPA) and Ohio Environmental Protection Agency's (OEPA) review and approval. The quarterly reporting format replaced the previous monthly reporting, with the OEPA concurrence, beginning with Second Quarter 2002 reporting.

If you have any questions regarding this report, please contact Dave Lojek of my staff at 513-648-3127.

Sincerely,

Glenn Griffiths
Acting Director

FCP:Lojek

Enclosure: As Stated

OCT 07 2003

Mr. James A. Saric
Mr. Tom Schneider
Ms. Val Orr

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DOE-0008-04

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cc w/enclosure:

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SECOND QUARTER 2003
RE-INJECTION OPERATING REPORT

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Re-injection at Fernald is exempted under 40 CFR 300.400(e)(1) from requiring a permit, as it is a CERCLA action. Ohio EPA Guidelines (OEPA 1997), suggest monthly operating reports be submitted that include:

- I. An analysis of the injectate
 - Composite daily total uranium results from the injectate source (AWWT Expansion Facility effluent) for days when re-injection occurred are shown in Figure 1.
 - The monthly grab sample results for the second quarter 2003 are provided in Table 1.
- II. The volume and rate of re-injection
 - Table 2 summarizes second quarter 2003 operational data.
- III. A description of any well maintenance and rehabilitation procedures conducted.
 - No well maintenance or rehabilitation occurred in April, May, June 2003.

DOE has submitted the monthly reports since re-injection began in September 1998 through March 2002. Due to the routine nature of the reports, DOE and Ohio EPA agreed in March 2002 that the monthly information would be provided in quarterly reports beginning with the report for the second quarter 2002.

Routine monitoring of the aquifer in the re-injection area is conducted as part of the groundwater remedy performance-monitoring program specified in Fernald's Integrated Environmental Monitoring Plan (IEMP). Results of the IEMP are reported semi-annually and are available for viewing on the Fernald website, www.fernald.gov. In 2002, Re-Injection Wells 8 and 9 were replaced with new wells, 8a and 8b. These two replacement wells began operating in November 2002. A new re-injection well (IW-10a) began operating on May 22, 2003. This new well is located between IW-10 and IW-11. Location of the re-injection wells is shown in Figure 2.

ANALYSIS OF THE INJECTATE

No constituents exceeded their FRLs. Outages for the 2nd quarter of 2003 are explained in Figure 1.

The following total uranium concentrations were measured in the monthly grab and daily composite samples, respectively:

- April 29, 2003: 3.09 micrograms per liter ($\mu\text{g/L}$) and 2.8 $\mu\text{g/L}$
- May 28, 2003: 5.2 micrograms per liter ($\mu\text{g/L}$) and 6.7 $\mu\text{g/L}$
- June 17, 2003: 1.67 micrograms per liter ($\mu\text{g/L}$) 1.6 $\mu\text{g/L}$.

TABLE 1
ANALYSIS OF INJECTATE

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Constituents ^a	Results ^b			Groundwater FRL ^c	Constituent Type ^e	Basis for FRL ^f
	Apr. 29, 2003	May 28, 2003	June 17, 2003			
General Chemistry				mg/L		
Nitrate	1 J	0.953 J	0.918 J	11.0	MP	B
Inorganics				mg/L		
Antimony	U	U	U	0.006	N	A
Arsenic	U	U	U	0.05	N	A
Barium	0.0586 BJ	0.0486 B	0.0542 B	2.0	N	A
Beryllium	U	U	U	0.004	N	A
Cadmium	U	U	U	0.014	N	B
Chromium, total	0.00026 JB	U	U	0.022 ^d	MP	R
Cobalt	U	U	U	0.17	N	R
Lead	U	U	U	0.015	N	A
Manganese	0.000071 BJ	0.00428 B	0.00228 B	0.9	N	B
Mercury	U	U	U	0.002	MP	A
Nickel	0.00057 JB	0.00355 J	U	0.1	N	A
Selenium	U	U	U	0.05	N	A
Silver	U	U	U	0.05	N	R
Vanadium	U	U	U	0.038	N	R
Zinc	U	U	U	0.021	N	B
Radionuclides				pCi/L		
Neptunium-237	U	U	U	1.0	MP	R*
Radium-226	0.408	U	0.833	20.0	N	A
Strontium-90	U	U	U	8.0	MP	A
Thorium-228	U	U	U	4.0	N	R*
Thorium-232	0.0462	0.01	U	1.2	N	R*
Uranium, total				µg/L		
Uranium, total	3.09	5.2	1.67	30.0	MP	A
Organics				µg/L		
Bis(2-ethylhexyl)phthalate	U	U	1.81 J	6.0	N	A
Carbon disulfide	U	U	2.23	5.5	N	A
1, 1-Dichloroethene	U	U	U	7.0	N	A
1, 2-Dichloroethane	U	U	U	5.0	MP	A
Trichloroethene	U	U	U	5.0	N	A

Results Qualifiers: U = Nondetected result, B (inorganics) = Reported result is greater than the instrument detection level but less than the contract required detection limit, B (organics) = The compound is detected in an associated lab blank. J = Reported result is positively detected but is estimated; the result is still usable for making decisions.

