0049244

Department of Energy
Richland Operations Office
P.O. Box 550
Richland, Washington 99352

98-EAP-247

MAY 12 1998

Ms. J. J. Wallace
300 Area Project Manager
State of Washington
Department of Ecology
1315 West Fourth Avenue
Kennewick, Washington 99336

MAY 1998
RECEIVED
EDMC

Dear Ms. Wallace:

TRANSMITTAL OF SUPPORTING DOCUMENTS FOR THE 324 BUILDING RADIOCHEMICAL ENGINEERING CELLS, HIGH-LEVEL VAULT (HLV), LOW-LEVEL VAULT (LLV), AND ASSOCIATED AREAS CLOSURE PLAN (324 Closure Plan)

Attached are supporting documents to the 324 Closure Plan. Attachment 1-3 includes the data summary packages and laboratory analytical information related to sampling and analyses events that were described in the 324 Closure Plan. The three attachments are analytical results from 1) the 1995 sampling of the collected B-Cell dispersible debris; 2) the 1990 sampling of the HLV and LLV tank contents; and 3) the 1996 sampling of the HLV tank contents. The results include summary data packages, chemists' bench sheets, and other relevant laboratory information provided by the Pacific Northwest National Laboratory (PNNL) 325 Laboratory.

Attachment 4-7 is supporting information for Chapter 5, Groundwater Monitoring. This includes 4) Uranium trend plots of wells within 305m of the 324 Building; 5) Strontium-90 trend plots for the wells within 305m of the 324 Building; 6) Data results for wells 399-8-2 and 399-1-18A upgradient and greater than 305m of the 324 building; and 7) Data results for the 18 wells within 305m of the 324 Building.

MAY 12 1998

Should you have any questions regarding this transmittal, please call Ellen Mattlin, of my staff, on (509) 376-2385.

Sincerely,

James E. Rasmussen, Director
Environmental Assurance, Permits,
and Policy Division

EAP:EMM

Attachments 7

cc w/attach:
Administrative Record
J. K. Bartz, Ecology

cc w/o attach:
J. R. Wilkinson, CTUIR
R. M. Milliken, BWHC
A. M. Hopkins, FDH
D. L. Powaukee, NPT
R. C. Bowman, WMH
A. L. Prignano, WMH
R. Jim, YIN

Attachment 1:

1995 B-Cell Dispersible Debris Analytical Results

The following two analytical reports were prepared by the PNL 325 Laboratory. The reports contain data for the samples collected from the ten engineered containers (EC) used to collect dispersible material from the B-Cell floor. The containers were labeled EC-14, EC-15, EC-16, EC-17, EC-19, EC-21, EC-22, EC-23, EC-24, and EC-25. The samples were collected an analyzed 1995. The first report contains data from the EC-15 and EC-19 samples. The second report contains data from the remaining container samples.

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Battelle
Pacific Northwest Laboratories

T3.12.2
Dispersible
Results

Project Number 13802

Internal Distribution

KJ Kuhl-Klinger
RT Steele
MW Urie
LR Greenwood
KJ Smith
File/LB

Date December 1, 1995

To PJ Weaver

From IC Henry ICH

Subject Analysis of 324 B-Cell Samples

Four samples were submitted for analysis of TCLP metals by ICP, radiochemistry (GEA, alpha, beta, Pu/AEA, Sr-90), and pH. Attached, you will find a five page report outlining the TCLP data and two tables summarizing the radiochemistry data. The pH data is outlined below:

ACL#	ID	pH
96-00670	15A	8.6
96-00670Dup	15A	8.6
96-00671	15B	8.4
96-00672	19A	8.5
96-00673	19B	8.7

The pH analysis was performed on the solution derived from leaching 0.5 grams of sample material with 5 grams of water for 15 minutes.

Please contact me if you have questions or concerns.

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DEC 05 1995
P. J. WEAVER

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P. J. WEAVER

E54-1900-001 (10/89)

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

Project/WO: 13802/K41546
Client: PJ Weaver
Impact Level: II

ACL Number

96-000670 through 96-000673

"15A" through "19B"

ASR Number: 002587 (4 samples)

Procedure: PNL-ALO-211, "Determination of Elements by Inductively Coupled Argon Plasma Atomic Emission Spectrometry" (ICP-AES).

Analyst: DR Sanders

Analysis Date (Filename): 11/2/95 (A0020)

See ALO System File: "ICP-325-405-1" for traceability to Calibration, Quality Control, Verification, and Raw Data.

M&TE Number: ICPAES instrument -- WB73520
Mettler AT400 Balance -- Ser.No. 360-06-01-029

11-21-95
Reviewed by

11-22-95
Concur

11/21/95

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

Four radioactive samples and quality control standards were analyzed by ICPAES after being prepared by 325 SAL-SRPL lab using PNL-ALO-128 acid digestion procedure on the TCLP extracts. Acid digestion of the extracts were diluted 1.25 fold before analysis. Final results have been corrected for dilution.

None of the TCLP analytes measured exceed regulatory limits.

Analytes measured included Silver, Arsenic, Barium, Cadmium, Chromium, Lead, and Selenium.

Spike recoveries for all TCLP analytes were within tolerance except Silver (spike recovery approx. 50%). Low spike recoveries for silver using the TCLP method has been well documented in the literature. Even if the measurement results for Silver were doubled (accounting for the 50% spike recovery) the concentrations so calculated would still be below TCLP regulatory limit. Also noted was poor relative percent difference between acid digestion duplicate on sample 96-000670 (Client ID "15A"). All analyte concentrations above detection limit, varied between 16 and 50% RPD (Relative Percent Difference). The reason for this is unknown. RPD for both sample splits (true duplicate samples) were much better (by a factor of 2 or more).

Below is a "TCLP" Table. Concentrations (bolded print) are listed when TCLP limits are exceeded or analyte detection limit concentration when the regulatory limit is not exceeded.

See attached "ICPAES Data Report" for additional analyte measurement results, detection limits, and etc. Please note, bracketed values listed in the ICPAES Data Report are within ten times instrument detection limit. Those measurement values have a potential uncertainty much greater than 15%.

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

Comments:

1) "Final Results" have been corrected for all laboratory dilutions performed on the sample during processing and analysis.

2) Detection limits (DL) shown are for acidified water. Detection limits for other matrices may be determined if requested.

3) Routine precision and bias is typically ± 15% or better for samples in dilute, acidified water (eg. 2% v/v HNO_3 or less) at analyte concentrations greater than ten times detection limit up to the upper calibration level. This also presumes that the total dissolved solids concentration in the sample is less than 5000 µg/mL (0.5 per cent by weight).

4) Absolute precision, bias and detection limits may be determined on each sample if required by the client.

5) The maximum number of significant figures for all ICP measurements is 2.

6) To convert "WT%" to "mg/Kg" or "µg/g", multiply concentration value by 10,000.

7) To convert "mg/Kg" or "µg/g" to "WT%", divide concentration value by 10,000.

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

"TCLP" Table. Detection limit is listed when TCLP regulatory limit is NOT exceeded, and a concentration value is listed when a TCLP regulatory limit IS exceeded.

Analyte=			Ag	As	Ba	Cd	Cr	Pb	Se
Measurement Units=			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TCLP Reg.Limit=			5.00	5	100	1	5	5	1
Instrument Detection Limit=			0.015	0.03	0.01	0.015	0.02	0.05	0.1
Multiplier	ACL #	Client ID							
1.25	95-000570	15A	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13
1.25	95-000571	15B	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13
1.25	95-000572	19A	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13
1.25	95-000573	19B	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13

Note: The "TCLP" result table above list "less than" values adjusted for instrument detection limit and sample preparation dilution.
Bolded values, where shown, are sufficiently above detection limit and exceed TCLP regulation limits.

11/21/95

Det. Limit (ug/mL)	Multiplier= / ALO#= / Client ID= / Run Date= / (Analyte)	1.3 / 96-000670 / 15A / 11/2/95 / (ug/mL)	1.3 / 96-000671 / 15B / 11/2/95 / (ug/mL)	1.3 / 96-000672 / 19A / 11/2/95 / (ug/mL)	1.3 / 96-000673 / 19B / 11/2/95 / (ug/mL)
0.015	Ag	[0.05]	[0.05]	--	--
0.050	Al	0.78	1.05	0.8	[0.7]
0.080	As	[0.37]	[0.42]	[0.2]	[0.2]
0.020	B	29.35	34.40	20.4	20.6
0.010	Ba	0.43	0.43	0.4	0.4
0.005	Be	--	--	--	--
0.100	Bi	[0.21]	[0.24]	--	--
0.050	Ca	920	958	754	778
0.015	Cd	[0.12]	[0.13]	[0.2]	[0.2]
0.100	Ce	[0.28]	[0.30]	[0.2]	[0.1]
0.010	Co	[0.07]	[0.08]	[0.1]	[0.1]
0.020	Cr	[0.22]	0.29	0.3	0.3
0.010	Cu	1.45	1.69	1.4	1.7
0.050	Dy	--	--	--	--
0.100	Eu	--	--	--	--
0.020	Fe	0.50	0.69	0.6	0.5
2.000	K	29.79	33.79	[21.9]	[23.4]
0.050	La	--	--	--	--
0.030	Li	[0.24]	[0.26]	[0.2]	[0.3]
0.100	Mg	18.97	21.92	15.9	15.9
0.005	Mn	3.18	3.67	4.9	5.1
0.030	Mo	1.99	2.17	1.4	1.7
0.080	Na	1630	1690	1500	1520
0.050	Nd	[0.38]	[0.38]	[0.2]	[0.2]
0.030	Ni	2.30	2.52	4.5	4.6
0.100	P	1.27	1.47	[0.7]	[0.7]
0.060	Pb	[0.32]	[0.38]	[0.3]	[0.4]
0.300	Pd	[0.57]	[0.64]	--	--
0.300	Rh	--	--	--	--
0.100	Ru	[0.17]	[0.20]	--	--
0.050	Sb	[0.58]	0.64	[0.3]	[0.3]
0.100	Se	[0.24]	[0.30]	[0.1]	[0.1]
0.500	Si	37.05	42.08	22.8	21.3
1.000	Sn	--	--	--	--
0.005	Sr	8.55	9.20	7.0	6.8
0.500	Te	--	--	--	--
0.800	Th	--	--	--	--
0.005	Ti	0.07	0.09	[0.0]	[0.0]
0.500	Tl	--	--	--	--
2.000	U	[20.18]	[21.88]	[12.2]	[14.4]
0.010	V	[0.10]	[0.11]	[0.0]	[0.0]
0.500	W	--	--	--	--
0.010	Y	[0.04]	[0.04]	[0.0]	[0.0]
0.020	Zn	1.38	1.57	3.6	3.7
0.010	Zr	[0.06]	[0.08]	[0.0]	[0.0]

Note: 1) Overall error greater than 10-times detection limit is estimated to be within +/- 15%.
2) Values in brackets [] are within 10-times detection limit with errors likely to exceed 15%.
3) "--" indicate measurement is below detection. Sample detection limit may be found by multiplying "det. limit" (far left column) by "multiplier" (top of each column).

Battelle Pacific Northwest Laboratory
Analytical Chemistry Laboratory
Radiochemistry Group - 325 Bldg.

96-00670
11/29/95

Client: Weaver
Wpit: K41546

Cognizant Scientist: Richard T. R

Date: 11/29/95

Review: T Trang-Le

Date: 11/29/95

Measured Activities (microCuries/g)

ALO ID Client ID	GEA Filename	Total Alpha Error +/-	Pu-238+ Am-241 Error +/-	Cm-243+Cm-244 Error +/-	Pu-239 Error +/-	Total Beta Error +/-	Cs-137 Error +/-	Eu-154 Error +/-	Am-241 Error +/-
96-00670 15A	T2020	1.04E 1 8%	7.58E 0 14%	2.82E 0 18%	<8. E-1	2.68E 4 4%	1.47E 4 2%	<4. E 0	<2. E 1
96-00670-PB Process Blank	G0182	8.54E-3 24%	4.60E-3 50%	3.94E-3 50%	<2. E-3	4.60E-1 5%	3.19E-1 2%	<3. E-3	<4. E-3
96-00671 15B	T2011	1.06E 1 8%	7.55E 0 12%	3.05E 0 16%	<6. E-1	2.49E 4 4%	1.48E 4 2%	<4. E 0	<2. E 1
96-00672 19A	T2012	1.92E 1 7%	1.22E 1 10%	5.65E 0 13%	1.40E 0 31%	2.25E 4 4%	1.31E 4 2%	9.20E 0 9%	1.36E 1 34%
96-00672-Dup 19A Dup	T2013	2.39E 1 6%	1.51E 1 10%	6.48E 0 13%	2.89E 0 21%	2.48E 4 4%	1.43E 4 2%	1.20E 1 7%	1.31E 1 33%
96-00673 19B	T2014	1.77E 1 7%	1.17E 1 10%	5.22E 0 13%	7.38E-1 34%	2.33E 4 4%	1.35E 4 2%	8.08E 0 10%	<2. E 1
Standard		94%				94%			
Matrix Spike 96-00673		95%				88%			
Blank		<3. E-5				<1. E-3			

DATA REPORT 11/ 30/ 95
PNL Analytical Chemistry Lab.
Radioanalytical Group, 325 Building

Client: WEAVER
WP #: K41546

Cognizant scientist: L R Greenwood Date: 12-1-95

Reviewer: D. K. Sedoff Date: 12/1/95

ALO #	Customer ID	Sr-90 uCi/g Error %
96-00670-PB	PROCESS BLANK	<1. E-1
96-00670	15A	5.30E 3 7%
96-00671	15B	4.91E 3 8%
96-00672	19A	3.92E 3 8%
96-00672-D	19A DUPLICATE	4.89E 3 8%
96-00673	19B	4.43E 3 8%
STD-2587		96%
Blank Spike w/96-00670-PB		103%
Blank		<1. E-1

Baffelle
Pacific Northwest Laboratories

Project Number 13802

Internal Distribution

KJ Kuhl-Klinger
RT Steele
MW Urie
LR Greenwood
KJ Smith
File/LB

Date December 6, 1995

To PJ Weaver

From IC Henry ICH

Subject Analysis of 324 B-Cell Samples

Attached you will find a revised table outlining the ICP data pertaining to your four 324 B-Cell samples, please discard the original table. The detection limits listed on the original table were erroneously "Bolded", which is meant to indicate a TCLP limit has been exceeded. This was not the case with your samples; all of the analytes of interest were below the limits stated on the summary table.

I apologize for any confusion this may have caused. If you have any questions or concerns, please contact me at your convenience.

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DEC 08 1995
P. J. WEAVER

ES4-1900-001 (10/89)

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

"TCLP" Table. A concentration value (bolded) is entered in the table whenever a TCLP limit is exceeded otherwise a detection limit preceded by a "<" symbol is entered.

Analyte=			Ag	As	Ba	Cd	Cr	Pb	Se
Measurement Units=			(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
TCLP Reg.Limit=			5.00	5	100	1	5	5	1
Instrument Detection Limit=			0.015	0.05	0.01	0.015	0.02	0.05	0.1
Multiplier	ACL #	Client ID							
1.25	95-000670	15A	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13
1.25	95-000671	15B	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13
1.25	95-000672	19A	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13
1.25	95-000673	19B	<0.02	<0.1	<0.01	<0.02	<0.03	<0.08	<0.13

Note: The "TCLP" result table above list "less than" values adjusted for instrument detection limit and sample preparation dilution.

Bolded values, where shown, are sufficiently above detection limit and exceed TCLP regulation limits.

12/5/95

12-5-95

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

Project/WO: 13802/K27289
Client: JK Larsen
Impact Level: II

ALO Log-In Number

95-007348 through 95-007363

"14A" through "25B"

(16 samples)

Procedure: PNL-ALO-211, "Determination of Elements by Inductively Coupled Argon Plasma Atomic Emission Spectrometry" (ICP-AES).

Analyst: DR Sanders

Analysis Date (Filename): 08/04/95 (95D216A) and 08/09/95 (95D221A)

See ALO System File: "ICP-325-405-1" for traceability to Calibration, Quality Control, Verification, and Raw Data.

M&TE Number: ICPAES instrument -- WB73520
Mettler AT400 Balance -- Ser.No. 360-06-01-029

Jerry Wagner 8-10-95
Reviewed by

MW Nin 8-11-95
Concur

8/10/95

Battelle PNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

ICPAES analysis was performed on the TCLP acid digested extracts generated in the Shielded Analytic Laboratory and prepared in two batches. All samples were extracted at a 20:1 ratio. Based upon the results of the ICPAES analysis, several TCLP metals exceed the TCLP Regulatory Threshold in several of the samples.

Batch #1 (samples 14A through 21B):

The analytical QC samples (i.e. ICV/CCV) were within acceptable limits (i.e., ± 10%). Sample spike recoveries for Ag, As, Ba, Cd, Cr, Pb and Se on sample 17A were 32%, 104%, 108%, 110%, 106%, 107% and 113%, respectively. The Laboratory Control Standard (i.e., the Blank Spike) had analyte recoveries within acceptable limits (i.e., 85-115%), except Ag, which recovered at 34%. Since there was no Ag detected above the instrument detection limit (which is 200 times below the Regulatory Threshold) and the recoveries of the LCS and matrix spike are consistent, the Ag data is considered acceptable.

Batch #2 (samples 22A through 25B):

The analytical QC samples (i.e. ICV/CCV) were within acceptable limits (i.e., ± 10%). Sample spike recoveries for Ag, As, Ba, Cd, Cr, Pb and Se on sample 24A were 49%, 99%, 113%, 105%, 104%, 125% and 111%, respectively. The Laboratory Control Standard (i.e., the Blank Spike) had analyte recoveries within acceptable limits (i.e., 85-115%), except Ag, which recovered at 25%. Since there was no Ag detected above the instrument detection limit (which is 200 times below the Regulatory Threshold) and the recoveries of the LCS and matrix spike are consistent, the Ag data is considered acceptable. The high Lead spike recovery in the matrix spike is rendered meaningless because of the high concentration of Lead (54 µg/mL) in the sample (10 times higher than the spike concentration) and 10 times higher than the Regulatory Threshold. Lead spike recovery in the LCS was 105%, well within acceptable limits.

A summary of values found in the samples is presented in table form on the following page.