^aConstituents taken from Table 2-1 of the Re-Injection Demonstration Test Plan, and are those previously detected in Aquifer Zones 2 and 4 at concentrations above their FRL.

^bIf a duplicate sample was analyzed, then the highest concentration between the regular sample and duplicate sample is reported.

^cFrom Table 9-4 in the Operable Unit 5 Record of Decision Report. NS = Not Sampled

^dFRL is for hexavalent chromium.

^eConstituent types from Appendix A of IEMP. MP indicates that the constituent has been identified as being able to migrate to the aquifer. N indicates that the constituent has been identified as not being able to migrate to the aquifer.

^fA - Applicable or relevant and appropriate requirement based (MCL, PMCL, etc.), B - Based on 95th percentile background concentrations, R - Risk-based, R* - Risk-based radionuclide cleanup levels include constituent specific 95th percentile background concentration.

TABLE 2

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RE-INJECTION WELL OPERATIONAL SUMMARY SHEET
SECOND QUARTER 2003

Well Number	Reporting Period (hours) ^a	Hours Not Injecting ^b	Hours Injecting ^c	Operational Percent ^d	Million Gallons Injected ^e	Target /Average ^f Operating Injection Rate (gpm)
33253 (IW-8a)	2184	1264	920	42.1	9.761	200 / 177
33254 (IW-9a)	2184	970	1214	55.6	13.481	200 / 185
22109 (IW-10)	2184	970	1214	55.6	13.320	200 / 183
33255 (IW-10a)	2184	625	839	38.4	9.527	200 / 189
22240 (IW-11)	2184	946	1238	56.7	13.053	200 / 176
22111 (IW-12)	2184	1139	1045	47.8	9.661	200 / 154

^aFirst operational shift reading on April 1, 2003 to first operational shift reading on July 1, 2003.

^bSystem downtime as noted on Figure 1.

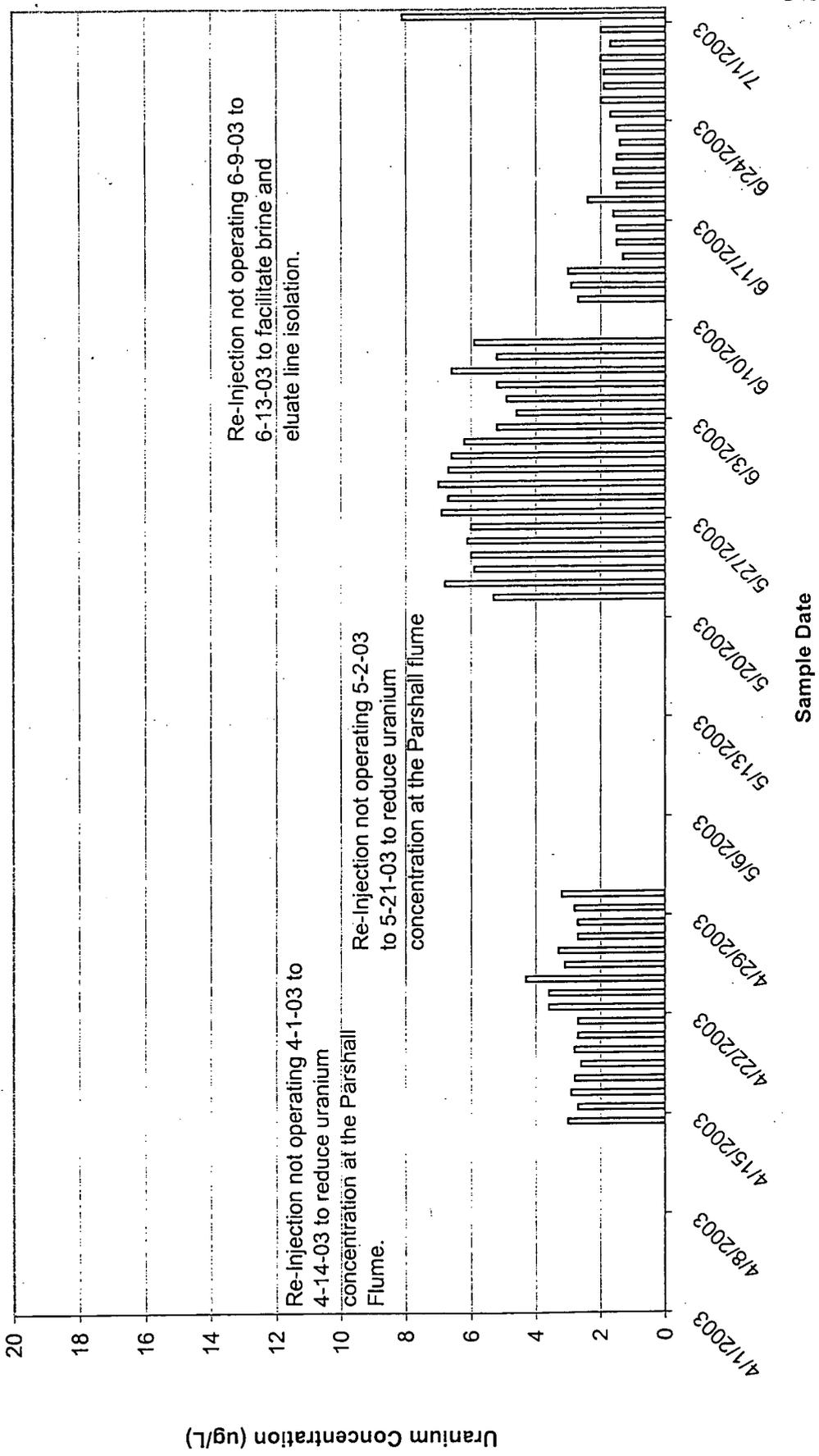
^cHours in reporting period - Hours not injecting