8/10/95

Summary of TCLP ICPAES Results (ug/mL)

ACL Number	Sample ID	Ag	As	Ba	Cd	Cr	Pb	Se
TCLP Limit	ug/mL==>	5	5	100	1	5	5	1
95-007348	14A	ND	ND	0.70	0.38	(0.10)	ND	ND
95-007349	14B	ND	ND	0.58	(0.31)	(0.05)	(0.18)	ND
95-007350	16A	ND	ND	1.60	0.99	0.92	7.2	ND
95-007351	16B	ND	(0.34)	2.00	1.00	0.82	62	ND
95-007352	17A	ND	ND	1.10	0.74	1.20	2.9	ND
95-007353	17B	ND	ND	0.97	0.72	1.00	4.6	ND
95-007354	21A	ND	ND	1.50	0.90	(0.40)	15	ND
95-007355	21B	ND	ND	1.50	0.90	(0.30)	11	ND
95-007356	22A	ND	(0.21)	1.70	0.62	(0.26)	54	ND
95-007357	22B	ND	ND	1.20	0.56	(0.25)	1.7	ND
95-007358	23A	ND	ND	0.95	0.52	(0.29)	5.4	ND
95-007359	23B	ND	(0.23)	1.10	0.78	(0.31)	22	ND
95-007360	24A	ND	(0.30)	1.20	(0.36)	6.4	64	(0.7)
95-007361	24B	ND	(0.25)	0.74	(0.37)	6.1	15	(0.6)
95-007362	25A	ND	ND	1.00	0.60	(0.30)	6.9	ND
95-007363	25B	ND	ND	1.00	0.60	(0.30)	3	ND
TCLP Ext Blk	TCLP Blank(1)	ND	ND	ND	ND	ND	ND	ND
TCLP Ext Blk	TCLP Blank(2)	ND	ND	ND	ND	ND	ND	ND
Prep Blank	Prep Blank(1)	ND	ND	ND	ND	ND	ND	ND
Prep Blank	Prep Blank(2)	ND	ND	ND	ND	ND	ND	ND
IDL	ug/mL==>	0.02	0.20	0.02	0.01	0.05	0.15	0.25

ND = Not Detected above IDL

(xx.x) = Results >IDL but < MDL; MDL = 10 * IDL

8/10/95

Container Number	Total Alpha		Pu-238		Pu-239/240		Total Beta		Sr-90	
	uCi/g	Total Ci	uCi/g	Total Ci	uCi/g	Total Ci	uCi/g	Total Ci	uCi/g	Total Ci
14	2.31E+01	2.52E+00	1.39E+00	1.52E-01	1.02E+00	1.11E-01	2.19E+04	2.39E+03	7.16E+03	7.82E+02
16	1.13E+01	9.59E-01	6.63E-01	5.63E-02	4.51E-01	3.83E-02	2.41E+04	2.05E+03	6.82E+03	5.79E+02
17	1.21E+01	1.19E+00	8.95E-01	8.79E-02	6.26E-01	6.15E-02	2.70E+04	2.65E+03	5.62E+03	5.52E+02
21	1.51E+01	1.82E+00	8.35E-01	1.01E-01	6.20E-01	7.49E-02	3.18E+04	3.84E+03	9.30E+03	1.12E+03
22	1.87E+01	1.85E+00	1.58E+00	1.56E-01	1.00E+00	9.87E-02	3.50E+04	3.45E+03	8.08E+03	7.97E+02
23	3.20E+01	3.16E+00	2.02E+00	1.99E-01	1.39E+00	1.37E-01	3.13E+04	3.09E+03	7.79E+03	7.69E+02
24	3.53E+00	3.64E-01	3.27E-01	3.37E-02	1.72E-01	1.77E-02	2.33E+04	2.40E+03	6.13E+03	6.32E+02
25	3.00E+01	3.69E+00	2.24E+00	2.75E-01	1.56E+00	1.92E-01	2.79E+04	3.43E+03	7.80E+03	9.58E+02
Average	1.82E+01	1.94E+00	1.24E+00	1.33E-01	8.55E-01	9.14E-02	2.78E+04	2.91E+03	7.34E+03	7.74E+02

Container Number	Cs-137		Eu-154		Am-241		Cs/Sr Ratio
	uCi/g	Total Ci	uCi/g	Total Ci	uCi/g	Total Ci	
14	8.43E+03	9.21E+02	1.05E+01	1.15E+00	1.25E+01	1.37E+00	1.177374302
16	1.12E+04	9.51E+02	5.57E+00	4.73E-01	5.88E+00	4.99E-01	1.642228739
17	1.53E+04	1.50E+03	6.03E+00	5.92E-01	9.25E+00	9.08E-01	2.722419929
21	1.29E+04	1.56E+03	7.67E+00	9.27E-01	8.93E+00	1.08E+00	1.387096774
22	1.75E+04	1.73E+03	7.91E+00	7.81E-01	1.00E+01	9.87E-01	2.165841584
23	1.44E+04	1.42E+03	1.41E+01	1.39E+00	1.73E+01	1.71E+00	1.848523748
24	1.02E+04	1.05E+03	1.41E+00	1.45E-01	4.29E+00	4.42E-01	1.663947798
25	1.22E+04	1.50E+03	1.33E+01	1.63E+00	1.52E+01	1.87E+00	1.564102564
Average	1.28E+04	1.33E+03	8.31E+00	8.86E-01	1.04E+01	1.11E+00	1.77E+00

Dispersible Containers

Container Identification Number	Tare Weight (KG)	Gross Weight (KG)	Net Weight (KG)	Contact Dose Rate (Roentgen/hr)	Instrument/ Calibration Date	Initials/Date
014	106.3	215.52	109.22	1570	See Note 1: and See Note 2:	DGJ / 8/7/95
015	105.4	181.49	76.09	1860	See Note 1: and See Note 2:	DGJ / 8/7/95
016	106	190.9	84.9	5100	See Note 1: and See Note 2:	LJS / 8/8/95
017	106	204.2	98.2	3630	See Note 1: and See Note 2:	DGJ / 8/7/95
019	104.5	190.9	86.4	1025	See Note 1: and See Note 2:	LJS / 8/8/95
021	106	226.86	120.86	1740	See Note 1: and See Note 2:	DGJ / 8/7/95
022	105.5	204.2	98.7	1230	See Note 1: and See Note 2:	DGJ / 8/7/95
023	105.5	204.2	98.7	1820	See Note 1: and See Note 2:	DGJ / 8/7/95
024	106	209.09	103.09	4040	See Note 1: and See Note 2:	LJS / 8/8/95
025	104	226.86	122.86	1630	See Note 1: and See Note 2:	DGJ / 8/7/95

RLFCM Glass Containers

Container Identification Number	Tare Weight (KG)	Gross Weight (KG)	Net Weight (KG)	Dose Rate (Roentgen/hr)	Instrument/ Calibration Date	Initials/Date
11	124.4	294.9	170.5	20,000 at 12"	See Note 1: and See Note 2:	DGJ / 8/7/95
12	124.4	272.72	144.32	20,000 at 11"	See Note 1: and See Note 2:	LJS / 8/8/95
13	12.4	200.0	75.6	20,000 at 7"	See Note 1: and See Note 2:	LJS / 8/8/95

Note 1: 4000 lbs. Dillon – s/n 561-29-06-023 Calibration Expiration Date 10/10/95
Note 2: RO7 High Range Probe – s/n 6034 Calibration Expiration Date 1/7/96

pH ANALYSIS
(325 SHIELDED ANALYTICAL LABORATORY)

CLIENT: Pat Weaver WORK PACKAGE: K41546 ASR/ARF/LOI/TI: ASR #2257 Rev 1

QA PLAN: MCS-033 IMPACT LEVEL: II

324 B-Cell Dispersible Samples
SAMPLE IDENTIFICATION

ACL NUMBER	SAMPLE IDENTIFICATION	1st pH READING	2nd pH READING	pH AVERAGE
N/A	ICV # pH7 # 950355-24	7.04	7.05	
95-07348	14A	8.28	8.30	8.29
95-07348- DUP	14A Dup	8.49	8.50	8.50
95-07349	14B	8.26	8.27	8.26
95-07350	16A	8.26	8.24	8.25
95-07351	16B	8.48	8.42	8.45
95-07352	17A	8.13	8.13	8.13
95-07353	17B	8.12	8.10	8.11
95-07354	21A	8.47	8.50	8.49
95-07355	21B	8.65	8.63	8.64
N/A	CCV # 950355-24	6.96	6.98	6.97
95-07356	22A	8.26	8.27	8.26
95-07357	22B	8.34	8.38	8.36

CALIBRATION CHECK POINTS: 7 (Calib) / 10 (Calib) / 7 (Control) PROCEDURE: PNL-ALO-225

BUFFER LOT NUMBER: 950389-24 / 950253-24 / 950355-24

BUFFER EXPIRATION DATE: 1-97 / 1-97 / 2-97 M&TE: Corning #16627

Analyst: [signature] Date: 10/11/95 Reviewer: [signature] Date: 10/11/95

pH ANALYSIS
(325 SHIELDED ANALYTICAL LABORATORY)

CLIENT: Pat Weaver WORK PACKAGE: K41546 ASR/ARF/LOI/TI: ASR #2257 Rev 1

QA PLAN: MCS-033 IMPACT LEVEL: II

324 B-Cell Dispersible Samples
SAMPLE IDENTIFICATION

ACL NUMBER	SAMPLE IDENTIFICATION	1st pH READING	2nd pH READING	pH AVERAGE
95-07358	23A	8.15	8.14	8.15
95-07359	23B	8.52	8.55	8.54
95-07360	24A	8.80	8.76	8.75
95-07361	24B	8.55	8.50	8.52
95-07362	25A	8.10	8.12	8.11
95-07363	25B	8.01	7.99	8.00
N/A	CCV II	7.02	7.03	7.02

CALIBRATION CHECK POINTS: See Pg 1 of 2 (Calib) / (Calib) / (Control) PROCEDURE: PNL-ALO-225

BUFFER LOT NUMBER: See Pg 1 of 2 / /

BUFFER EXPIRATION DATE: See Pg 1 of 2 / / M&TE: Corning #16629

Analyst: Date: 10/11/95 Reviewer: Date: 10/11/95

Attachment 2:

1990 HLV and LLV Vault Tank Contents Analytical Results

The following analytical data (including chemist's bench sheet) and analytical reports are from the PNL 325 Laboratory. Included are data for the samples collected from the HLV and LLV tanks' contents. The samples were collected and analyzed in 1990. These results were used to eventually designate the waste in all the tanks.

VALUES REPORTED IN mg/L

CUSTOMER

DATE RUN

FILE NAME

Dilution	Detection Limit µg/mL	29-90 90-791 TK-101	Final Conc. µg/mL	30-90 90-792 TK-102	Final Conc µg/mL	31-90 90-793 TK-103	Final Conc. µg/mL	32-90 90-794 TK-105	Final Conc µg/mL	166-90 90-1872 TK-106	Final Conc µg/mL
		10X		10X		10X		10X		10X	
Ag	.007										
Al	.04	97	478	406	2000	77	379	.47	23.5	203	367
As	.05			(4.8)	(24)					(2.7)	(4.9)
B	.003	80.5	396.4	358	176	57	281	.84	42	145	262
Ba	.0009	19.8	97.5	82	404	16.7	82.2	.14	70	43.5	78.6
Be	.0003										
Ca	.0003	41.5	204.3	149	734	35.0	172	5.0	25.0	91.1	165
Cd	.006										
Ce	.02										
Co	.005										
Cr	.002	.99	4.87	(.23)	(1.1)	(.12)	(.59)	.54	27	(.24)	(.43)
Cu	.002			.34	1.7	.16	.79			14.8	26.8
Dy	.002										
Fe	.002	8.20	40.4	48.2	237	5.05	24.9	2.00	100	79.4	144
K	.06	16.	79	20	99	16.	79			12	22
La	.003										
Li	.002										
Mg	.001	2.1	10.3	5.1	25	2.27	11.2			7.1	13
Mn	.0003	.54	2.66	.33	1.6	.23	1.1	12.9	645	.28	.51
Mo	.007										
Na	.01	300	1477	801	3950	304	1497	5638	*	404	731
Nd	.008										
Ni	.005	1.67	8.22	.3	1.5	.3		.59	30	2.0	3.6
P	.1	96.8	477	33	162	5.8	29				
Pb	.04			1.5	7.4	(.89)	(4.4)			1.16	2.10
Rn	.01										
Ru	.01										
Sb	.2										
Se	.06										
Si	.01	62.9	310	334	1650	87.2	429	.56	28	105.5	190.8
Sr	.00001	.41	2.0	1.61	7.93	.36	1.8	.05	2.5	.90	1.6
Te	.03										
Ti	.002	.80	3.9	3.0	14.8	.54	2.7	5.0	25	1.55	2.80
Tl	.06										
U	.09										
V	.006										
Zn	.001	.43	2.1	3.34	16.5	.56	2.8	.24	12	2.9	5.2
Zr	.001	.41	2.0	1.33	6.55	.32	1.6	14.8	740	.76	1.4

GOH 5/24/90

Detection limits determined under ideal conditions according to the USEPA CLP protocol.

All tabulated values have been corrected for our lab dilution. Values in ( ) are approaching or at detection limit.

Procedure and MATE used: PNL-SP-7/WA 55672. RFAS number

VALUES REPORTED IN mg/L

CUSTOMER

DATE RUN 5/14/90

FILE NAME TK Ø2

Dilution	Detection limit (µg/ml)	165-90 90-1871 TK-104 Final Conc µg/mL Direct				167-90 90-1873 TK-112 Final Conc µg/mL					
Ag	.007										
Al	.04	.272	3.0								
As	.05						175				
B	.003	.495	5.47								
Ba	.0009	.172	1.90				131				
Be	.0003						1074				
Ca	.0003	1.14	12.6								
Cd	.006						394				
Ce	.02						44				
Co	.005						800				
Cr	.002	.043	.48								
Cu	.002	.456	5.04				405				
Dy	.002										
Fe	.002	.713	7.88								
K	.06	.19	2.1				12200				
La	.003	.18	2.0								
Li	.002						820				
Mg	.001	.257	2.84								
Mn	.0003	.219	2.42				44				
Mo	.007						220				
Na	.01	4.15	45.9				1340				
Nd	.003										
Ni	.005	.132	1.46				190				
P	.1	1.04	11.5								
Pb	.04	1.41	15.6				360				
Rh	.01										
Ru	.01										
Sb	.2						830				
Se	.06										
Si	.01	1.77	19.6								
Sr	.00001	1.39	15.4				390				
Te	.03						660				
Ti	.002	.017	.19								
Tl	.06						130				
U	.09										
V	.006										
Zn	.001	.11	1.2								
Zr	.001	.252	2.78				93				
							620				

GOH 5/29/90

Detection limits determined under ideal conditions according to the USEPA CLP protocol.

All tabulated values have been corrected for our lab dilution. Values in ( ) are approaching or at detection limit.

Procedure and M&TE used: PNL-SP-7/WA 55672. RFAS number

```
:NORM ALLELE
Result file (<CR> for no storage) = SINNS
Do you wish to normalise all standards [Y/N] ?

The following standards are used in this programme(s) :
 CL1     CH4     CH3     CH2
Sample name     : CL1

Press <CR> when ready to start measurement
24:132H6n
Sample name     : CL1
Programme       : ALLELE   14-May-90    11:04:46
[1] Direct Intensities
AG    5.12000 AL8   9.62000 AS    12.3500 B04   4.56000 BA02 5.71000 BE    6.12000
CA15 3.33000 CD    7.58000 CE18 11.8900 CO    33.7300 CR21 5.30000 CU    10.4400
DY26 6.71000 FE05 5.54000 K14   24.8100 LA13 7.45000 LI10 5.15000 MG6   2.99000
MN20 5.47000 MO23 4.94000 NA22 5.88000 ND16 5.06000 NI19 4.54000 P4    11.9700
PB    7.16000 RE25 4.71000 RH12 8.61000 RU03 8.56000 SB    3.85000 SE    7.70000
SI7   5.40000 SR17 5.62000 TE01 4.28000 TH    7.66000 TI11 3.86000 TL    4.83000
U     30.6800 V     8.74000 ZN9   4.23000 ZR24 6.90000
[1] Direct Intensities
AG    5.08000 AL8   9.60000 AS    12.7800 B04   4.54000 BA02 5.71000 BE    6.08000
CA15 3.35000 CD    7.56000 CE18 11.8600 CO    33.6000 CR21 5.29000 CU    10.3900
DY26 6.68000 FE05 5.53000 K14   24.7900 LA13 7.39000 LI10 5.14000 MG6   2.99000
MN20 5.46000 MO23 5.06000 NA22 5.79000 ND16 5.07000 NI19 4.55000 P4    12.0900
PB    7.11000 RE25 4.70000 RH12 8.59000 RU03 8.50000 SB    3.82000 SE    7.60000
SI7   5.38000 SR17 5.59000 TE01 4.27000 TH    7.62000 TI11 3.85000 TL    4.55000
U     30.5700 V     8.76000 ZN9   4.26000 ZR24 6.89000
[1] Direct Intensities
AG    5.11000 AL8   9.61000 AS    12.7500 B04   4.60000 BA02 5.70000 BE    6.11000
CA15 3.35000 CD    7.59000 CE18 11.8600 CO    33.7000 CR21 5.32000 CU    10.4300
DY26 6.70000 FE05 5.54000 K14   24.8100 LA13 7.41000 LI10 5.16000 MG6   2.99000
MN20 5.51000 MO23 5.04000 NA22 5.79000 ND16 5.09000 NI19 4.55000 P4    11.9400
PB    7.28000 RE25 4.69000 RH12 8.64000 RU03 8.49000 SB    3.86000 SE    7.59000
SI7   5.39000 SR17 5.63000 TE01 4.28000 TH    7.64000 TI11 3.90000 TL    4.50000
U     30.5900 V     8.74000 ZN9   4.26000 ZR24 6.87000
```

NAME	MV INT	RSD	PCOR
AG	5.10	0.41	0.00000
AL8	9.61	0.10	0.00000
AS	12.69	0.99	0.00000
B04	4.57	0.67	0.00000
BA02	5.71	0.10	0.00000
BE	6.10	0.34	0.00000
CA15	3.34	0.35	0.00000
CD	7.58	0.20	0.00000
CE18	11.85	0.39	0.00000
CO	33.68	0.20	0.00000
CR21	5.30	0.29	0.00000
CU	10.42	0.25	0.00000
DY26	6.70	0.23	0.00000
FE05	5.54	0.10	0.00000
K14	24.80	0.05	0.00000
LA13	7.42	0.41	0.00000
LI10	5.15	0.19	0.00000
MG6	2.99	0.00	0.00000
MN20	5.48	0.48	0.00000
MO23	5.01	1.28	0.00000

NA22	5.79	0.10	0.00000
ND16	5.87	0.30	0.00000
NI19	5.55	0.13	0.00000
P4	12.00	0.66	0.00000
PB	7.18	1.22	0.00000
RE25	4.70	0.21	0.00000
RH12	8.61	0.29	0.00000
RU03	8.52	0.44	0.00000
SB	3.84	0.54	0.00000
SE	7.63	0.80	0.00000
SI7	5.39	0.19	0.00000
SR17	5.61	0.37	0.00000
TE01	4.28	0.14	0.00000
TH	7.64	0.26	0.00000
TI11	3.87	0.68	0.00000
TL	4.59	0.88	0.00000
U	30.61	0.19	0.00000
V	8.75	0.13	0.00000
ZN9	4.23	0.71	0.00000
ZR24	6.89	0.22	0.00000

Store [N/Y] ? Y

Channel	Old	New	Nominal	Drift
AG	5.04667	5.10333	5.49667	*
AL8	9.92000	9.61000	13.7467	*
AS	12.4167	12.6933	13.0567	
B04	4.56333	4.56667	5.09333	*
BA02	5.65667	5.70667	6.19667	*
BE	6.18000	6.10333	7.31000	*
CA15	3.34333	3.34333	3.99667	*
CD	7.44333	7.57667	8.50333	*
CE18	11.4833	11.8500	12.5200	*
CO	32.3000	33.6767	31.7933	*
CR21	5.27667	5.30333	5.78000	*
CU	10.1500	10.4200	10.9300	*
DY26	6.57667	6.69667	7.12333	*
FE05	5.47667	5.53667	5.91000	*
K19	24.0500	24.8033	24.2667	*
LA13	7.30333	7.41667	7.79333	*
LI10	5.11667	5.15000	5.49333	*
MG6	2.99333	2.99000	3.40333	*
MN20	5.45000	5.48000	6.14333	*
MO23	5.21000	5.01333	6.05667	*
NA22	5.76333	5.79333	6.33000	*
ND16	4.99333	5.07333	5.44333	*
NI19	4.53667	4.54667	5.34333	*
P4	12.1033	12.0000	14.9067	*
PB	7.14333	7.18333	8.42333	*
RE25	4.67333	4.70000	5.31333	*
RH12	8.31333	8.61333	9.91333	*
RU03	8.37667	8.51667	8.76333	*
SB	3.89333	3.84333	4.28000	*
SE	7.56000	7.63000	8.63667	*
SI7	5.34000	5.39000	5.96000	*
SR17	5.52667	5.61333	6.02333	*
TE01	4.27333	4.27667	5.33333	*
TH	7.48333	7.64000	9.78667	*
TI11	3.87333	3.87000	4.54000	*

```
TL       4.49000 4.50667 5.62000   *
U        29.3533 30.6133 29.7700   *
V        8.48000 8.74667 9.24000   *
ZN9      4.19000 4.23000 5.34000   *
ZR24     6.79333 6.88667 7.43667   *
[******] Excessive drift - check correct standard used
Update standard file [Y/N] ? Y

Sample name     : CH4

Press <CR> when ready to start measurement
24:132H6n
Sample name     : CH4
Programme       : ALLELE   14-May-90    11:07:47
[1] Direct Intensities
AG   129.800 U    157.800
[1] Direct Intensities
AG   129.500 U    157.700
[1] Direct Intensities
AG   129.400 U    157.500

NAME       MV INT       RSD     BCOR

AG         129.57      0.16  0.00000
U          157.67      0.10  0.00000


Store [N/Y] ? Y

Channel  Old      New      Nominal Drift
AG       122.267 129.567 91.6467   *
U        151.833 157.667 118.000   *
[******] Excessive drift - check correct standard used
Update standard file [Y/N] ? Y

Sample name     : CH3

Press <CR> when ready to start measurement
24:132H6n
Sample name     : CH3
Programme       : ALLELE   14-May-90    11:12:11
[1] Direct Intensities
AL8  51.9800 B04  132.800 CA15 3692.00 CD   362.000 CR21 142.300 DY26 253.200
K14  123.700 LA13 185.200 LI10 364.400 MN20 1114.00 NA22 210.600 ND16 27.3300
P4   43.4200 RE25 112.700 RU03 95.4600 SE   29.5900 SI7  35.8600 TH   28.6400
TL   6.47000
[1] Direct Intensities
AL8  51.9800 B04  133.500 CA15 3696.00 CD   363.000 CR21 142.600 DY26 253.100
K14  123.600 LA13 185.300 LI10 364.900 MN20 1114.00 NA22 210.800 ND16 27.3700
P4   42.8600 RE25 112.800 RU03 95.6800 SE   29.6200 SI7  35.9500 TH   28.6700
TL   6.44000
[1] Direct Intensities
AL8  52.0400 B04  134.200 CA15 3699.00 CD   364.200 CR21 143.100 DY26 253.300
K14  124.100 LA13 185.500 LI10 364.700 MN20 1110.00 NA22 211.000 ND16 27.3600
P4   43.3200 RE25 113.100 RU03 96.1800 SE   29.6800 SI7  35.9900 TH   28.6800
TL   6.40000

NAME       MV INT       RSD     BCOR

AL8        52.00      0.07  0.00000
```

B04	133.50	0.52	0.00000
CA15	3095.67	0.11	0.00000
CD	363.87	0.30	0.00000
CR21	142.67	0.28	0.00000
DY26	253.20	0.04	0.00000
K14	123.80	0.21	0.00000
LA13	185.33	0.08	0.00000
LI10	364.67	0.07	0.00000
MN20	1115.33	0.21	0.00000
NA22	210.80	0.09	0.00000
ND16	27.35	0.08	0.00000
P4	43.20	0.69	0.00000
RE25	112.87	0.18	0.00000
RU03	95.77	0.39	0.00000
SE	29.63	0.15	0.00000
SI7	35.93	0.19	0.00000
TH	28.66	0.07	0.00000
TL	6.44	0.55	0.00000

Store [N/Y] ? Y

Channel	Old	New	Nominal	Drift
AL8	51.0600	52.0000	45.9067	*
B04	131.333	133.500	101.193	*
CA15	3019.67	3095.67	2507.00	*
CD	349.433	363.067	283.133	*
CR21	137.033	142.667	109.933	*
DY26	249.067	253.200	182.733	*
K14	120.633	123.800	101.910	*
LA13	180.567	185.333	135.867	*
LI10	364.300	364.667	288.267	*
MN20	1069.43	1115.33	837.533	*
NA22	208.767	210.800	162.633	*
ND16	26.9233	27.3533	21.1833	*
P4	41.5633	43.2000	35.4267	*
RE25	115.433	112.867	91.4633	*
RU03	91.6733	95.7733	72.9633	*
SE	28.7933	29.6300	25.3767	*
SI7	34.7267	35.9333	29.5567	*
TH	28.0300	28.6633	30.3033	*
TL	6.20333	6.43667	7.12333	*

[******] Excessive drift - check correct standard used
Update standard file [Y/N] ? Y

Sample name : CH2

Press <CR> when ready to start measurement
24:132H6n
Sample name : CH2
Programme : ALLELE 14-May-90 11:17:02
[1] Direct Intensities

AS	72.6100	BA02	658.700	BE	411.600	CE18	39.9200	CO	74.8600	CU	429.700
FE05	246.900	MG6	2051.00	MO23	251.800	NI19	76.1100	PB	48.6400	RH12	42.2100
SB	19.8800	SR17	2028.00	TE01	28.8700	TI11	119.100	V	428.100	ZN9	503.800
ZR24	288.900										

[1] Direct Intensities

AS	75.0900	BA02	662.900	BE	414.400	CE18	40.1300	CO	75.2100	CU	432.600
FE05	249.800	MG6	2066.00	MO23	253.000	NI19	76.6800	PB	48.8900	RH12	42.4900
SB	19.9900	SR17	2038.00	TE01	29.0100	TI11	119.900	V	431.200	ZN9	506.300

```
ZR24 290.600
[1] Direct Intensities
AS   73.5400 BA02 662.400 BE   414.400 CE18 40.1200 CO   75.2700 CU   432.200
FE05 248.500 MG6  2067.00 MO23 253.400 NI19 76.7900 PB   48.9800 RH12 42.5000
SB   19.9500 SR17 2036.00 TE01 29.0700 TI11 119.900 V    431.300 ZN9  506.900
ZR24 290.500
```

NAME	MV INT	RSD	BCOR
AS	73.75	1.70	0.00000
BA02	661.33	0.35	0.00000
BE	413.47	0.39	0.00000
CE18	40.06	0.30	0.00000
CO	75.11	0.29	0.00000
CU	431.50	0.36	0.00000
FE05	248.07	0.41	0.00000
MG6	2061.33	0.43	0.00000
MO23	252.73	0.33	0.00000
NI19	76.53	0.48	0.00000
PB	48.84	0.36	0.00000
RH12	42.40	0.39	0.00000
SB	19.94	0.28	0.00000
SR17	2034.00	0.26	0.00000
TE01	28.98	0.35	0.00000
TI11	119.63	0.39	0.00000
V	430.20	0.42	0.00000
ZN9	505.67	0.33	0.00000
ZR24	290.00	0.33	0.00000

Store [N/Y] ? Y

Channel	Old	New	Nominal	Drift
AS	68.7967	73.7467	51.9367	*
BA02	635.900	661.333	495.433	*
BE	399.633	413.467	283.333	*
CE18	38.7967	40.0567	33.4300	*
CO	72.5633	75.1133	60.8200	*
CU	411.433	431.500	311.033	*
FE05	237.367	248.067	186.467	*
MG6	1970.67	2061.33	1500.67	*
MO23	262.600	252.733	198.633	*
NI19	73.1933	76.5267	59.2767	*
PB	46.9400	48.8367	39.9533	*
RH12	40.4500	42.4000	38.1000	*
SB	18.8767	19.9400	11.2900	*
SR17	1964.00	2034.00	1446.67	*
TE01	27.7033	28.9833	22.6633	*
TI11	114.300	119.633	95.8700	*
V	411.067	430.200	323.967	*
ZN9	483.867	505.667	395.200	*
ZR24	279.067	290.000	211.267	*

```
[******] Excessive drift - check correct standard used
Update standard file [Y/N] ? Y
>
```

SAMP ALLELE
Result file (<CR> for no storage) = TK01
Number of results to be stored in the file = 50
Average number of elements per result = 40
Sample name = CH3
Sample number = 1029
Sample code 1 =
Sample code 2 =
Sample code 3 =

Weight =

Press <CR> when ready to start measurement
24;132H6n
Sample name : CH3
Sample number : 1029
Programme : ALLELE 14-May-90 11:23:20
[1] Direct Intensities

AG	5.59000	Al	51.9800	AS	24.8000	B	132.900	Ba	5.89000	BE	6.59000
Ca	3100.00	CD	362.400	Ce	12.6000	CO	34.4800	Cr	142.400	CU	12.5300
Dy	253.300	Fe	5.97000	K	123.500	La	185.360	Li	365.300	Mg	3.72000
Mn	1115.00	Mo	5.76000	Na	211.100	Nd	27.3000	Ni	5.15000	P	43.4700
PB	8.48000	Re	112.600	Rh	10.0000	Ru	95.4600	SB	4.00000	SE	29.2900
Si	35.8900	Sr	18.4500	Te	5.34000	TH	28.6400	Ti	4.30000	TL	6.48000
U	32.1000	V	10.3800	Zn	4.58000	Zr	32.5600				

[1] Direct Intensities

AG	5.59000	Al	52.2700	AS	25.2000	B	134.300	Ba	5.89000	BE	6.60000
Ca	3120.00	CD	364.800	Ce	12.6300	CO	34.5600	Cr	143.400	CU	12.5400
Dy	254.600	Fe	5.96000	K	124.100	La	186.400	Li	366.900	Mg	3.76000
Mn	1121.00	Mo	5.79000	Na	212.300	Nd	27.4700	Ni	5.16000	P	43.3100
PB	8.49000	Re	113.500	Rh	10.0800	Ru	96.3800	SB	4.02000	SE	29.5900
Si	36.0700	Sr	18.5000	Te	5.33000	TH	28.7500	Ti	4.34000	TL	6.30000
U	32.1900	V	10.4500	Zn	4.59000	Zr	32.6600				

[1] Direct Intensities

AG	5.59000	Al	52.4800	AS	25.0800	B	136.000	Ba	5.90000	BE	6.60000
Ca	3133.00	CD	366.700	Ce	12.5900	CO	34.4900	Cr	144.200	CU	12.5700
Dy	256.400	Fe	5.98000	K	125.200	La	187.400	Li	370.100	Mg	3.75000
Mn	1126.00	Mo	5.85000	Na	213.800	Nd	27.5900	Ni	5.16000	P	43.1800
PB	8.41000	Re	114.100	Rh	10.0600	Ru	96.6700	SB	3.99000	SE	29.6900
Si	36.2300	Sr	18.5900	Te	5.33000	TH	28.9300	Ti	4.34000	TL	6.38000
U	32.1500	V	10.4100	Zn	4.57000	Zr	32.8000				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.83	0.0371	-0.23	0.00000	-0.0029
Al	46.09	10.057	0.59	0.00000	0.00000
AS	20.91	1.8949	1.73	0.00000	-0.1367
B	101.86	10.070	1.20	0.00000	0.00000
Ba	6.34	0.0028	3.09	0.00000	0.00000
BE	7.64	0.0012	1.17	0.00000	0.00000
Ca	2525.35	10.073	0.56	0.00000	0.00000
CD	284.34	10.044	0.60	0.00000	0.00000
Ce	13.68	0.2598	2.74	0.00000	-0.0004
CO	32.38	0.1992	5.25	0.00000	-0.0020
Cr	110.44	10.045	0.65	0.00000	-0.0040
CU	12.45	0.0505	0.98	0.00000	0.00000
Dy	183.55	10.064	0.63	0.00000	0.00000
Fe	6.23	0.0179	2.31	0.00000	0.00000
K	102.28	50.236	0.87	0.00000	0.00000
La	136.61	10.058	0.59	0.00000	0.00000

Li	293.44	10.154	0.67	0.00000	0.00000
Mg	4.03	0.0037	1.76	0.00000	0.00000
Mn	841.53	10.048	0.49	0.00000	0.00000
Mo	6.67	0.0310	5.83	0.00000	0.00000
Na	163.85	100.78	0.65	0.00000	0.00000
Nd	21.25	10.041	0.65	0.00000	-0.0040
Ni	5.80	0.0847	0.95	0.00000	0.00000
P	35.51	10.038	0.46	0.00000	0.00000
PB	9.39	0.2912	3.54	0.00000	-0.0153
Re	91.89	10.049	0.69	0.00000	0.00000
Rh	11.11	0.4242	2.90	0.00000	0.00000
Ru	73.26	10.045	0.72	0.00000	-0.0002
SB	4.35	-0.092	-8.10	0.00000	-0.3721
SE	25.30	9.9266	1.83	0.00000	-2.8638
Si	29.66	10.043	0.55	0.00000	0.00000
Sr	15.19	0.0636	0.55	0.00000	0.00000
Te	6.07	0.4277	0.55	0.00000	0.00000
TH	30.41	10.025	0.69	0.00000	-0.0272
Ti	4.90	0.0394	5.66	0.00000	0.00000
TL	7.08	9.6979	5.02	0.00000	-0.0319
U	30.83	1.0079	3.43	0.00000	-0.1989
V	10.48	0.0384	2.07	0.00000	-0.0011
Zn	5.61	0.0070	2.86	0.00000	0.00000
Zr	26.00	0.9108	0.47	0.00000	0.00000

More samples [Y/N] ?
Sample name = CL1
Sample number = 1030
Sample code 1 =
Sample code 2 =
Sample code 3 =
Weight =

Press <CR> when ready to start measurement
24:132H&n
Sample name : CL1
Sample number : 1030
Programme : ALLELE 14-May-90 11:30:00

[1] Direct Intensities

AG	5.09000	Al	9.69000	AS	12.4400	B	5.17000	Ba	5.75000	BE	6.11000
Ca	3.40000	CD	7.55000	Ce	11.8700	CO	33.6700	Cr	5.33000	CU	10.4600
Dy	6.72000	Fe	5.57000	K	24.8800	La	7.46000	Li	5.15000	Mg	3.01000
Mn	5.49000	Mo	4.96000	Na	5.79000	Nd	5.69000	Ni	4.56000	P	12.1600
PB	7.23000	Re	4.68000	Rh	8.64000	Ru	8.55000	SB	3.88000	SE	7.63000
Si	5.40000	Sr	5.64000	Te	4.28000	TH	7.65000	Ti	3.89000	TL	4.67000
U	30.6400	V	8.74000	Zn	4.22000	Zr	6.92000				

[1] Direct Intensities

AG	5.13000	Al	9.70000	AS	12.7700	B	5.18000	Ba	5.75000	BE	6.13000
Ca	3.40000	CD	7.56000	Ce	11.9000	CO	33.8800	Cr	5.32000	CU	10.5000
Dy	6.72000	Fe	5.56000	K	24.9600	La	7.46000	Li	5.16000	Mg	3.00000
Mn	5.52000	Mo	5.06000	Na	5.80000	Nd	5.10000	Ni	4.54000	P	12.1700
PB	7.22000	Re	4.71000	Rh	8.67000	Ru	8.55000	SB	3.88000	SE	7.79000
Si	5.41000	Sr	5.66000	Te	4.32000	TH	7.68000	Ti	3.88000	TL	4.57000
U	30.7800	V	8.80000	Zn	4.20000	Zr	6.92000				

[1] Direct Intensities

AG	5.10000	Al	9.66000	AS	12.9000	B	5.01000	[illegible]	5.73000	BE	6.14000
Ca	3.39000	CD	7.52000	Ce	11.8100	CO	[illegible]	Cr	5.30000	CU	10.4400
Dy	6.69000	Fe	5.50000	K	24.[illegible]	La	7.42000	Li	5.16000	Mg	2.99000
Mn	5.50000	Mo	5.0[illegible]	[illegible]	5.79000	Nd	5.60000	Ni	4.54000	P	11.8800

PB	7.30000	Re	[illegible]	Rh	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	5.38000	Sr	5.60000	Te	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
	30.6200	V	8.73000	Zn	4.19000	[illegible]	[illegible]		

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.50	0.0001	1043.43	0.00000	-0.0001
Al	13.80	0.0173	28.38	0.00000	0.00000
AS	13.06	0.0010	4034.49	0.00000	-0.0007
B	5.49	0.0408	15.23	0.00000	0.00000
Ba	6.22	0.0006	31.49	0.00000	0.00000
BE	7.33	0.0001	65.45	0.00000	0.00000
Ca	4.04	0.0002	10.83	0.00000	0.00000
CD	8.48	-0.001	-62.45	0.00000	0.00000
Ce	12.53	0.0032	496.03	0.00000	-0.0004
CO	31.83	0.0128	245.97	0.00000	-0.0001
Cr	5.79	0.0008	111.06	0.00000	-0.0002
CU	10.96	0.0011	65.47	0.00000	0.00000
Dy	7.13	0.0005	129.90	0.00000	0.00000
Fe	5.93	0.0014	30.00	0.00000	0.00000
K	24.33	0.0421	84.28	0.00000	0.00000
La	7.81	0.0017	76.98	0.00000	0.00000
Li	5.50	0.0004	86.58	0.00000	0.00000
Mg	3.49	0.0000	229.12	0.00000	0.00000
Mn	6.16	0.0002	65.47	0.00000	0.00000
Mo	6.06	0.0003	793.64	0.00000	0.00000
Na	6.33	0.0000	590700	0.00000	0.00000
Nd	5.46	0.0073	58.32	0.00000	-0.0002
Ni	5.34	-0.000	*******	0.00000	0.00000
P	14.95	0.0224	235.17	0.00000	0.00000
PB	8.47	0.0158	64.85	0.00000	-0.0002
Re	5.31	-0.001	-173.19	0.00000	0.00000
Rh	9.94	0.0109	47.24	0.00000	0.00000
Ru	8.78	0.0030	43.36	0.00000	-0.0000
SB	4.30	0.0405	-142.50	0.00000	-0.0237
SE	8.69	0.0420	110.13	0.00000	-0.0008
Si	5.97	0.0022	229.08	0.00000	0.00000
Sr	6.04	0.0001	152.74	0.00000	0.00000
Te	5.34	0.0054	198.44	0.00000	0.00000
TH	9.79	0.0020	770.39	0.00000	-0.0012
Ti	4.55	0.0012	43.30	0.00000	0.00000
TL	5.64	0.1248	227.82	0.00000	-0.0014
U	29.82	0.0523	131.09	0.00000	-0.0002
V	9.25	0.0002	457.65	0.00000	-0.0001
Zn	5.32	-0.001	-57.28	0.00000	0.00000
Zr	7.46	0.0009	43.30	0.00000	0.00000

More samples [Y/N] ?
Sample name = 901871
Sample number = 1031
Sample code 1 = TK104
Sample code 2 = DIRECT
Sample code 3 =
Weight =

Press <CR> when ready to start measurement
24:132Hén
Sample name : 901871
Sample number : 1031

Sample code 1 : TK104
Sample code 2 : DIRECT
Programme : ALLELE 14-May-90 11:35:55

[1] Direct Intensities

AG	5.17000	Al	10.7500	AS	12.4900	B	10.9300	Ba	16.9500	BE	6.15000
Ca	354.600	CD	8.00000	Ce	11.7600	CO	33.1000	Cr	6.15000	CU	29.5000
Dy	6.62000	Fe	22.7400	K	25.1600	La	10.6100	Li	5.16000	Mg	55.7200
Mn	29.6400	Mo	6.11000	Na	14.2800	Nd	5.05000	Ni	5.47000	P	15.1000
PB	13.0100	Re	4.68000	Rh	8.55000	Ru	8.76000	SB	3.88000	SE	7.53000
Si	10.7900	Sr	286.600	Te	4.25000	TH	7.60000	Ti	4.07000	TL	4.60000
U	35.7200	V	8.64000	Zn	9.68000	Zr	14.1500				

[1] Direct Intensities

AG	5.18000	Al	10.7600	AS	12.6900	B	10.9600	Ba	17.0100	BE	6.18000
Ca	356.000	CD	7.92000	Ce	11.7500	CO	33.1800	Cr	6.12000	CU	29.7300
Dy	6.65000	Fe	22.9800	K	25.1600	La	10.6500	Li	5.17000	Mg	56.0500
Mn	29.8500	Mo	6.06000	Na	14.3200	Nd	5.06000	Ni	5.50000	P	15.3300
PB	13.1900	Re	4.68000	Rh	8.57000	Ru	8.78000	SB	3.88000	SE	7.63000
Si	10.8000	Sr	288.000	Te	4.29000	TH	7.61000	Ti	4.07000	TL	4.59000
U	35.8000	V	8.69000	Zn	9.76000	Zr	14.1200				

[1] Direct Intensities

AG	5.19000	Al	10.7800	AS	12.9000	B	10.9600	Ba	16.9800	BE	6.18000
Ca	354.400	CD	7.95000	Ce	11.8000	CO	33.2900	Cr	6.15000	CU	29.5700
Dy	6.66000	Fe	22.8600	K	25.1900	La	10.6600	Li	5.18000	Mg	55.9000
Mn	29.7000	Mo	6.26000	Na	14.2700	Nd	5.07000	Ni	5.51000	P	15.3000
PB	13.1400	Re	4.67000	Rh	8.59000	Ru	8.76000	SB	3.90000	SE	7.70000
Si	10.7800	Sr	286.600	Te	4.29000	TH	7.64000	Ti	4.06000	TL	4.65000
U	35.9100	V	8.69000	Zn	9.79000	Zr	13.7600				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.55	-0.004	-17.69	0.00000	-0.0099
Al	14.62	0.2721	1.32	0.00000	0.00000
AS	13.05	-0.045	-75.09	0.00000	-0.0445
B	9.85	0.4951	0.27	0.00000	0.00000
Ba	14.61	0.1719	0.27	0.00000	0.00000
BE	7.36	0.0002	25.98	0.00000	0.00000
Ca	288.64	1.1372	0.25	0.00000	0.00000
CD	8.80	0.0107	10.64	0.00000	0.00000
Ce	12.46	-0.057	-15.43	0.00000	-0.0288
CO	31.45	-0.124	-18.45	0.00000	-0.0067
Cr	6.41	0.0473	2.10	0.00000	-0.0136
CU	24.62	0.4561	0.47	0.00000	0.00000
Dy	7.09	-0.002	-39.03	0.00000	0.00000
Fe	18.79	0.7132	0.48	0.00000	0.00000
K	24.55	0.1852	4.72	0.00000	0.00000
La	10.11	0.1812	0.82	0.00000	0.00000
Li	5.51	0.0011	50.00	0.00000	0.00000
Mg	41.96	0.2570	0.31	0.00000	0.00000
Mn	24.31	0.2185	0.45	0.00000	0.00000
Mo	6.94	0.0456	9.21	0.00000	0.00000
Na	12.81	4.1446	0.31	0.00000	0.00000
Nd	5.43	-0.020	-21.60	0.00000	-0.0136
Ni	6.05	0.1315	2.20	0.00000	0.00000
P	17.04	1.0395	3.86	0.00000	0.00000
PB	12.91	1.4122	1.56	0.00000	-0.0114
Re	5.29	-0.002	-24.74	0.00000	0.00000
Rh	9.88	-0.013	-46.15	0.00000	0.00000
Ru	8.95	0.0214	6.03	0.00000	-0.0073
SB	4.30	0.2689	-8.21	0.00000	0.19299
SE	8.63	-0.061	-79.38	0.00000	-0.0557