^d(Hours injecting/Hours in reporting period) x 100

^eSummation of daily totalizer differences

^fGallons Injected/(Hours Injecting x 60)

Figure 1
Daily Composite Uranium Results from AWWT Expansion System
Days when Re-Injection Occurred

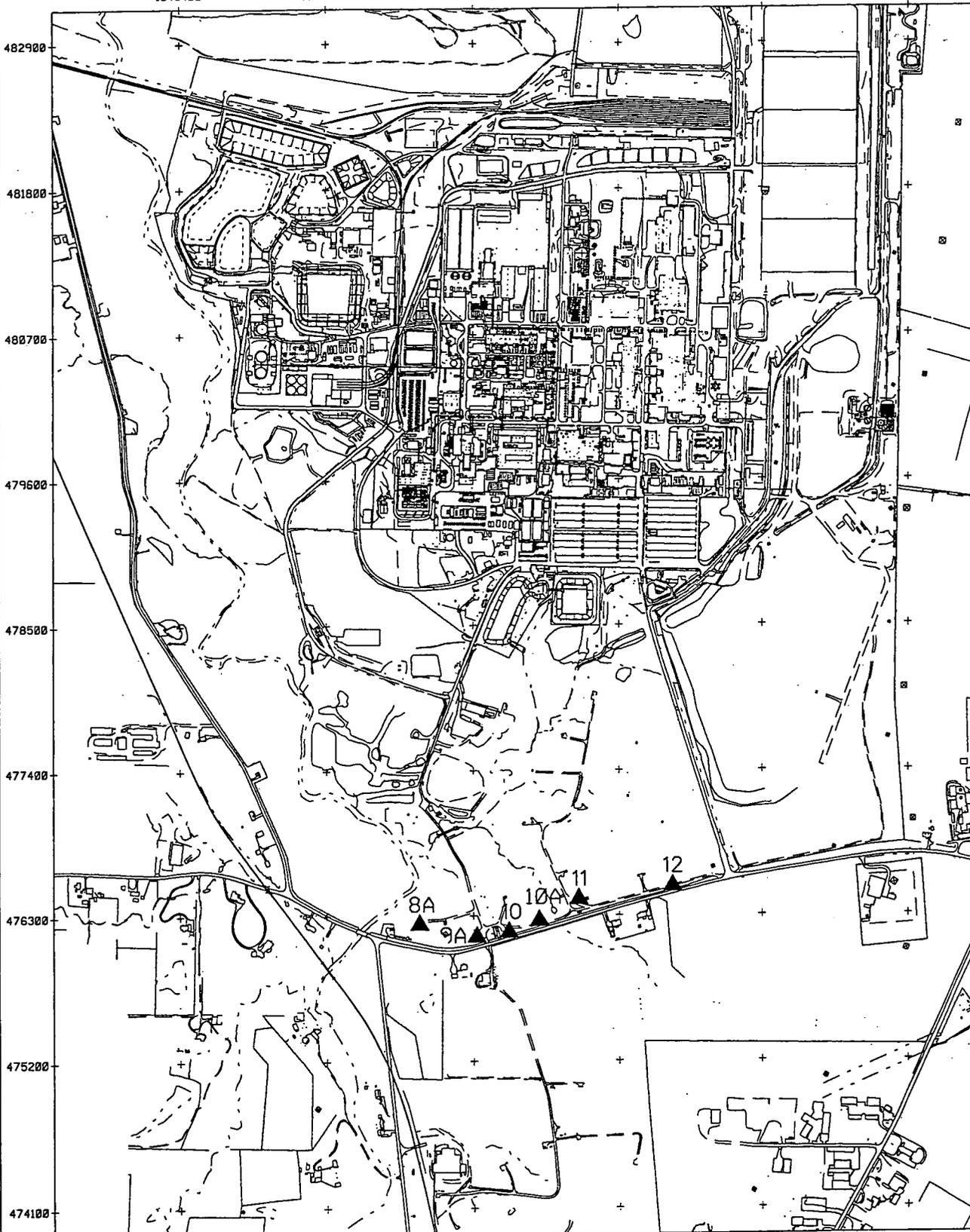


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STATE PLANAR COORDINATE SYSTEM 1983

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LEGEND:

- FCP BOUNDARY
- ▲ RE-INJECTION WELL

SCALE



FIGURE 2. LOCATION OF RE-INJECTION WELLS