Ba	10.13	1.7680	0.19	0.00000	0.00000
Sr	205.92	1.3076	0.29	0.00000	0.00000
Te	5.33	-0.000	*******	0.00000	0.00000
TH	9.76	-0.106	-7.62	0.00000	-0.0946
Ti	4.70	0.0170	2.94	0.00000	0.00000
TL	5.64	0.0356	481.87	0.00000	-0.1085
U	33.40	~~[illegible]~~	1.94	0.00000	-0.0550
V	9.19	-0.006	-9.65	0.00000	-0.0045
Zn	9.63	0.1100	1.03	0.00000	0.00000
Zr	12.57	0.2516	3.05	0.00000	0.00000

More samples [Y/N] ?
Sample name = 90-791
Sample number = 10200
Sample code 1 = TK101
Sample code 2 = 10XDIL
Sample code 3 =
Weight =

Press <CR> when ready to start measurement
24;132H6n
Sample name : 90-791
Sample number : 1032
Sample code 1 : TK101
Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 11:42:33
[1] Direct Intensities

AG	5.12000	Al	50.7400	AS	13.8300	B	107.600	Ba	135.400	BE	6.19000
Ca	1289.00	CD	8.01000	Ce	11.8000	CO	33.5400	Cr	6.65000	CU	10.9900
Dy	6.69000	Fe	25.3600	K	27.7900	La	7.48000	Li	5.20000	Mg	46.0500
Mn	11.4700	Mo	5.52000	Na	67.5600	Nd	5.07000	Ni	5.73000	P	42.3500
PB	7.44000	Re	4.73000	Rh	8.63000	Ru	8.66000	SB	3.91000	SE	7.81000
Si	24.5400	Sr	13.9200	Te	4.26000	TH	7.63000	Ti	4.80000	TL	4.70000
U	30.6800	V	8.74000	Zn	6.34000	Zr	8.06000				

[1] Direct Intensities

AG	5.16000	Al	50.7500	AS	14.1500	B	108.400	Ba	135.400	BE	6.20000
Ca	1287.00	CD	8.13000	Ce	11.8800	CO	33.6800	Cr	6.68000	CU	11.0400
Dy	6.72000	Fe	25.4500	K	28.0600	La	7.50000	Li	5.19000	Mg	46.1600
Mn	11.5100	Mo	5.57000	Na	67.3400	Nd	5.10000	Ni	5.76000	P	42.2100
PB	7.45000	Re	4.73000	Rh	8.66000	Ru	8.62000	SB	3.95000	SE	7.77000
Si	24.6300	Sr	13.9500	Te	4.28000	TH	7.65000	Ti	4.80000	TL	4.66000
U	30.8400	V	8.82000	Zn	6.39000	Zr	8.07000				

[1] Direct Intensities

AG	5.15000	Al	50.7400	AS	14.3300	B	109.100	Ba	135.300	BE	6.22000
Ca	1286.00	CD	8.01000	Ce	11.8800	CO	33.7600	Cr	6.66000	CU	11.0500
Dy	6.75000	Fe	25.4300	K	28.1300	La	7.49000	Li	5.22000	Mg	46.1800
Mn	11.5000	Mo	5.60000	Na	67.1800	Nd	5.10000	Ni	5.75000	P	42.0400
PB	7.46000	Re	4.73000	Rh	8.65000	Ru	8.69000	SB	3.89000	SE	7.74000
Si	24.6000	Sr	13.9500	Te	4.31000	TH	7.69000	Ti	4.80000	TL	4.62000
U	30.8100	V	8.81000	Zn	6.39000	Zr	8.01000				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.52	0.0030	52.04	0.00000	-0.0003
Al	44.95	9.7035	0.01	0.00000	0.00000
AS	13.95	0.1051	39.08	0.00000	-0.1271
B	82.46	8.0507	0.72	0.00000	0.00000
Ba	102.95	1.9777	0.04	0.00000	0.00000
BE	7.38	0.0002	15.27	0.00000	0.00000

Ba	1043.29	4.1522	5.12	0.00000	0.00000
CD	8.97	0.0133	14.64	0.00000	0.00000
Ce	12.52	0.0003	5637.29	0.00000	-0.0009
CO	31.78	-0.004	-632.47	0.00000	-0.0002
Cr	6.81	0.0986	0.90	0.00000	-0.0004
CU	11.36	0.0144	5.30	0.00000	0.00000
Dy	7.14	0.0009	128.57	0.00000	0.00000
Fe	20.71	0.8196	0.24	0.00000	0.00000
K	26.77	1.6112	5.63	0.00000	0.00000
La	7.85	0.0041	13.64	0.00000	0.00000
Li	5.54	0.0030	28.64	0.00000	0.00000
Mg	34.86	0.2096	0.16	0.00000	0.00000
Mn	10.65	0.0542	0.35	0.00000	0.00000
Mo	6.48	0.0222	7.35	0.00000	0.00000
Na	53.27	30.032	0.31	0.00000	0.00000
Nd	5.46	0.0071	107.03	0.00000	-0.0004
Ni	6.24	0.1667	1.27	0.00000	0.00000
P	34.77	9.6795	0.51	0.00000	0.00000
PB	8.63	0.0520	4.26	0.00000	-0.0120
Re	5.34	0.0028	0.60	0.00000	0.00000
Rh	9.94	0.0099	45.82	0.00000	0.00000
Ru	8.87	0.0077	52.11	0.00000	-0.0084
SB	4.31	0.1351	3.16	0.00000	0.00667
SE	8.75	0.0074	264.81	0.00000	-0.0763
Si	20.79	6.2861	0.24	0.00000	0.00000
Sr	11.94	0.0411	0.21	0.00000	0.00000
Te	5.34	0.0027	377.51	0.00000	0.00000
TH	9.90	0.0050	261.40	0.00000	-0.0030
Ti	5.27	0.0003	0.08	0.00000	0.00000
TL	5.68	0.3930	54.56	0.00000	-0.0034
U	29.88	0.1196	55.76	0.00000	-0.0089
V	9.27	0.0009	107.16	0.00000	-0.0001
Zn	7.01	0.0427	1.35	0.00000	0.00000
Zr	8.27	0.0410	2.77	0.00000	0.00000

```
More samples [Y/N] ?
Sample name     = 90-792
Sample number   = 1033
Sample code 1   = TK162
Sample code 2   = 10XDIL
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H6n
Sample name     : 90-792
Sample number   : 1033
Sample code 1   : TK162
Sample code 2   : 10XDIL
Programme       : ALLELE   14-May-90    11:48:58
[1] Direct Intensities
AG   5.05000 Al   181.700 AS   19.1900 B    463.000 Ba   545.000 BE   6.39000
Ca   4629.00 CD   7.87000 Ce   11.7500 CO   33.1500 Cr   5.64000 CU   11.8000
Dy   6.68000 Fe   122.300 K    28.7500 La   7.55000 Li   5.38000 Mg   108.000
Mn   9.14000 Mo   5.42000 Na   170.600 Nd   5.08000 Ni   4.74000 P    22.6100
PB   8.00000 Re   4.73000 Rh   8.50000 Ru   8.93000 SB   3.87000 SE   7.92000
Si   107.600 Sr   38.4100 Te   4.35000 TH   7.60000 Ti   7.27000 TL   4.62000
U    30.7900 V    8.80000 Zn   20.9800 Zr   10.7200
[1] Direct Intensities
```

AG	5.66000	Al	102.000	AS	18.7100	B	367.200	Ba	540.100	BE	[illegible]
Ca	4639.00	CD	7.90000	Ce	11.7000	CO	33.3200	Cr	5.61000	CU	11.8600
Dy	6.68000	Fe	122.700	K	28.6000	La	7.39000	Li	5.39000	Mg	168.500
Mn	9.15000	Mo	5.53000	Na	170.500	Nd	5.10000	Ni	4.77000	P	22.1700
PB	7.98000	Re	4.75000	Rh	8.54000	Ru	8.90000	SB	3.89000	SE	7.99000
Si	107.700	Sr	38.4900	Te	4.37000	TH	7.58000	Ti	7.30000	TL	4.59000
U	30.8500	V	8.89000	Zn	21.0100	Zr	10.6400				

[1] Direct Intensities

AG	5.68000	Al	180.900	AS	18.7500	B	466.300	Ba	542.400	BE	6.44000
Ca	4607.00	CD	7.90000	Ce	11.8000	CO	33.5400	Cr	5.64000	CU	11.8900
Dy	6.78000	Fe	122.400	K	28.8600	La	7.62000	Li	5.40000	Mg	168.200
Mn	9.17000	Mo	5.39000	Na	168.700	Nd	5.09000	Ni	4.77000	P	22.5200
PB	8.01000	Re	4.78000	Rh	8.58000	Ru	8.90000	SB	3.90000	SE	8.14000
Si	107.200	Sr	38.2900	Te	4.40000	TH	7.63000	Ti	7.29000	TL	4.68000
U	31.0500	V	8.92000	Zn	20.9800	Zr	10.6000				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.47	-0.004	-25.97	0.00000	-0.0005
Al	144.18	)40.558	0.33	0.00000	0.00000
AS	17.00	0.4843	8.28	0.00000	-0.5364
B	348.65	)35.750	0.48	0.00000	0.00000
Ba	408.25	8.2188	0.35	0.00000	0.00000
BE	7.52	0.0008	8.63	0.00000	0.00000
Ca	3744.88	)14.946	0.35	0.00000	0.00000
CD	8.74	0.0086	4.93	0.00000	0.00000
Ce	12.46	-0.031	-38.44	0.00000	-0.0015
CO	31.56	-0.082	-57.04	0.00000	-0.0004
Cr	6.63	0.0231	3.89	0.00000	-0.0007
CU	11.95	0.0348	3.28	0.00000	0.00000
Dy	7.12	-0.000	-115.48	0.00000	0.00000
Fe	92.96	4.8213	0.18	0.00000	0.00000
K	27.37	2.0001	2.29	0.00000	0.00000
La	7.92	0.0096	20.66	0.00000	0.00000
Li	5.68	0.0134	4.17	0.00000	0.00000
Mg	80.83	0.5113	0.24	0.00000	0.00000
Mn	8.98	0.0331	0.42	0.00000	0.00000
Mo	6.39	0.0175	17.81	0.00000	0.00000
Na	131.48	80.066	0.65	0.00000	0.00000
Nd	5.46	0.0068	61.07	0.00000	-0.0007
Ni	5.58	0.0296	8.12	0.00000	0.00000
P	21.77	3.3446	2.23	0.00000	0.00000
PB	9.04	0.1460	2.20	0.00000	-0.0493
Re	5.36	0.0049	47.19	0.00000	0.00000
Rh	9.85	-0.022	-54.54	0.00000	0.00000
Ru	9.85	-0.004	-46.29	0.00000	-0.0492
SB	4.30	0.2241	-26.63	0.00000	0.14823
SE	8.93	0.0185	343.58	0.00000	-0.2074
Si	84.85	)33.431	0.26	0.00000	0.00000
Sr	29.31	0.1616	0.31	0.00000	0.00000
Te	5.48	0.0391	26.83	0.00000	0.00000
TH	9.75	-0.023	-41.91	0.00000	-0.0051
Ti	7.24	0.2951	0.45	0.00000	0.00000
TL	5.66	0.2284	107.16	0.00000	-0.0058
U	29.96	0.1913	57.39	0.00000	-0.0291
V	9.33	0.0027	50.11	0.00000	-0.0002
Zn	18.37	0.3342	0.18	0.00000	0.00000
Zr	10.15	0.1330	1.62	0.00000	0.00000

More samples [Y/N] ?
Sample name = 90-793
Sample number = 1034
Sample code 1 = TK103
Sample code 2 = 10XDIL
Sample code 3 =
Weight =

Press <CR> when ready to start measurement
24:132H6n
Sample name : 90-793
Sample number : 1034
Sample code 1 : TK103
Sample code 2 : 10XDIL
Programme . : ALLELE 14-May-90 11:54:37
[1] Direct Intensities

AG	5.15000	Al	42.1800	AS	13.9400	B	77.9300	Ba	115.000
BE	6.15000	Ca	1088.00	CD	8.69000	Ce	11.7200	CO	33.2000
Cr	5.48000	CU	11.0900	Dy	6.66000	Fe	17.8000	K	28.0900
La	7.43000	Li	5.18000	Mg	49.7400	Mn	8.00000	Mo	5.13000
Na	68.3400	Nd	5.06000	Ni	4.75000	P	13.7400	PB	7.66000
Re	4.69000	Rh	8.55000	Ru	8.47000	SB	3.87000	SE	7.64000
Si	32.0100	Sr	12.8300	Te	4.27000	TH	7.57000	Ti	4.50000
TL	4.67000	U	30.3700	V	8.66000	Zn	7.09000	Zr	7.80000

[1] Direct Intensities

AG	5.16000	Al	42.1400	AS	14.0100	B	77.9000	Ba	114.800
BE	6.14000	Ca	1085.00	CD	8.66000	Ce	11.7000	CO	33.2400
Cr	5.48000	CU	11.1000	Dy	6.66000	Fe	17.7700	K	28.0100
La	7.40000	Li	5.17000	Mg	49.5400	Mn	8.00000	Mo	5.13000
Na	67.9500	Nd	5.05000	Ni	4.77000	P	13.8500	PB	7.56000
Re	4.69000	Rh	8.53000	Ru	8.57000	SB	3.92000	SE	7.69000
Si	31.9800	Sr	12.8100	Te	4.31000	TH	7.57000	Ti	4.48000
TL	4.66000	U	30.3600	V	8.66000	Zn	7.01000	Zr	7.80000

[1] Direct Intensities

AG	5.16000	Al	42.3400	AS	13.7200	B	78.3000	Ba	115.200
BE	6.16000	Ca	1090.00	CD	8.63000	Ce	11.7400	CO	33.2600
Cr	5.45000	CU	11.1100	Dy	6.66000	Fe	17.8000	K	28.0100
La	7.41000	Li	5.19000	Mg	49.7700	Mn	8.03000	Mo	5.24000
Na	68.3400	Nd	5.01000	Ni	4.78000	P	13.8000	PB	7.55000
Re	4.66000	Rh	8.58000	Ru	8.49000	SB	3.86000	SE	7.72000
Si	32.0900	Sr	12.8800	Te	4.28000	TH	7.57000	Ti	4.52000
TL	4.68000	U	30.3900	V	8.66000	Zn	7.01000	Zr	7.80000

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.53	0.0040	9.22	0.00000	0.00045
Al	38.49	7.6929	0.32	0.00000	0.00000
AS	13.82	0.0990	24.56	0.00000	-0.0973
B	59.86	5.6988	0.30	0.00000	0.00000
Ba	87.75	1.6670	0.18	0.00000	0.00000
BE	7.34	0.0001	21.43	0.00000	0.00000
Ca	881.67	3.5065	0.23	0.00000	0.00000
CD	9.34	0.0305	2.77	0.00000	0.00000
Ce	12.42	-0.045	-15.65	0.00000	0.00132
CO	31.48	-0.107	-6.89	0.00000	0.00031
Cr	5.91	0.0128	9.57	0.00000	0.00062
CU	11.41	0.0161	1.47	0.00000	0.00000
Dy	7.10	-0.001	0.00	0.00000	0.00000
Fe	15.03	0.5052	0.14	0.00000	0.00000
K	26.80	1.6331	1.43	0.00000	0.00000
La	7.79	-0.000	-458.00	0.00000	0.00000
Li	5.52	0.0017	33.33	0.00000	0.00000
Mg	37.45	0.2268	0.27	0.00000	0.00000

Mn	8.04	0.0223	0.68	0.00000	0.00000
Mo	6.18	0.0062	41.42	0.00000	0.00000
Na	53.92	30.446	0.36	0.00000	0.00000
Nd	5.42	-0.014	-82.55	0.00000	0.00062
Ni	5.51	0.0306	6.94	0.00000	0.00000
P	16.09	0.5759	3.07	0.00000	0.00000
PB	8.73	0.0889	16.35	0.00000	-0.0087
Re	5.30	-0.032	-86.68	0.00000	0.00000
Rh	9.86	-0.018	-41.94	0.00000	0.00000
Ru	8.76	-0.006	-102.36	0.00000	-0.0052
SB	4.30	0.2658	16.12	0.00000	0.19568
SE	8.68	-0.008	-280.52	0.00000	-0.0394
Si	26.54	8.7209	0.21	0.00000	0.00000
Sr	11.16	0.0356	0.50	0.00000	0.00000
Te	5.34	0.0040	268.16	0.00000	0.00000
TH	9.72	-0.029	0.96	0.00000	0.00434
Ti	5.04	0.0544	3.17	0.00000	0.00000
TL	5.69	0.4554	11.80	0.00000	0.00499
U	29.60	-0.196	-6.14	0.00000	-0.0070
V	9.18	-0.002	0.72	0.00000	0.00022
Zn	7.52	0.0560	1.65	0.00000	0.00000
Zr	8.89	0.0323	0.00	0.00000	0.00000

```
More samples [Y/N] ?
Sample name     = CH2
Sample number   = 1035
Sample code 1   =
Sample code 2   =
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H6n
Sample name     : CH2
Sample number   : 1035
Programme       : ALLELE   14-May-90    12:00:09
[1] Direct Intensities
AG   6.24000 Al   11.2700 AS   73.9900 B    7.00000 Ba   666.100 BE   415.600
Ca   13.0600 CD   8.20000 Ce   40.1400 CO   74.9800 Cr   5.56000 CU   433.300
Dy   7.17000 Fe   248.800 K    24.6900 La   8.66000 Li   5.12000 Mg   2066.00
Mn   5.78000 Mo   253.000 Na   26.8500 Nd   5.29000 Ni   76.6100 P    13.9500
PB   48.8100 Re   4.82000 Rh   42.5500 Ru   9.65000 SB   20.0000 SE   10.4900
Si   5.92000 Sr   2052.00 Te   28.9300 TH   9.47000 Ti   120.300 TL   5.07000
U    75.7400 V    432.000 Zn   585.600 Zr   291.300
[1] Direct Intensities
AG   6.24000 Al   11.2400 AS   73.5000 B    6.99000 Ba   664.500 BE   414.100
Ca   13.0300 CD   8.14000 Ce   40.0300 CO   74.8100 Cr   5.53000 CU   432.500
Dy   7.16000 Fe   248.200 K    24.6500 La   8.61000 Li   5.11000 Mg   2062.00
Mn   5.79000 Mo   251.800 Na   26.8000 Nd   5.29000 Ni   76.3300 P    13.5400
PB   48.7600 Re   4.85000 Rh   42.4100 Ru   9.63000 SB   20.0000 SE   10.6100
Si   5.94000 Sr   2044.00 Te   28.9000 TH   9.50000 Ti   119.900 TL   4.99000
U    75.6500 V    430.700 Zn   584.100 Zr   290.100
[1] Direct Intensities
AG   6.19000 Al   11.1900 AS   72.4400 B    6.56000 Ba   664.800 BE   412.800
Ca   13.0100 CD   8.00000 Ce   39.9900 CO   74.5000 Cr   5.52000 CU   433.200
Dy   7.13000 Fe   247.500 K    24.6700 La   8.58000 Li   5.10000 Mg   2057.00
Mn   5.76000 Mo   252.300 Na   26.8300 Nd   5.26000 Ni   76.0600 P    13.7400
PB   48.6200 Re   4.81000 Rh   42.4600 Ru   9.56000 SB   19.9800 SE   10.3800
Si   5.92000 Sr   2043.00 Te   28.9500 TH   9.44000 Ti   119.800 TL   5.01000
```

U 75.4600 V 429.500 Zn 502.600 Zr 290.000

NAME	MV INT	CONCEN	RSD	DCOR	SCOR
AG	6.27	0.0071	29.50	0.00000	-0.0850
Al	14.98	0.3830	2.49	0.00000	0.00000
AS	51.66	9.6045	1.35	0.00000	-0.3806
B	6.75	0.1722	9.92	0.00000	0.00000
Ba	498.27	10.058	0.13	0.00000	0.00000
BE	283.81	1.0017	0.34	0.00000	0.00000
Ca	11.84	0.0313	0.26	0.00000	0.00000
CD	8.92	0.0151	19.12	0.00000	0.00000
Ce	33.43	9.7509	0.27	0.00000	-0.2479
CO	60.57	9.8582	0.59	0.00000	-0.0574
Cr	5.96	-0.100	-1.15	0.00000	-0.1169
CU	312.10	10.036	0.10	0.00000	0.00000
Dy	7.45	0.0185	4.56	0.00000	0.00000
Fe	186.54	10.004	0.27	0.00000	0.00000
K	24.16	-0.067	-15.00	0.00000	0.00000
La	8.66	0.0674	3.37	0.00000	0.00000
Li	5.46	-0.002	-25.00	0.00000	0.00000
Mg	1500.91	10.002	0.22	0.00000	0.00000
Mn	6.37	0.0027	5.15	0.00000	0.00000
Mo	198.35	9.9852	0.24	0.00000	0.00000
Na	22.37	10.260	0.12	0.00000	0.00000
Nd	5.59	-0.024	-30.68	0.00000	-0.1169
Ni	59.13	9.9731	0.38	0.00000	0.00000
P	16.05	0.5588	11.76	0.00000	0.00000
PB	39.87	9.8783	0.24	0.00000	-0.0961
Re	5.41	0.0117	16.43	0.00000	0.00000
Rh	38.16	10.022	0.21	0.00000	0.00000
Ru	9.57	0.0236	21.75	0.00000	-0.1020
SB	11.32	10.115	-0.15	0.00000	-18.225
SE	10.82	1.3446	4.89	0.00000	-0.3282
Si	6.37	0.1757	2.15	0.00000	0.00000
Sr	1455.43	10.061	0.24	0.00000	0.00000
Te	22.62	9.9771	0.10	0.00000	0.00000
TH	11.57	0.0558	20.94	0.00000	-0.8147
Ti	96.16	10.032	0.23	0.00000	0.00000
TL	5.97	1.4253	15.58	0.00000	-0.9351
U	61.02	33.233	0.32	0.00000	-2.1876
V	324.36	9.9761	0.30	0.00000	-0.0366
Zn	393.98	9.9688	0.30	0.00000	0.00000
Zr	211.60	10.016	0.26	0.00000	0.00000

```
More samples [Y/N] ?
Sample name     = CL1
Sample number   = 1036
Sample code 1   =
Sample code 2   =
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H6n
Sample name     : CL1
Sample number   : 1036
Programme       : ALLELE   14-May-90    12:07:18
[1] Direct Intensities
```

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Ca	3.36000	CD	7.47000	Ce	11.7000	CO	33.3000	Cr	5.29000	CU	10.4900
Dy	6.65000	Fe	5.53000	K	24.7100	La	7.39000	Li	5.13000	Mg	3.01000
Mn	5.44000	Mo	4.99000	Na	5.78000	Nd	5.07000	Ni	4.51000	P	11.9700
PB	7.11000	Re	4.68000	Rh	8.58000	Ru	8.49000	SB	3.80000	SE	7.60000
Si	5.36000	Sr	5.61000	Te	4.30000	TH	7.60000	Ti	3.85000	TL	4.67000
U	30.3700	V	8.68000	Zn	4.21000	Zr	6.86000				

[1] Direct Intensities

AG	5.08000	Al	9.67000	AS	12.7000	B	5.25000	Ba	5.71000	BE	6.10000
Ca	3.38000	CD	7.50000	Ce	11.7600	CO	33.3500	Cr	5.27000	CU	10.3900
Dy	6.65000	Fe	5.53000	K	24.7200	La	7.39000	Li	5.14000	Mg	3.01000
Mn	5.45000	Mo	5.07000	Na	5.76000	Nd	5.04000	Ni	4.51000	P	11.9600
PB	7.24000	Re	4.67000	Rh	8.59000	Ru	8.49000	SB	3.84000	SE	7.58000
Si	5.37000	Sr	5.60000	Te	4.26000	TH	7.59000	Ti	3.85000	TL	4.66000
U	30.3400	V	8.67000	Zn	4.20000	Zr	6.85000				

[1] Direct Intensities

AG	5.10000	Al	9.66000	AS	13.0000	B	5.20000	Ba	5.70000	BE	6.11000
Ca	3.43000	CD	7.55000	Ce	11.7500	CO	33.4200	Cr	5.26000	CU	10.3900
Dy	6.64000	Fe	5.53000	K	24.7600	La	7.39000	Li	5.13000	Mg	3.01000
Mn	5.44000	Mo	4.98000	Na	5.77000	Nd	5.03000	Ni	4.52000	P	11.8200
PB	7.25000	Re	4.71000	Rh	8.58000	Ru	8.51000	SB	3.80000	SE	7.58000
Si	5.36000	Sr	5.59000	Te	4.30000	TH	7.59000	Ti	3.84000	TL	4.70000
U	30.3400	V	8.68000	Zn	4.19000	Zr	6.82000				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.49	-0.001	-131.78	0.00000	0.00050
Al	13.78	0.0118	20.00	0.00000	0.00000
AS	13.09	0.0105	424.33	0.00000	0.00172
B	5.60	0.0525	5.97	0.00000	0.00000
Ba	6.19	-0.000	-173.16	0.00000	0.00000
BE	7.31	0.0000	149.95	0.00000	0.00000
Ca	4.03	0.0002	77.26	0.00000	0.00000
CD	8.45	-0.002	-57.74	0.00000	0.00000
Ce	12.45	-0.032	-6.17	0.00000	0.00145
CO	31.58	-0.072	-12.65	0.00000	0.00034
Cr	5.76	-0.002	-71.13	0.00000	0.00068
CU	10.92	-0.000	-138.57	0.00000	0.00000
Dy	7.09	-0.002	-11.55	0.00000	0.00000
Fe	5.91	-0.000	0.00	0.00000	0.00000
K	24.22	-0.029	-40.75	0.00000	0.00000
La	7.77	-0.001	0.00	0.00000	0.00000
Li	5.48	-0.001	-34.64	0.00000	0.00000
Mg	3.50	0.0001	0.00	0.00000	0.00000
Mn	6.12	-0.000	-15.75	0.00000	0.00000
Mo	6.06	0.0000	6601000	0.00000	0.00000
Na	6.31	-0.011	-42.86	0.00000	0.00000
Nd	5.42	-0.011	-82.40	0.00000	0.00068
Ni	5.32	-0.005	-17.32	0.00000	0.00000
P	14.85	-0.027	-100.64	0.00000	0.00000
PB	8.44	0.0045	411.56	0.00000	0.00055
Re	5.30	-0.001	-156.11	0.00000	0.00000
Rh	9.89	-0.009	-19.25	0.00000	0.00000
Ru	8.75	-0.003	-65.54	0.00000	0.00000
SB	4.28	0.1270	42.04	0.00000	0.13282
SE	8.60	-0.023	-27.53	0.00000	0.00243
Si	5.94	-0.009	-21.65	0.00000	0.00000
Sr	6.01	-0.000	-75.81	0.00000	0.00000
Te	5.34	0.0040	230.54	0.00000	0.00000
TH	9.74	-0.017	-13.96	0.00000	0.00477

```
Ti          3.51    -0.002   -24.74  0.00000  0.00000
TL          5.69    0.4920    22.80  0.00000  0.00547
U          29.59    -0.207    -6.51  0.00000  0.00033
V           9.19    -0.001    -2.52  0.00000  0.00023
Zn          5.32    -0.001   -33.34  0.00000  0.00000
Zr          7.41    -0.002   -48.84  0.00000  0.00000


More samples [Y/N] ?
Sample name     = 90-794
Sample number   = 1037
Sample code 1   = TK108
Sample code 2   = 10XDIL
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H6n
Sample name     : 90-794
Sample number   : 1037
Sample code 1   : TK108
Sample code 2   : 10XDIL
Programme       : ALLELE   14-May-90    12:12:35
[1] Direct Intensities
AG   5.18000 Al   9.81000 AS   12.8000 B    5.68000 Ba   6.59000 BE   6.16000
Ca   156.900 CD   7.62000 Ce   11.8100 CO   33.5700 Cr   6.06000 CU   10.6600
Dy   6.71000 Fe   10.4100 K    25.1400 La   7.46000 Li   5.16000 Mg   6.36000
Mn   148.800 Mo   5.01000 Na   1163.00 Nd   5.09000 Ni   4.98000 P    12.0700
PB   7.28000 Re   4.69000 Rh   8.66000 Ru   8.62000 SB   3.80000 SE   7.89000
Si   5.58000 Sr   6.71000 Te   4.28000 TH   7.64000 Ti   9.68000 TL   4.71000
U    30.9900 V    8.76000 Zn   5.41000 Zr   48.6400
[1] Direct Intensities
AG   5.19000 Al   9.81000 AS   13.0200 B    5.66000 Ba   6.60000 BE   6.15000
Ca   156.700 CD   7.60000 Ce   11.9000 CO   33.5500 Cr   6.06000 CU   10.6700
Dy   6.73000 Fe   10.4100 K    25.0600 La   7.43000 Li   5.16000 Mg   6.35000
Mn   148.500 Mo   5.18000 Na   1164.00 Nd   5.07000 Ni   4.96000 P    11.7500
PB   7.26000 Re   4.73000 Rh   8.66000 Ru   8.55000 SB   3.83000 SE   7.85000
Si   5.55000 Sr   6.68000 Te   4.30000 TH   7.62000 Ti   9.67000 TL   4.70000
U    30.9600 V    8.79000 Zn   5.42000 Zr   48.7000
[1] Direct Intensities
AG   5.18000 Al   9.81000 AS   13.1000 B    5.59000 Ba   6.63000
Ca   156.300 CD   7.59000 Ce   11.8300 CO   33.6100 Cr   6.06
Dy   6.72000 Fe   10.3800 K    25.1400 La   7.45
Mn   148.600 Mo   5.19000 Na   1158.00 N
PB   7.36000 Re   4.71000 Rh                                                7.8000
Si   5.55000 Sr                                                   TL   4.71
U    31.0400 V

NAME                                                  :

AG                                          -0.0047
                                      00  0.00000
                                 71  0.006
                               4.39  0.
                        0137
            7.35    0.0
          138.07                                    /
CD
Ce
```

					0.00000
				300	0.00000
			.11	0.00000	0.00000
		36	89.26	0.00000	0.00000
		3563.82	0.28	0.00000	0.00000
	5.45	0.0020	219.51	0.00000	-0.0010
	5.66	0.0588	2.36	0.00000	0.00000
P	14.85	-0.030	-171.54	0.00000	0.00000
PB	8.51	0.0271	46.50	0.00000	-0.0009
Re	5.32	0.0009	200.03	0.00000	0.00000
Rh	9.95	0.0128	13.32	0.00000	0.00000
Ru	8.81	0.0060	67.21	0.00000	-0.0020
SB	4.27	-0.010	-129.78	0.00000	0.04240
SE	8.80	0.1092	24.07	0.00000	-0.0183
Si	6.09	0.0557	18.19	0.00000	0.00000
Sr	6.79	0.0053	1.61	0.00000	0.00000
Te	5.36	0.0148	113.55	0.00000	0.00000
TH	9.78	-0.009	-76.64	0.00000	-0.0069
Ti	9.12	0.5010	0.17	0.00000	0.00000
TL	5.72	0.6487	4.74	0.00000	-0.0080
U	30.04	-0.021	-153.62	0.00000	-0.3222
V	9.27	0.0009	51.44	0.00000	0.00002
Zn	6.27	0.0237	0.84	0.00000	0.00000
Zr	37.51	1.4755	0.03	0.00000	0.00000

```
More samples [Y/N] ?
Sample name     = 901872
Sample number   = 1038
Sample code 1   = TK106
Sample code 2   = 10XDIL
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H&n
Sample name     : 901872
Sample number   : 1038
Sample code 1   : TK106
Sample code 2   : 10XDIL
Programme       : ALLELE   14-May-90    12:18:13
[1] Direct Intensities
AG   5.09000 Al   95.5000 AS   16.2100 B    190.100 Ba   291.100 BE   6.28000
Ca   2819.00 CD   7.69000 Ce   11.7700 CO   33.3300 Cr   5.65000 CU   72.6200
Dy   6.68000 Fe   198.000 K    27.1200 La   7.55000 Li   5.29000 Mg   148.900
Mn   8.62000 Mo   5.63000 Na   88.5300 Nd   5.08000 Ni   4.60000 P    12.7600
PB   7.81000 Re   4.69000 Rh   8.58000 Ru   9.20000 SB   3.80000 SE   7.95000
Si   37.6300 Sr   23.7900 Te   4.35000 TH   7.58000 Ti   5.65000 TL   4.69000
U    30.6400 V    8.79000 Zn   18.6500 Zr   9.07000
[1] Direct Intensities
AG   5.07000 Al   95.6200 AS   16.0000 B    191.600 Ba   290.900 BE   6.29000
Ca   2821.00 CD   7.75000 Ce   11.7900 CO   33.4000 Cr   5.65000 CU   72.6800
Dy   6.69000 Fe   198.400 K    27.1200 La   7.55000 Li   5.27000 Mg   149.000
Mn   8.61000 Mo   5.74000 Na   88.5700 Nd   5.09000 Ni   4.60000 P    12.6800
```

PB	7.81000	Re	4.70000	Rh	8.53000	Ru	9.14000	SB	3.90000	SE	7.30000
Si	37.6600	Sr	23.8000	Te	4.33000	TH	7.59000	Ti	5.69000	TL	4.71000
U	30.6900	V	8.80000	Zn	18.7600	Zr	9.01000				

[1] Direct Intensities

AG	5.05000	Al	95.7400	AS	16.1600	B	191.800	Ba	291.400	BE	6.25000
Ca	2823.00	CD	7.68000	Ce	11.7500	CO	33.3400	Cr	5.63000	CU	72.7900
Dy	6.66000	Fe	197.900	K	27.1100	La	7.56000	Li	5.26000	Mg	148.900
Mn	8.61000	Mo	5.64000	Na	88.7500	Nd	5.07000	Ni	4.60000	P	12.3900
PB	7.68000	Re	4.76000	Rh	8.57000	Ru	9.15000	SB	3.84000	SE	7.87000
Si	37.5900	Sr	23.7900	Te	4.33000	TH	7.57000	Ti	5.66000	TL	4.69000
U	30.6000	V	8.76000	Zn	18.7500	Zr	8.99000				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.47	-0.003	-55.74	0.00000	-0.0001
Al	79.02	)20.296	0.10	0.00000	0.00000
AS	15.24	0.2658	6.56	0.00000	-0.2992
B	144.17	)14.473	0.50	0.00000	0.00000
Ba	219.19	4.3535	0.09	0.00000	0.00000
BE	7.43	0.0004	12.25	0.00000	0.00000
Ca	2284.68	9.1118	0.07	0.00000	0.00000
CD	8.60	0.0037	29.12	0.00000	0.00000
Ce	12.46	-0.029	-23.99	0.00000	-0.0002
CO	31.57	-0.077	-11.75	0.00000	-0.0000
Cr	6.04	0.0247	2.93	0.00000	-0.0001
CU	55.31	1.4790	0.14	0.00000	0.00000
Dy	7.11	-0.001	-49.49	0.00000	0.00000
Fe	149.27	7.9398	0.14	0.00000	0.00000
K	26.08	1.1684	0.25	0.00000	0.00000
La	7.89	0.0077	4.23	0.00000	0.00000
Li	5.59	0.0069	12.39	0.00000	0.00000
Mg	109.64	0.7090	0.04	0.00000	0.00000
Mn	8.49	0.0282	0.18	0.00000	0.00000
Mo	6.57	0.0265	9.26	0.00000	0.00000
Na	69.48	40.480	0.14	0.00000	0.00000
Nd	5.45	0.0029	149.98	0.00000	-0.0001
Ni	5.38	0.0074	0.00	0.00000	0.00000
P	15.31	0.1955	31.91	0.00000	0.00000
PB	8.86	0.1156	15.48	0.00000	-0.0244
Re	5.33	0.0015	227.17	0.00000	0.00000
Rh	9.88	-0.011	-15.75	0.00000	0.00000
Ru	9.24	-0.007	-51.97	0.00000	-0.0010
SB	4.27	0.0879	26.91	0.00000	0.14043
SE	8.82	0.0356	121.39	0.00000	-0.1066
Si	38.86	10.554	0.11	0.00000	0.00000
Sr	18.94	0.0896	0.03	0.00000	0.00000
Te	5.38	0.0243	19.24	0.00000	0.00000
TH	9.73	-0.029	-13.55	0.00000	-0.0005
Ti	5.95	0.1549	0.85	0.00000	0.00000
TL	5.71	0.5940	10.35	0.00000	-0.0006
U	29.79	0.0071	493.00	0.00000	-0.0165
V	9.27	0.0009	52.80	0.00000	-0.0000
Zn	16.61	0.2890	0.42	0.00000	0.00000
Zr	8.97	0.0755	1.95	0.00000	0.00000

More samples [Y/N] ?
Sample name = 90-794
Sample number = 1039
Sample code 1 = NI

Sample code 2 = 10XDIL
Sample code 3 =
Weight =

Press <CR> when ready to start measurement
24:132Hém
Sample name : 90-794
Sample number : 1039
Sample code 1 : NI
Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 12:25:18

[1] Direct Intensities

AG	5.11000	Al	9.95000	AS	14.3200	B	6.25000	Ba	6.01000	BE	6.16000
Ca	36.5200	CD	8.40000	Ce	11.8600	CO	33.7600	Cr	5.70000	CU	10.9700
Dy	6.71000	Fe	9.63000	K	3460.00	La	7.44000	Li	5.13000	Mg	8.30000
Mn	107.000	Mo	5.11000	Na	6.96000	Nd	5.08000	Ni	783.500	P	12.5000
PB	7.57000	Re	4.95000	Rh	8.71000	Ru	8.80000	SB	4.23000	SE	7.90000
Si	5.66000	Sr	5.75000	Te	4.39000	TH	7.65000	Ti	7.15000	TL	4.79000
U	30.5800	V	8.88000	Zn	25.0200	Zr	7.03000				

[1] Direct Intensities

AG	5.13000	Al	9.98000	AS	14.0900	B	6.13000	Ba	6.06000	BE	6.18000
Ca	36.6900	CD	8.58000	Ce	11.8900	CO	33.9900	Cr	5.74000	CU	11.0300
Dy	6.78000	Fe	9.65000	K	3471.00	La	7.48000	Li	5.16000	Mg	8.35000
Mn	108.000	Mo	5.07000	Na	6.99000	Nd	5.09000	Ni	791.600	P	12.8900
PB	7.58000	Re	5.01000	Rh	8.75000	Ru	8.82000	SB	4.24000	SE	7.87000
Si	5.65000	Sr	5.75000	Te	4.39000	TH	7.67000	Ti	7.20000	TL	4.79000
U	30.7800	V	8.97000	Zn	25.2700	Zr	7.06000				

[1] Direct Intensities

AG	5.13000	Al	9.97000	AS	14.1200	B	5.99000	Ba	6.00000	BE	6.19000
Ca	36.8100	CD	8.54000	Ce	11.8900	CO	33.9900	Cr	5.74000	CU	11.0300
Dy	6.77000	Fe	9.67000	K	3475.00	La	7.50000	Li	5.16000	Mg	8.38000
Mn	108.100	Mo	5.14000	Na	7.00000	Nd	5.09000	Ni	793.400	P	12.2400
PB	7.71000	Re	5.00000	Rh	8.75000	Ru	8.86000	SB	4.28000	SE	8.00000
Si	5.68000	Sr	5.76000	Te	4.39000	TH	7.69000	Ti	7.21000	TL	4.78000
U	30.8100	V	8.95000	Zn	25.4000	Zr	7.08000				

NAME	MV INT	CONCEN	RSD	BCOR	SCOR
AG	5.51	0.0014	49.65	0.00000	-0.0002
Al	14.02	0.0841	4.28	0.00000	0.00000
AS	14.00	0.2415	8.14	0.00000	-0.0028
B	6.25	0.1207	8.36	0.00000	0.00000
Ba	6.45	0.0052	10.50	0.00000	0.00000
BE	7.36	0.0082	20.83	0.00000	0.00000
Ca	30.97	0.1078	8.44	0.00000	0.00000
CD	9.22	0.0262	10.16	0.00000	0.00000
Ce	12.54	0.0166	54.36	0.00000	-0.0006
CO	31.96	0.0570	55.97	0.00000	-0.0001
Cr	6.10	0.0305	4.44	0.00000	-0.0003
CU	11.35	0.0140	5.87	0.00000	0.00000
Dy	7.16	0.0023	66.81	0.00000	0.00000
Fe	8.97	0.1696	0.49	0.00000	0.00000
K	2725.30	)1739.4	0.23	0.00000	0.00000
La	7.83	0.0032	53.91	0.00000	0.00000
Li	5.49	0.0000		0.00000	0.00000
Mg	7.38	0.0260	0.75	0.00000	0.00000
Mn	82.72	0.9210	0.60	0.00000	0.00000
Mo	6.13	0.0038	37.63	0.00000	0.00000
Na	7.24	0.5865	1.75	0.00000	0.00000
Nd	5.45	0.0057	39.77	0.00000	-0.0003

Ni	593.39	1109.85	0.67	0.00000	0.00000
P	15.26	0.1741	66.21	0.00000	0.00000
PB	8.75	0.1845	17.69	0.00000	-0.0003
Re	5.54	0.0265	11.21	0.00000	0.00000
Rh	10.82	0.0365	18.72	0.00000	0.00000
Ru	8.99	0.0338	10.33	0.00000	-0.0017
SB	4.46	0.6081	-2.05	0.00000	-0.1044
SE	8.86	0.1616	23.76	0.00000	-0.0098
Si	6.17	0.0895	5.59	0.00000	0.00000
Sr	6.12	0.0007	4.12	0.00000	0.00000
Te	5.41	0.0459	0.00	0.00000	0.00000
TH	9.82	0.0123	59.05	0.00000	-0.0020
Ti	7.16	0.2874	0.46	0.00000	0.00000
TL	5.78	1.0788	2.65	0.00000	-0.0023
U	29.85	0.0853	115.17	0.00000	-0.0013
V	9.38	0.0043	23.37	0.00000	-0.0001
Zn	21.67	0.4188	0.92	0.00000	0.00000
Zr	7.56	0.0060	14.80	0.00000	0.00000

```
More samples [Y/N] ?
Sample name     = 90-794
Sample number   = 1040
Sample code 1   = NI
Sample code 2   = 100X
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H6n
Sample name     : 90-794
Sample number   : 1040
Sample code 1   : NI
Sample code 2   : 100X
Programme       : ALLELE    14-May-90    12:32:47
[1] Direct Intensities
AG   5.84000 Al   9.60000 AS   12.7000 B    5.20000 Ba   5.68000 BE   6.08000
Ca   11.0000 CD   7.60000 Ce   11.6400 CO   33.0400 Cr   5.28000 CU   10.4200
Dy   6.60000 Fe   5.90000 K    406.100 La   7.33000 Li   5.09000 Mg   3.86000
Mn   16.2700 Mo   4.94000 Na   5.88000 Nd   5.00000 Ni   88.9700 P    11.8100
PB   7.18000 Re   4.63000 Rh   8.53000 Ru   8.46000 SB   3.88000 SE   7.64000
Si   5.33000 Sr   5.58000 Te   4.26000 TH   7.54000 Ti   4.18000 TL   4.66000
U    30.0600 V    8.59000 Zn   6.44000 Zr   6.80000
[1] Direct Intensities
AG   5.85000 Al   9.62000 AS   12.7300 B    5.18000 Ba   5.70000 BE   6.08000
Ca   10.9800 CD   7.41000 Ce   11.6800 CO   33.1400 Cr   5.30000 CU   10.4200
Dy   6.60000 Fe   5.93000 K    402.000 La   7.37000 Li   5.11000 Mg   3.88000
Mn   16.2800 Mo   4.98000 Na   5.89000 Nd   5.01000 Ni   88.6900 P    12.1300
PB   7.22000 Re   4.66000 Rh   8.54000 Ru   8.51000 SB   3.82000 SE   7.74000
Si   5.36000 Sr   5.57000 Te   4.29000 TH   7.57000 Ti   4.20000 TL   4.69000
U    30.1600 V    8.65000 Zn   6.41000 Zr   6.81000
[1] Direct Intensities
AG   5.84000 Al   9.60000 AS   12.8900 B    5.14000 Ba   5.70000 BE   6.08000
Ca   10.9900 CD   7.58000 Ce   11.6600 CO   33.1200 Cr   5.30000 CU   10.4200
Dy   6.59000 Fe   5.98000 K    403.400 La   7.34000 Li   5.11000 Mg   3.84000
Mn   16.2800 Mo   4.90000 Na   5.90000 Nd   4.99000 Ni   88.5800 P    11.9100
PB   7.17000 Re   4.66000 Rh   8.54000 Ru   8.36000 SB   3.81000 SE   7.70000
Si   5.34000 Sr   5.58000 Te   4.25000 TH   7.54000 Ti   4.19000 TL   4.69000
U    30.1100 V    8.64000 Zn   6.45000 Zr   6.80000
```

NAME	MV INT	CONCEN	RED	ECOR	SCOR
AG	5.46	-0.004	-9.55	0.00000	0.00095
Al	13.74	-0.001	-346.45	0.00000	0.00000
AS	13.11	0.0167	98.61	0.00000	0.00349
B	5.55	0.0471	5.04	0.00000	0.00000
Ba	6.19	-0.000	-86.60	0.00000	0.00000
BE	7.29	-0.000	0.00	0.00000	0.00000
Ca	10.19	0.0247	0.13	0.00000	0.00000
CD	8.47	-0.001	-223.73	0.00000	0.00000
Ce	12.38	-0.065	-10.55	0.00000	0.00277
CO	31.39	-0.139	-9.17	0.00000	0.00064
Cr	5.77	0.0006	122.71	0.00000	0.00131
CU	10.94	0.0005	173.21	0.00000	0.00000
Dy	7.05	-0.004	-5.77	0.00000	0.00000
Fe	6.19	0.0154	4.64	0.00000	0.00000
K	321.54	)191.44	0.55	0.00000	0.00000
La	7.74	-0.004	-29.74	0.00000	0.00000
Li	5.46	-0.003	-24.74	0.00000	0.00000
Mg	4.12	0.0042	2.30	0.00000	0.00000
Mn	14.23	0.0973	0.05	0.00000	0.00000
Mo	6.00	-0.003	-54.55	0.00000	0.00000
Na	6.40	0.0472	10.34	0.00000	0.00000
Nd	5.39	-0.032	-13.79	0.00000	0.00131
Ni	68.43	)11.698	0.24	0.00000	0.00000
P	14.87	-0.016	-327.42	0.00000	0.00000
PB	8.43	0.0027	233.74	0.00000	0.00107
Re	5.27	-0.005	-34.64	0.00000	0.00000
Rh	9.85	-0.023	-7.53	0.00000	0.00000
Ru	8.71	-0.009	-102.16	0.00000	-0.0002
SB	4.28	0.2436	17.60	0.00000	0.25529
SE	8.68	0.0408	70.58	0.00000	0.00380
Si	5.92	-0.015	-32.73	0.00000	0.00000
Sr	6.00	-0.000	-15.75	0.00000	0.00000
Te	5.33	-0.004	-208.16	0.00000	0.00000
TH	9.70	-0.034	-21.76	0.00000	0.00911
Ti	4.79	0.0276	3.13	0.00000	0.00000
TL	5.70	0.5150	17.98	0.00000	0.01046
U	29.42	-0.396	-9.94	0.00000	0.00064
V	9.15	-0.002	-29.83	0.00000	0.00044
Zn	7.05	0.0439	0.94	0.00000	0.00000
Zr	7.38	-0.003	-6.93	0.00000	0.00000

```
More samples [Y/N] ?
Sample name     = CH3
Sample number   = 1041
Sample code 1   =
Sample code 2   =
Sample code 3   =
Weight          =

Press <CR> when ready to start measurement
24;132H6n
Sample name     : CH3
Sample number   : 1041
Programme       : ALLELE   14-May-90    12:39:33
[1] Direct Intensities
AG   5.59000 Al   52.6900 AS   25.1900 B    135.600 Ba   5.90000 BE   6.62000
Ca   3151.00 CD   370.100 Ce   12.6400 CO   34.5400 Cr   145.000 CU   12.5800
```

Dy	258.100	Fe	5.55000	K	124.200	La	189.300	Li	369.100	Mo	5.71000
Mn	1134.00	Mo	5.88000	Na	213.400	Nd	27.6800	Ni	5.15000	P	43.4000
PB	8.50000	Re	114.700	Rh	10.0500	Ru	97.1500	SB	3.98000	SE	29.9700
Si	36.3500	Sr	18.6500	Te	5.36000	TH	28.9900	Ti	4.31000	TL	6.57000
U	32.1800	V	10.4400	Zn	4.58000	Zr	32.9700				

[1] Direct Intensities

AG	5.68000	Al	52.8000	AS	25.4700	B	136.900	Ba	5.90000	BE	6.64000
Ca	3153.00	CD	371.000	Ce	12.6600	CO	34.6000	Cr	145.600	CU	12.6000
Dy	258.500	Fe	6.01000	K	124.700	La	188.600	Li	370.100	Mg	3.73000
Mn	1136.00	Mo	5.93000	Na	214.200	Nd	27.6800	Ni	5.19000	P	43.6800
PB	8.56000	Re	115.200	Rh	10.1100	Ru	97.9200	SB	3.98000	SE	30.0400
Si	36.5000	Sr	18.7100	Te	5.34000	TH	29.0300	Ti	4.33000	TL	6.52000
U	32.2100	V	10.4500	Zn	4.58000	Zr	33.0600				

[1] Direct Intensities

AG	5.59000	Al	53.0000	AS	25.2500	B	138.000	Ba	5.89000	BE	6.64000
Ca	3171.00	CD	372.900	Ce	12.6600	CO	34.6100	Cr	146.200	CU	12.6200
Dy	259.600	Fe	6.00000	K	124.900	La	189.500	Li	371.300	Mg	3.72000
Mn	1141.00	Mo	5.94000	Na	214.800	Nd	27.9100	Ni	5.19000	P	44.0900
PB	8.49000	Re	115.300	Rh	10.0800	Ru	98.2400	SB	3.95000	SE	30.1000
Si	36.5900	Sr	18.7400	Te	5.38000	TH	29.1600	Ti	4.34000	TL	6.54000
U	32.2100	V	10.4800	Zn	4.58000	Zr	33.1400				

NAME	MV INT	CONCEN	RSD	SCOR	SCOR
AG	5.84	0.0373	1.19	0.00000	-0.0030
Al	46.54	10.196	0.36	0.00000	0.00000
AS	21.09	1.9394	1.22	0.00000	-0.1388
B	103.68	10.259	0.91	0.00000	0.00000
Ba	6.34	0.0029	3.04	0.00000	0.00000
BE	7.67	0.0013	2.18	0.00000	0.00000
Ca	2557.72	10.203	0.35	0.00000	0.00000
CD	289.52	10.233	0.39	0.00000	0.00000
Ce	13.12	0.2761	1.45	0.00000	-0.0087
CO	32.43	0.2168	4.20	0.00000	-0.0020
Cr	112.16	10.209	0.43	0.00000	-0.0041
CU	12.48	0.0518	0.92	0.00000	0.00000
Dy	186.68	10.224	0.31	0.00000	0.00000
Fe	6.25	0.0190	3.32	0.00000	0.00000
K	102.54	50.404	0.36	0.00000	0.00000
LA	138.36	10.195	0.34	0.00000	0.00000
Li	292.59	20.306	0.38	0.00000	0.00000
Mg	4.01	0.0035	1.37	0.00000	0.00000
Mn	853.76	10.195	0.32	0.00000	0.00000
Mo	6.76	0.0365	3.56	0.00000	0.00000
Na	165.17	101.63	0.34	0.00000	0.00000
Nd	21.44	10.162	0.33	0.00000	-0.0041
Ni	5.82	0.0089	0.98	0.00000	0.00000
P	35.77	10.168	1.09	0.00000	0.00000
PB	9.43	0.3045	2.96	0.00000	-0.0156
Re	93.22	10.203	0.29	0.00000	0.00000
Rh	11.14	0.4341	2.85	0.00000	0.00000
Ru	74.43	10.229	0.63	0.00000	-0.0002
SB	4.34	-0.183	-7.47	0.00000	-0.4045
SE	25.66	10.160	0.56	0.00000	-2.9109
Si	29.98	10.179	0.39	0.00000	0.00000
Sr	15.32	0.0645	0.35	0.00000	0.00000
Te	6.09	0.4385	1.85	0.00000	0.00000
TH	30.69	10.166	0.41	0.00000	-0.0287
Ti	4.90	0.0394	3.34	0.00000	0.00000
TL	7.21	10.544	1.29	0.00000	-0.0330

U	10.87	1.0459	1.17	1.00000	-0.1619
V	10.52	0.0394	1.27	0.00000	-0.0012
Zn	5.61	0.0070	0.50	0.00000	0.00000
Zr	26.28	0.9244	0.32	0.00000	0.00000

More samples [Y/N] ? N

>

SET

```
Result file = Result file = Result file =
Result file = TK02
Sample name     : =
Sample number   : =
Sample code 1   : =
Sample code 2   : =
Sample code 3   : =
Programme       : =
Date            : =
Time            : =
Sample mode     : =
Calc mode       : =
Mode number     : =
Step [Y/N] ? N
Devices (P for printer) = P

Sample name     : CH3
Sample number   : 1029
Programme       : ALLELE   14-May-90    11:23:20
AG   0.03714 Al   10.0574 AS   1.89493 B    10.0698 Ba   0.00285 BE   0.00121
Ca   10.0733 CD   10.0441 Ce   0.25981 CO   0.19915 Cr   10.0446 CU   0.05051
Dy   10.0636 Fe   0.01787 K    50.2357 La   10.0581 Li   20.1539 Mg   0.00366
Mn   10.0481 Mo   0.03176 Na   100.700 Nd   10.0489 Ni   0.08475 P    10.0385
PB   0.29117 Re   10.0493 Rh   0.42423 Ru   10.0453 SB   -0.0918 SE   9.92657
Si   10.0426 Sr   0.06360 Te   0.42768 TH   10.0246 Ti   0.03945 TL   9.69786
U    1.00792 V    0.03844 Zn   0.00698 Zr   0.91083

Sample name     : CL1
Sample number   : 1030
Programme       : ALLELE   14-May-90    11:30:00
AG   0.00015 Al   0.01730 AS   0.00095 B    0.04085 Ba   0.00056 BE   0.00006
Ca   0.00017 CD   -0.0009 Ce   0.00318 CO   0.01278 Cr   0.00080 CU   0.00111
Dy   0.00054 Fe   0.00137 K    0.04209 La   0.00169 Li   0.00037 Mg   0.00003
Mn   0.00021 Mo   0.00027 Na   0.00000 Nd   0.00731 Ni   -0.0000 P    0.02244
PB   0.01584 Re   -0.0009 Rh   0.01085 Ru   0.00304 SB   0.04055 SE   0.04201
Si   0.00218 Sr   0.00010 Te   0.00540 TH   0.00196 Ti   0.00115 TL   0.12475
U    0.05227 V    0.00018 Zn   -0.0005 Zr   0.00094

Sample name     : 901871
Sample number   : 1031
Sample code 1   : TK104
Sample code 2   : DIRECT
Programme       : ALLELE   14-May-90    11:35:55
AG   -0.0036 Al   0.27208 AS   -0.0450 B    0.49509 Ba   0.17195 BE   0.00016
Ca   1.13719 CD   0.01869 Ce   -0.0571 CO   -0.1241 Cr   0.04734 CU   0.45613
Dy   -0.0022 Fe   0.71318 K    0.18519 La   0.18117 Li   0.00111 Mg   0.25700
Mn   0.21850 Mo   0.04562 Na   4.14458 Nd   -0.0196 Ni   0.13152 P    1.03953
PB   1.41223 Re   -0.0022 Rh   -0.0128 Ru   0.02138 SB   0.26891 SE   -0.0615
Si   1.76798 Sr   1.38757 Te   -0.0000 TH   -0.1057 Ti   0.01699 TL   0.03562
U    4.05619 V    -0.0062 Zn   0.10995 Zr   0.25161

Sample name     : 90-791
Sample number   : 1032
Sample code 1   : TK101
```

Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 11:42:33

AG	0.00298	Al	9.78055	AS	0.10514	B	0.05667	Ba	1.97765	BE	0.00015
Ca	4.15219	CD	0.01331	Ce	0.00028	CO	-0.0042	Cr	0.09858	CU	0.01441
Dy	0.00095	Fe	0.81956	K	1.61116	La	0.00412	Li	0.00297	Mg	0.20959
Mn	0.05418	Mo	0.02220	Na	30.0315	Nd	0.00766	Ni	0.16671	P	9.67949
PB	0.05203	Re	0.00277	Rh	0.00907	Ru	0.00769	SB	0.13515	SE	0.00740
Si	6.28615	Sr	0.04105	Te	0.00270	TH	0.00497	Ti	0.00034	TL	0.39301
U	0.11961	V	0.00090	Zn	0.04274	Zr	0.04097				

Sample name : 90-792
Sample number : 1033
Sample code 1 : TK102
Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 11:48:58

AG	-0.0038	Al	)40.5575	AS	0.48431	B	)35.7497	Ba	0.21799	BE	0.00075
Ca	)14.9456	CD	0.00863	Ce	-0.0311	CO	-0.0824	Cr	0.02365	CU	0.03396
Dy	-0.0004	Fe	4.82126	K	2.00007	La	0.00955	Li	0.01335	Mg	0.51130
Mn	0.03318	Mo	0.01749	Na	80.0657	Nd	0.00675	Ni	0.02964	P	3.34402
PB	0.14600	Re	0.00493	Rh	-0.0217	Ru	-0.0041	SB	0.22414	SE	0.01853
Si	)33.4312	Sr	0.16162	Te	0.03913	TH	-0.0225	Ti	0.29514	TL	0.22843
U	0.19133	V	0.00272	Zn	0.33424	Zr	0.13304				

) Indicates overrange

Sample name : 90-793
Sample number : 1034
Sample code 1 : TK103
Sample code 2 : 10XDIL
Programme : ALLELE. 14-May-90 11:54:37

AG	0.00484	Al	7.69285	AS	0.09978	B	5.69891	Ba	1.66701	BE	0.00011
Ca	3.50650	CD	0.03047	Ce	-0.0448	CO	-0.1067	Cr	0.01276	CU	0.01615
Dy	-0.0015	Fe	0.50523	K	1.63305	La	-0.0002	Li	0.00167	Mg	0.22685
Mn	0.02280	Mo	0.00619	Na	30.4462	Nd	-0.0143	Ni	0.03056	P	0.57585
PB	0.08891	Re	-0.0019	Rh	-0.0178	Ru	-0.0059	SB	0.26576	SE	-0.0032
Si	8.72694	Sr	0.03563	Te	0.00485	TH	-0.0290	Ti	0.05442	TL	0.45545
U	-0.1959	V	-0.0010	Zn	0.05597	Zr	0.03226				

Sample name : CH2
Sample number : 1035
Programme : ALLELE 14-May-90 12:00:09

AG	0.00714	Al	0.38295	AS	9.60447	B	0.17218	Ba	10.0580	BE	1.00172
Ca	0.03134	CD	0.01510	Ce	9.75087	CO	9.85816	Cr	-0.0999	CU	10.0356
Dy	0.01853	Fe	10.0041	K	-0.0673	La	0.06745	Li	-0.0022	Mg	10.0016
Mn	0.00267	Mo	9.98520	Na	10.2598	Nd	-0.0241	Ni	9.97314	P	0.55876
PB	9.87930	Re	0.01171	Rh	10.0217	Ru	0.02364	SB	10.1149	SE	1.34458
Si	0.17571	Sr	10.0608	Te	9.97707	TH	0.05578	Ti	10.0317	TL	1.42526
U	33.2332	V	9.97610	Zn	9.96876	Zr	10.0165				

Sample name : CL1
Sample number : 1036
Programme : ALLELE 14-May-90 12:07:18

AG	-0.0006	Al	0.01180	AS	0.01651	B	0.05248	Ba	-0.0001	BE	0.00002
Ca	0.00015	CD	-0.0020	Ce	-0.0316	CO	-0.0721	Cr	-0.0015	CU	-0.0004
Dy	-0.0020	Fe	-0.0003	K	-0.0286	La	-0.0015	Li	-0.0009	Mg	0.00010
Mn	-0.0003	Mo	0.00000	Na	-0.0114	Nd	-0.0113	Ni	-0.0046	P	-0.0267
PB	0.00455	Re	-0.0012	Rh	-0.0089	Ru	-0.0027	SB	0.12698	SE	-0.0229

Si	-0.0097	Sr	-0.0001	Te	0.00485	TH	-0.0174	Ti	-0.0020	TL	0.49197
U	-0.2069	V	-0.0014	Zn	-0.0006	Zr	-0.0015				

Sample name : 90-794
Sample number : 1037
Sample code 1 : TK100
Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 12:12:35

AG	0.00558	Al	0.04718	AS	0.04168	B	0.00351	Ba	0.01373	BE	0.00013
Ca	0.49571	CD	0.00075	Ce	-0.0151	CO	-0.0246	Cr	0.05409	CU	0.00602
Dy	0.00095	Fe	0.20053	K	0.15657	La	0.00169	Li	0.00019	Mg	0.01631
Mn	1.28984	Mo	0.00458	Na	)563.822	Nd	0.00260	Ni	0.05881	P	-0.0299
PB	0.02714	Re	0.00092	Rh	0.01283	Ru	0.00598	SB	-0.0102	SE	0.10824
Si	0.05566	Sr	0.00531	Te	0.01484	TH	-0.0085	Ti	0.58102	TL	0.64069
U	-0.0205	V	0.00089	Zn	0.02373	Zr	1.47550				

) Indicates overrange

Sample name : 901872
Sample number : 1038
Sample code 1 : TK106
Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 12:18:13

AG	-0.0028	Al	)20.2965	AS	0.26583	B	)14.4726	Ba	4.35349	BE	0.00042
Ca	9.11178	CD	0.00366	Ce	-0.0285	CO	-0.0773	Cr	0.02467	CU	1.47897
Dy	-0.0009	Fe	7.93977	K	1.16839	La	0.00763	Li	0.00686	Mg	0.70503
Mn	0.02823	Mo	0.02651	Na	40.4003	Nd	0.00291	Ni	0.00741	P	0.19551
PB	0.11562	Re	0.00154	Rh	-0.0109	Ru	-0.0069	SB	0.00788	SE	0.03558
Si	10.5544	Sr	0.00963	Te	0.02428	TH	-0.0291	Ti	0.15491	TL	0.59398
U	0.00713	V	0.00086	Zn	0.28897	Zr	0.07547				

) Indicates overrange

Sample name : 90-794
Sample number : 1039
Sample code 1 : NI
Sample code 2 : 10XDIL
Programme : ALLELE 14-May-90 12:25:18

AG	0.00144	Al	0.08414	AS	0.24154	B	0.12073	Ba	0.00524	BE	0.00018
Ca	0.10777	CD	0.02616	Ce	0.01003	CO	0.05697	Cr	0.03053	CU	0.01401
Dy	0.00230	Fe	0.16960	K	)1739.38	La	0.00318	Li	0.00000	Mg	0.02601
Mn	0.92102	Mo	0.00377	Na	0.58047	Nd	0.00570	Ni	)109.052	P	0.17415
PB	0.10458	Re	0.02650	Rh	0.03650	Ru	0.03380	SB	0.60806	SE	0.16157
Si	0.08949	Sr	0.00869	Te	0.04587	TH	0.01228	Ti	0.28737	TL	1.07888
U	0.08527	V	0.00434	Zn	0.41880	Zr	0.00600				

) Indicates overrange

Sample name : 90-794
Sample number : 1040
Sample code 1 : NI
Sample code 2 : 100X
Programme : ALLELE 14-May-90 12:32:47

AG	-0.0040	Al	-0.0008	AS	0.01667	B	0.04705	Ba	-0.0002	BE	-0.0001
Ca	0.02473	CD	-0.0013	Ce	-0.0646	CO	-0.1385	Cr	0.00058	CU	0.00047
Dy	-0.0041	Fe	0.01539	K	)191.436	La	-0.0039	Li	-0.0026	Mg	0.00423
Mn	0.09728	Mo	-0.0030	Na	0.04715	Nd	-0.0316	Ni	)11.6977	P	-0.0165
PB	0.00267	Re	-0.0046	Rh	-0.0227	Ru	-0.0086	SB	0.24361	SE	0.04080
Si	-0.0153	Sr	-0.0002	Te	-0.0040	TH	-0.0337	Ti	0.02764	TL	0.51498

```
[illegible]  -0.3955 V    -0.0021 In   0.04394 Zr   -0.0021

) Indicates overrange

Sample name     : CH3
Sample number   : 1041
Programme       : ALLELE   14-May-90    12:39:33
AG   0.03732 Al   10.1958 AS   1.93839 B    10.2585 Ba   0.00290 BE   0.00130
Ca   10.2027 CD   10.2325 Ce   0.27606 CO   0.21678 Cr   10.2094 CU   0.05177
Dy   10.2245 Fe   0.01897 K    50.4041 La   10.1949 Li   20.3060 Mg   0.00355
Mn   10.1952 Mo   0.03647 Na   101.626 Nd   10.1619 Ni   0.08891 P    10.1677
PB   0.30450 Re   10.2034 Rh   0.43410 Ru   10.2286 SB   -0.1826 SE   10.1599
Si   10.1790 Sr   0.06452 Te   0.43848 TH   10.1600 Ti   0.03945 TL   10.5436
U    1.04694 V    0.03942 Zn   0.00698 Zr   0.92436

All results scanned
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KATAYAMA

IC ANALYSIS RESULTS

Customer CLARK HARVY

Work Package No M-67162

SAMPLE ID LAB NO(S)	Concentration, PPM / % Recovery ********** Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate
29-90 90-791 TANK 101	<20	143	<40	60	1630	204
30-90 90-792 TANK 102	1.5	65	<0.8	<0.8	405	115
31-90 90-793 TANK 103	7.6	166	<0.8	0.8	55	188
* 166-90 90-1872 TANK 106	34	152	89	73,800 *	<40	<40
32-90 90-794 TANK 108	146	218	1000	27,900	<40	152
* This sample was acidified with HNO3 prior to sampling for IC therefore this result is not valid						

LRB And Page Nos 53730-29

M&TE 94483 Analyst [signature] Date 5/21/90

Method 40.8-PNL-MA-577, VII Reviewer [signature] Date 5/21/90

TK-104 1440 gallons

IC ANALYSIS RESULTS

Customer R. STEELE/KATAYAMA Work Package No M-41817

SAMPLE ID LAB NO(S)	Concentration, PPM / % Recovery ********** Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate
165-90 90-1871 TANK 104				6287		

LRB And Page Nos 53730-8

M&TE 94483 Analyst [signature] Date 3/23/90

Method 40.8-PNL-MA-577, JTI Reviewer [signature] Date 3/23/90

IC ANALYSIS RESULTS

Customer CLARK HARVEY / KATAYAMA Work Package No M-67162

SAMPLE ID LAB NO(S)	Concentration, PPM / % Recovery					
	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate
TANK #104 90-1871		<500				
TANK #112 90-1873		<15				

LRB And Page Nos 53730-31

M&TE 94483 Analyst [signature] Date 6/8/90

Method 40.8-PNL-MA-517, VII Reviewer [signature] Date 6/13/90

CARBON ANALYSIS

Customer R. Steele Work Package No. M-41817

SAMPLE ID LAB NO(S)	Concentration, PPM				
			TIC		
	TC	TOC	As CO_2	As CO_3	As C
TANK 104 90-1871	22.6				

LRB And Page Nos 53093 - 30

M&TE 64102 Analyst John Eyer Date 3/31/90

METHOD 40.4-PNL-MA-597, III Reviewer M Wilhit Date 3/21/90

TK-105 543 gallons

IC ANALYSIS RESULTS

Customer R. Steele Work Package No IN-41817

SAMPLE ID LAB NO(S)	Concentration, PPM / % Recovery					
	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate
TANK 105 90-5285	648	3678	(300)*	38,650	<0.4	1976

LRB And Page Nos S-3730-41

M&TE 94483 Analyst John Evans Date 7/19/90

Method 40.8-PNL-MA-577,VII Reviewer J.M. Miller Date 7/19/90

* SLIGHTLY BELOW REPORTING DETECTION LIMIT — ESTIMATE ONLY

MMM

TK-112 194 gallons
Analyses before return to TK-107

IC ANALYSIS RESULTS

Customer R. Steele Work Package No _____

SAMPLE ID LAB NO(S)	Concentration, PPM / % Recovery					
	Fluoride	Chloride	Nitrite	Nitrate	Phosphate	Sulfate
167-90 90-1873 TK112				123,600		

LRB And Page Nos 53730-10

M&TE 94483 Analyst [signature] Date 4/5/90

Method 40.8-PNL-MA-577,VII Reviewer [signature] Date 4/5/90

TK 101 1472 8-1

SERIAL NUMBER 104085

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
29 - 80 MTE No. _____ BNW52920 p. ___	101 90-0791	IC Anions	See attachment
Serial Number 104085		Date 5/29/90	Approval CSH

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 1/17/90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
29-90	TK 101 90-0791	Pu	alpha emitting Pu 7.11E+2 dpm/ml
BNW52920 ng 105,108,	129,130	HTA-4-15	
Serial Number 103167		5/24/90	Date 6-7-90 / Approval Coll

54-1700-177 (05/89)

SERIAL NUMBER 103167

4/24 → 26/90

1.0086 ml [DIGESTED] → 4.9662 ml 2m HNO_3

− 0.5045 ml − 2(1.0024 ml)

− 1000λ glass calib pipet (997.83)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
29-90	101 90-0791	Tα	5.04 E3 dpm/ml
BNW52920 ng 105,108 110		HTA-4-22	
Serial Number 102648		5/1/90	Date 5-15-90 / Approval LSK

54-1700-177 (05/89)

SERIAL NUMBER 102648

RE-run

1.0086 ml → [DIGESTED] → 4.9662 ml 2m HNO_3

− 0.0996 ml

$df = \frac{1}{0.0996}$

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
29-90	TK 101 90-0791	Td AEA for Am+Cm	241 Am 2.22E+3 dpm/ml; 243+244 Cm 2.11E+3 "
Serial Number 102900			Date 6-9-90 / Approval Coll

54-1700-177 (05/89)

SERIAL NUMBER 102900

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
29 - 90	TK-101 90-0791	U	0.17 ug/mL
MTE No. WA 52164 BNW52920 p. 120-121 BNW 52442 Pg 83		HTA-4-16	
Serial Number 104080 5-11-90 C O Harvey		Date 5-18-90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 104080

1.0086 → 4.9662

Simple 0.0998 ml

Spike 0.020 ml 0.1004 ug/m

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
29-90	TK-101 90-0791	GSA	Cs^{137} 6.54 E+6 d/m
BNW52920 pg 105, 108, 111		M&TR WA43002 BNW52345 p. 51 HTA-4-9	Cs^{134} 2.41 E+3 ± 5.92 E+2
Serial Number 102656 5/2/90		Date 5-15-90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 102656

1.0086 ml → [DIGESTED] → 4.96 2mH

-3(0.0999ml) → $\bar{S}V$

$$SV = \frac{1.0086(3)(0.0999)}{4.9662} = 0.0608669\ m$$

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
29 - 90	101 90-0791	ICP Metals	See attachment
MTE No. ------- BNW52920 p. ---			
Serial Number 104084		Date 5/29/90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 104084

1.0086 → 4.9662

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result dpm/mL
29-90	101 90-0791	GSA +Cs strip	Sb 125 4.71 Et3 ± 1.14 Et3
MTE No. ------- BNW52920 p. ---		HTA-4-9 MTE WA43002 BNW52345 p. 53	Eu 154 3.11 Et4 ± 8.06 Et2
Serial Number 104079		C O Harvey	Date 5/29/90 Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104079

1.0086 → 4.9662 – 0.50. CoH

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
29	TK- 101 90-0791	pH	6.33
MTE No. 0144097 BNW52920 p. --- BNW 52913 p. 11		HTA-1-2	
Serial Number 104082			Date 4/24/90 Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104082

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
29-90	101 90-0791	Sr-90	1.38 Et6 d/m/mL
MTE No. ------- BNW52920 p. 108, 109, 118, 119		HTA-4-11	
Serial Number 104081		Eugenia L Dunn 5/10/90	Date 5-15-90 Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104081

1.0086 mL → [Digested] → 4.9662 2m H

– 0.4999 mL – 10 mL vol. flask

– 1.0110 mL

T_0 = 11:04 AM ~~DST~~ PDT MLK 5/10/90

KATAYAMA

CARBON ANALYSIS

Customer CLARK HARVEY Work Package No. M-41817

	SAMPLE ID LAB NO(S)	Concentration, PPM TC	TOC	TIC As CO_2	As CO_3	As C
29-90	TANK 101 90-0791	1782	1779			3
30-90	TANK 102 90-0792	297	257			40
31-90	TANK 103 90-0793	2595	2272			323
166-90	* TANK 106 90-1872	10.9	10.4			0.5
32-90	TANK 108 90-0794	34.9	34.7			0.2

* This sample was acidified prior to sending for TC analysis. Therefore the TC results may be incorrect due to loss of CO_2 from inorganic carbonate that may have been present.

LRB And Page Nos 53093-34

M&TE 64102 Analyst John Eaner Date 5/21/90

METHOD 40.4-PNL-MA-597, VII Reviewer [illegible] Date 5/21/90

Tank 102 1872 gal

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident.	Constituent	Result
30 - 90 MTE No. _____ BNW52920 p. ___	102 90-0792	GSA +Cs strip HTA-4-9 MTE WH43002 BNW52345 p.53	no Gamma emitters other than Cs identified
Serial Number 104086		CG Harvey	Date 5/29/90 Approval CGH

54-1700-177 (05/89)

SERIAL NUMBER 104086

2.0228 → 9.963 — 0.5051
CGH

$$SV = \frac{(2.0228)(0.5051)}{9.963} = 0.102551$$

SERIAL NUMBER 102899

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 1/17/90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
30-90	TK 102 90-0792	Tα, AEA for Am + Cm	241 Am 9.92 Et2 dpm/ml 243,244 Cm 1.15Et3 dpm/ml
Serial Number 102899		Date 6-8-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 103166

~~100x~~ 500x

2(1.0114 ml) {DIGESTED} → 2(4.9815; 2 m HNO3

− 0.5045 ml = 2(1.0024 ml)

− 1000 λ glass calib pipet (997×83)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30-90 BNW52920, PS 112, 114, 129, 130	TK 102 90-0792	Pu HTA-4-15	1.64 Et2 dpm/ml alpha emitting Pu only
Serial Number 103166		Date 5/24/90	Approval

54-1700-177 (05/89)

SERIAL NUMBER 104092

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30 — 90 MTE No. _____ BNW52920 p. ___	102 90-0792	IC Anions	See attachment
Serial Number 104092		Date 5/29/90	Approval CoH

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result dpm/ml
30-90	TK-102 90-0792	GSA	Cs^{137} 1.81 E+6
BNW52920 Pg 105,108,111		MTE WA43002 BNW 52345 p. 51 HTA-4-9	Cs^{134} 1.10 E+3 ± 1.61 E+2
Serial Number	102657 Virginia L. Dunn 5/2/90	Date 5-15-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102657

1.0086 ml → {DIGESTED} → 4.9662 ml 2M HNO3

−3(0.0999 ml) → $\bar{S}V$

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30-90	102 90-0792	ICP Metals	See attachment
MTE No. _____ BNW52920 p. ___			
Serial Number	104091	Date 5/27/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104091

2.0228 → 2(4.9815)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30-90	102 90-0792	Tα	2.31 E 3 dpm/ml
BNW52920 105, 105 PDF Pg 109, 110, HH VLD 5/1/90		HTA-4-22	
Serial Number	102649 Virginia L. Dunn VLD 5/1/90	Date 5-15-90	Approval LSK

54-1700-177 (05/89)

SERIAL NUMBER 102649

RERUN
1.0086 ml → {DIGESTED} → 4.9662 ml 2M HNO3
−0.0492 ml

SERIAL NUMBER 104089

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30	TK-102 90-0792	pH	7.27
MTE No. 0144097 BNW52920 p. --- BNW 52913 P 11		HTA-1-2	
Serial Number 104089		Date 4/24/90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 104088

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30 - 90	102 90-0792	Sr-90	3.65 E+5 d/m/mL
MTE No. ------- BNW52920 p. 113	114, 118, 119	HTA-4-11	
Serial Number 104088		Date 5-8-90	Approval Coff

54-1700-177 (05/89)

2(1.0114 ml) → {Digested} → 2(4.981 ml 2M Hn

— 0.4999 ml — 10 ml vol. flask

— 1.0110 ml

LSK 5-15-90

T_0 = 11:04 AM ~~DST~~ PDT

LK 5/10/90

SERIAL NUMBER 104087

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
30 - 90	TK-102 90-0792	U	0.11 µg/mL
MTE No. WA 52164 BNW52920 p. 120+121 BNW 52442 P 83		HTA-4-16	
Serial Number 104087		Date 5-12-90	Approval Coff

54-1700-177 (05/89)

1.0086 → 4.9662

0.0998 Sample

0.020 0.1004 µg/ml Spike

KATAYAMA

CARBON ANALYSIS

Customer CLARK HARVEY Work Package No. M-41817

	SAMPLE ID LAB NO(S)	Concentration, PPM				
		TC	TOC	TIC As CO_2	TIC As CO_3	TIC As C
29-90	TANK 101 90-0791	1782	1779			3
30-90	TANK 102 90-0792	297	257			40
31-90	TANK 103 90-0793	2595	2272			323
166-90	* TANK 106 90-1872	10.9	10.4			0.5
32-90	TANK 108 90-0794	34.9	34.7			0.2

* This Sample was acidified prior to Sampling for IC analysis Therefore the TC results may be incorrect due to loss of CO_2 from inorganic Carbonate that may have been present

LRB And Page Nos 53093-34

M&TE 64102 Analyst [signature] Date 5/21/90

METHOD 40.4-PNL-MA-597, III Reviewer [signature] Date 5/21/90

TK 103 1488 gal

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31-90 BNW52920 RS 105, 108, 129, 130	TK103	Pu HTA - 4-15	1.72E+5 dpm/ml alpha emitting Pu only
Serial Number 103165		5/24/90	Date 6-7-90 / Approval Cost

54-1700-177 (05/89)

SERIAL NUMBER 103165

100λ min 500λ

4/24-4/24/[illegible]

1.0086 → 4.9662 ml 2M HNO_3

− 0.5045 ml − 2(1.0024 ml)

− 1000λ

(997.83)

glass calib pipet

SERIAL NUMBER 102898

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31-90	TK103	Td - AEA for Am + Cm	^{241}Am 4.09 E+3 dpm/mL ^{243,244}Cm 3.04 E+3 ^{242}Cm 21
Serial Number 102898.		Date 6-8-90	Approval COH

SERIAL NUMBER 104093

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31 - 90	103 90-0793	EEA +Cs strip	125 dpm/mL COH Sb 3.71 E+3 ± 9.58 E+2
MTE No. _____ BNW52920 p. ___		MTA-4-9 MTE WA4E002 BNW52345 p 53	
Serial Number 104093		Date 5/29/90	Approval COH

1.0086 → 4.9662 — 0.5051 COH

$$SV = \frac{(1.0086)(0.5051)}{4.9662} = 0.1025822$$

SERIAL NUMBER 104099

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31 - 90	103 90-0793	IC Anions	See attachment
MTE No. _____ BNW52920 p. ___			
Serial Number 104099		Date 5/29/90	Approval COH

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1-17-90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31-90 BNW52920 Pg 105, 108, 111	TK-103 90-0793	GSA. MTE WA43002 BNW52345 p51 HTA-4-9.	cs137 6.80 E+6 d/m/mL cs134 3.83 E+3 ± 9.41 E+2
Serial Number 102658 Virginia L Dunn 5/2/90		Date 5-19-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102658

1.0086 ml → {DIGESTED} → 4.9662 2M H

−3(0.0999 ml) → $\bar{S}_V$

SV 0.0608669 ml

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31-90 MTE No. _____ BNW52920 p. ___	103 90-0793	ICP Metals	See attachment
Serial Number 104098		Date 5/29/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104098

1.0086 → 4.9662

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31-90 BNW52920 105, 108 Pg 110	103 90-0793 NC	Tα HTA-4-22	8.83 E3 dpm/ml
Serial Number 102650 Virginia L Dunn 5/1/90		Date 5-15-90	Approval CSC

54-1700-177 (05/89)

SERIAL NUMBER 102650

Re-run
1.0086 ml → {DIGESTED} → 4.9662 2M HNO
− 0.0996 ml

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31	TK-103 90-0793	pH	8.39
MTE No. 0144097 BNW52920 p. --- BNW 52913 Pg 11		HTA-1-2	
Serial Number 104096		Date 4/24/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104096

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31 -90	103 90-0793	Sr-90	1.76 E+6 dpm/mL
MTE No. ------- BNW52920 p. 105, 108, 118, 119		HTA-4-11	
Serial Number 104095 [signature] 5-10-90		Date 5-15-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104095

1.0086 ml → [DIGESTED] → 4.9662 m 2m HNO3

– 0.4999 ml – 10 ml vol flask

– 1.0110 ml

T_0 = 11:05 AM ~~DST~~ PDT [initials] 5/10/90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Buck/Katayama		Date Received 1/17/90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
31 -90	103 90-0793	U	0.30 µg/mL
MTE No. WA 52164 BNW52920 p. 120-121 BNW 52442 Pg 83		HTA-4-16	
Serial Number 104094 5-11-90 CO Harvey		Date 5-11-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 104094

1.0086 → 4.9662

0.0998 ml sample

0.020 ml 0.1004 µg/ml spike

KATAYAMA

CARBON ANALYSIS

Customer CLARK HARVEY Work Package No. M-41817

	SAMPLE ID LAB NO(S)	Concentration, PPM TC	TOC	TIC As CO_2	As CO_3	As C
29-90	TANK 101 90-0791	1782	1779			3
30-90	TANK 102 90-0792	297	257			40
31-90	TANK 103 90-0793	2595	2272			323
166-90	* TANK 106 90-1872	10.9	10.4			0.5
32-90	TANK 108 90-0794	34.9	34.7			0.2

* This sample was acidified prior to sampling for IC analysis therefore the TC results may be incorrect due to loss of CO_2 from inorganic carbonate that may have been present

LRB And Page Nos 53093-34

M&TE 64102 Analyst John Curren Date 5/21/90

METHOD 40.4-PNL-MA-597, III Reviewer [illegible] Date 5/21/90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-21-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
165-90	TK-104 90-1871	pH	1.4
		H^+ MATE WA 94627 LRB 52846 P15	0.10 N.
Serial Number 103158		Date 5-17-90	Approval MCB

54-1700-177 (05/89)

SERIAL NUMBER 103158

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-21-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
165-90	TK-104 90-1871 TK-104	URANIUM HTA-4-16 LASER	0.17 µg/mL
BNW52920 Pg 120-121 MTE WA 52164 BNW 52442 Pg 93			
Serial Number 102795 5-11-90 CO Harvey		Date 5-11-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102795

1.0021 ml + 1.0021 + 2(5.0351) ml

0.0998 mL Sample
0.020 ml 0.1004 µg/ml Spike

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-21-90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
165-90	TK-104 90-1871	GSA	Cs^{137} CoH ~~9.87~~ 1.07 E+9 d/m/ml
BNW52920 Pg 105,106		MATE WH 43002 BNW 52345 p. 51 HTA-4-9	
Serial Number 102629 4/25/90		Date 5-15-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102629

0.0250 ml → 1.0060 ml + 0.0250 ml
2M HNO_3

— 2(0.0996 ml) → 2(5.0698 ml) SV
2M HNO_3

SV = (1.0310) / (0.0250)(0.1992) = 207.0281 ml dilution

Sample Size 4.83026 E-3 ml

Pacific Northwest Laboratory	ANALYTICAL REPORT		
Customer: B. KATAYAMA	Date Received: 3-21-90	Work Order No.: M41817	
Serial No.	Customer Ident.	Constituent	Result
165-90	TK-104 90-1871 TK-104	90STRONTIUM HTA-4-11	1.52 E+9 d/m/mL
ENA52920 B118/119			
Serial Number: 102794		Date: 5/15/90	Approval: Coff

54-1700-177 (05/89)

SERIAL NUMBER 102794

1.0021 + 1.0021 + 2(5.0351)

0.4999 mL — 10 mL vol. flask

— 0.1000 mL → 1.0110 mL

— ~~2(0.0217 mL)~~ 0.0247 mL

T_c = 11:08 AM ~~1st~~ PDT

Pacific Northwest Laboratory	ANALYTICAL REPORT		
Customer: B. Katayama	Date Received: 6/11/90	Work Order No.: M41817	
Serial No.	Customer Ident.	Constituent	Result
90-1871	TK-104	Tα	Tα 1.65 x10⁴ d/m/mL
		$^{239+240}Pu$	1.21 E+3
		$^{238}Pu + ^{241}Am$	8.51 E+3
		$^{243+244}Cm$	6.93 E+3
Serial Number: Nº 101335 Coff 6-12-90		Date: 6-14-90	Approval: Coff

54-1700-177 (09/87) GPO 882-039 (1987)

SERIAL NUMBER 101335

.1970 ml. spl. into 1 ml. HNO_3 digested → 2.9834 — 0.0999

I — Duplicate Discs

II

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
165-90	TK 104 90-1871	Cs strip GSA MATE 11-K43002 BNW:52345 p. 53	No other Gamma Emitters identified
Serial Number 102681		Date 5/29/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102681

$1.0021 \rightarrow 2(5.0351) + 1.0021 -$

$- 0.0248$

$$Sr = \frac{(1.0021)(0.0248)}{11.0723} = 0.0022445 \text{ ml}$$

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
165-90 90-1891	TK 104	ICP metals	See Attachment
Serial Number 103479		Date 5/29/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 103479

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-2-90	Work Order No. M41817
Serial No.	Customer Ident.	Constituent	Result
90-1871	TK104	pH	1.4
Serial Number № 101375		Date 3-15-90	Approval RES

54-1700-177 (09/87) GPO 592-039 (1987)

SERIAL NUMBER 103482

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Jeff Surma		Date Received 2/10/89	Work Order No
Serial No	Customer Ident	Constituent	Result
9306	105	Pu	239+240 Pu 2.793 E5 dpm/ml 238 Pu 6.094 E5 dpm/ml
RFAS M41365-2 M+TE WM 05544 BKW 52910	PL8	from MS isotopic and above results Total Pu from 239+240 = 1.294 mg/ml from 238 = 53	
Serial Number 103482		Date 1-89	Approval LSK

This is a copy of the original report Cott

54-1700-177 (05/89)

SERIAL NUMBER 102682

1005 X Dilution in cell

~~[illegible]~~ cott [illegible]

0.0993 ml → 5V

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-30-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
245-90 Submitted by L Bray	TK-105	GSA M+TE WA4300L BNW52345 p.53 HTA-4-9	Cs 137 2.645+10 dpm/ml
Serial Number 102682 [signature]		5/14/90	Date [illegible] Approval Cott

54-1700-177 (05/89)

SERIAL NUMBER 103483

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer Jeff Serma		Date Received 2/10/89	Work Order No M41665
Serial No	Customer Ident	Constituent	Result
9306	105	^{90}Sr	1.397 E 10 dpm ^{90}Sr/ml ↓ 45.9 µg/ml ↓ 6.29 mCi/ml
RFAS M 41665-2 M+TE 360-23 08-04 360-06 01-016 WA 3+277			
Serial Number BNW 52914 P71-72 103483		Date 2-14-89	Approval LSK

This is a copy of the original report CAH

SERIAL NUMBER 103475

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 2-7-89	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
9306	TK105	CSA	dpm/ml
		Cs-134	1.11E+5 ± 2.22E+4
		Cs 137	4.41E+7
		Eu 154	3.77E+5 ± 4.44E+4
		Am 241	1.55E+5 ± 2.22E+4
Serial Number 103475		Date 5/29/90	Approval CAH

should be 101.4 X

SERIAL NUMBER 102690

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA J Serma		Date Received 2-7-89	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
9306	TK105	U	0.96 µg/ml
BNW52920 P. 131,132			
Serial Number 102690		PJR 5-23-90	Date 5/29/90 Approval CAH

PJR 5-23-90
~~0.020~~
0.0199 ml - R_1 = 0.25
0.0199 ml - R_2 = 0.51
of 1.0005 µg U/ml

KATHYN WA

CARBON ANALYSIS

Customer CLARK HARVEY Work Package No. M-41817

	SAMPLE ID LAB NO(S)	Concentration, PPM TC	TOC	TIC As CO_2	As CO_3	As C
29-90	TANK 101 90-0791	1782	1779			3
30-90	TANK 102 90-0792	297	257			40
31-90	TANK 103 90-0793	2595	2272			323
166-90	* TANK 106 90-1872	10.9	10.4			0.5
32-90	TANK 108 90-0794	34.9	34.7			0.2

* This sample was acidified prior to sending for TC analysis therefore the TC results may be incorrect due to loss of CO_2 from inorganic carbonate that may have been present

LRB And Page Nos 53093-34

M&TE 64102 Analyst [signature] Date 5/21/90

METHOD 40.4-PNL-MA.597, III Reviewer [signature] Date 5/21/90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-2-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
165-90	TK-106 90-1872	URANIUM LASER	4.0 E-2 µg/mL
MTE No. WA52164 BNW52920 p. 117, 120, 121 BNW52442 pg 73		HTA-4-16 MATE WA52164	
Serial Number 103335		5-11-90 C O'Harvey	Date 5-11-90 Approval Coll

54-1700-177 (05/89)

SERIAL NUMBER 103335-57

10.57 → 11.57 – 3(1.5064) – 4.9886

0.0998 mL Sample

0.020 mL 0.1004 µg/mL Spike

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK-106	ICP	See attachment
Serial Number 103476		Date 5/29/90	Approval CSH

SERIAL NUMBER 103476

10.57 → 11.57 — 3.0192 → 4.9855

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK-106 90-1872	PH [signature] 3/15/90	6.19
Serial Number 102676		Date 5-16-90	Approval CSH

SERIAL NUMBER 102676

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-2-90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK106 90-1872	90 STRONTIUM	3.54E+6 d/m/mL
MTE No. 360-06-01-018 BNW52920 p. 117, 115, 119		MTA-4-11	
Serial Number 103334 [signature] 5/10/90		Date 5-15-90	Approval CSH

SERIAL NUMBER 103334

10.57 ml → 11.57 ml

3 (1.0064 ml) → [DIGESTED] → 4.9886 ~ 2M HNO_3

[initials] 5/14/90

— 0.4999 ml → 10 ml vol flask

— 0.1000 ml

T_0 = 11:07 AM ~~DST~~ PDT 5/2/90

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
166-90 90-1872	TK 106	IC ANIONS	See Attachment
Serial Number 103481		Date 5/29/91	Approval CGV

SERIAL NUMBER 103481

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer R KATAYAMA		Date Received 3-21-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK106	GSA MTB WAA3102 BNW52345 p53	Cs^{137} 5.22 E+6 d/m/mL Cs^{134} 4.22 E+4 d/m/mL
Serial Number 103408		Date 5-17-90	Approval CGV

SERIAL NUMBER 103408

10.57 → 11.57 – 3.0192 →

4.9886 — 0.4977 mls

$$SV = \frac{(10.57)(3.0192)(0.4977)}{(11.57)(4.9886)} = \cancel{0.275}$$

0.2751835 ml

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. Katayama		Date Received 3-2-90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
166-90 BNW52920 FS117, 120	TK106 90-1872	Tα HTA-4-22	9.00 E 4 dpm/mL
Serial Number 103879		Date 5-15-90	Approval LSK

SERIAL NUMBER 103879

3(1.0064 ml) → {DI~~[illegible]~~} → 4.9886 ml 2 m HNO_3

– 0.0248 ml

10.57 → 11.57

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: R. KATAYAMA		Date Received: 3-2-90	Work Order No: M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK-106 90-1872	AMERICIUM-CURIUM [signature] HTA-4-15	Am^{241} 4.16 E+4 dpm/ml; $Cm^{243+244}$ 3.99 E+4; Cm^{242} ~~3.25~~ 3.25 E+2 CoH
KTE No. ---- BNW52920 p. ---			
Serial Number 103331		Date 6-7-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 103331

10.57 ml → 11.57 ml

(3X1.0064 ml) → 4.9886 ml —

1000λ → 500λ — 25λ

[1.0037 ml] [0.5024 ml 0.0247 ml]

BNW 52920 P.117 BNW 52920 P.122

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: KATAYAMA		Date Received: 3-2-90	Work Order No: M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK106 90-1862	Pu ~~239~~ ~~240~~	7.78 E+2 dpm/ml alpha emitting Pu only
BNW52920 KS 129, 130, 117		HTA-4-15	
Serial Number 103161 [signature] 5/24/90		Date 6-7-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 103161

10.57 → 11.57

(3)(1.0064) → 4.9886 — 0

— 0.1005 ml — 2(1.0024 ml)

— 1000λ

glass calib pipet

(997.83)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: KATAYAMA		Date Received: 3-2-90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
166-90	TK106 90-1872	Cs Strip GSA	Eu^{154} 5.69 E+4 dpm/ml
		MATE WH43002 BNW52345 p.53	
Serial Number 102678 CoHenry		Date 5/29/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102678

10.57 → 11.57 — 3(1.0064) →

→ 4.9886 — 0.5051

$$SV = \frac{(10.57)(3.0192)(0.5051)}{(11.57)(4.9886)} =$$

0.279275 ml

TK 108 1871 8'

KATAYAMA

CARBON ANALYSIS

Customer CLARK HARVEY Work Package No. M-41817

	SAMPLE ID LAB NO(S)	Concentration, PPM TC	TOC	TIC As CO_2	As CO_3	As C
29-90	TANK 101 90-0791	1782	1779			3
30-90	TANK 102 90-0792	297	257			40
31-90	TANK 103 90-0793	2595	2272			323
166-90	* TANK 102 90-1872	10.9	10.4			0.5
32-90	TANK 108 90-0794	34.9	34.7			0.2

* This sample was acidified prior to sampling for IC analysis therefore the TC results may be incorrect due to loss of CO_2 from inorganic carbonate that may have been present

LRB And Page Nos 53093-34

M&TE 64102 Analyst [signature] Date 5/21/90

METHOD 40.4-PNL-MA-597, VII Reviewer [signature] Date 5/21/90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No: M41817
Serial No	Customer Ident	Constituent	Result
32-90	108 ~~104~~ vlo 5/8/90 90-0794 (ZR Fusion)	U	Total sample < 0.19 ug/mL
MTE No. WA 52164 BNW52920 p. 120-121 BNW 52442 p. 83		HTA-4-16	Supernate 8.9 E-3 ug/mL
Serial Number 104203	5-11-90 C O Harvey	Date 5-15-90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 104203

2 mL — 100 mL
0.0998 mL Sample
0.020 ml .1004 ug/ml Spike

A Supernate from untreated sample direct
0.040 ml Sample
0.020 ml .1004 ug/ml Spike

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
32-90	TK 108 ~~104~~ vlo 5/8/90 90-0794 (ZR Fusion)	Sr-90	2.16 E+7 d/m/mL
MTE No. ------- BNW52920 p. 118, 119		HTA-4-11	
Serial Number 104204	Virginia L Dunn 5-10-90	Date 5-15-90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 104204

2.2677g (2.0 ml) → 100 ml

5/8/90 vlo ~~0.0~~
0.4999 ml — 10 ml vol flask
— 0.5029 ml

T_0 = 11:07 AM PDT

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
32	~~104~~ 108 90-0794	pH ~~H+~~	< 1
MTE No. 0144097 BNW52920 p. --- BNW52913 p. 11		HTA-1-2 H+ PNL-MA-577 Vol II method 40.22 LRB 52446 p 13 by McCurt	4.28 M.
Serial Number 104205		Date 4/24/90	Approval Coff

54-1700-177 (05/89)

SERIAL NUMBER 104205

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1-17-90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
32-90 BNW52920 MS ~~111~~ 111 VLJ 5/2/90	TK-108 COH 90-0794 (ZR FUSION)	GSA MATE WA43002 BNW52845-51 HTA-4-9	Cs^{137} 5.25 E+8 d/m/mL
Serial Number: 102659 Virginia L Dunn 5/2/90		Date: 5-19-90	Approval: COH

SERIAL NUMBER 102659

3(0.0999 ml) → $\bar{SV}$

note: dilution from sample pretreatment on not included in the sample volume used when scan was made

2mL — 100 mL

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
32-90 BNW52920 MS 114	TANK 108 90-0794 (ZR FUSION)	Tα Cation Column Method Kmaiti 5/7/90	5.41 E3 dpm/ml
Serial Number: 102651		Date: 5-16-90	Approval: LSK

SERIAL NUMBER 102651

2.2667g (2.0 ml) → 100 ml

0.0997ml → 500λ —— 100λ

Sample [0.4991ml 0.1015 ml
BNW 52920 P. 115

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: KATAYAMA		Date Received: 1/17/90	Work Order No.: M41817
Serial No	Customer Ident	Constituent	Result
32-90	TK 108 90-0794	Pu	Total alpha activity low no further alpha analysis performed
Serial Number: 103164		Date	Approval

SERIAL NUMBER 103164

54-1700-177 (05/89)

SERIAL NUMBER (1st call) [illegible]
2mL → 100ml

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No: M41817
Serial No	Customer Ident	Constituent	Result
32 - 90	108 ~~104~~ VW 5/8/90 90-0794	ICP Metals	See attachment
MTE No. ------- BNW52920 p. ---			
Serial Number 104207		Date 5/29/90	Approval COH

54-1700-177 (05/89)

SERIAL NUMBER 104208

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No: M41817
Serial No	Customer Ident	Constituent	Result
32 - 90	108 ~~104~~ VW 5/8/90 90-0794	IC Anions	See attachment
MTE No. ------- BNW52920 p. ---			
Serial Number 104208		Date 5/29/90	Approval COH

54-1700-177 (05/89)

SERIAL NUMBER 104100

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer: Buck/Katayama		Date Received: 1/17/90	Work Order No: M41817
Serial No	Customer Ident	Constituent	Result
32 - 90	108 VW ~~104~~ 5/8/90 90-0794	GSA +Cs strip	Sb 125 dpm/~~cc~~ ML 3.09 +5 ± 3.76 E+4
MTE No. ------- BNW52920 p. ---		HTA-4-9 MATE WH43002 BNW52345 p53	
Serial Number 104100		C O Harvey	Date 5/29/90 Approval COH

54-1700-177 (05/89)

~~1ml Sample~~ fused, dissol. COH ~~in 100ml)~~ 1mL → 100 ml — 0.5051 ~~[illegible]~~

SV = $\frac{(1ml)(100ml)}{0.5051}$ = $\frac{(1ml)(0.5051)}{100}$ = 0.005051 ml

AK 5/17/90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No M 41817
Serial No	Customer Ident	Constituent	Result
167-9	TK112 90-1873	Cs strip GSA [illegible] 2 [illegible] 53	~~[illegible]~~ CoH Eu 1.50 E+9 dpm/ml
Serial Number 102679			Date 5/29/90 Approval CoH

SERIAL NUMBER 102679

1 ml (fused) → 100 ml

0.0248 → 0.5299 − 0.0248

$$SV = \frac{(1)(0.0248)(0.0248)}{(100)(0.5299)} =$$

1.16067 E-5 ml

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-2-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
167-90 / 90 1873	TK112	ICP Metals	See Attachment
Serial Number 103480			Date 5/29/90 Approval CoH

SERIAL NUMBER 103480

54-1700-177 (05/89)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-21-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
167 -90 BNW52920 PS113	TK-112 90-1873 TK-104	239-240 PLUTONIUM HTA-4-15	239-240 Pu 5.32 E+6 dpm/ml 238 Pu 8.40 E+6 dpm/ml
Serial Number 102798		Date 6-7-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102798

1 ml → 100 ml

0.0988g. DRY

0.0247 ml – 2(1.0011 ~~0.0994 ml~~) LSK 5-15-90

– 1000λ

Calib glass pipet (1000.7.)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-21-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
167 -90 BNW52920 PS113	TK-112 90-1873 TK-104	AMERICIUM-CURIUM HTA-4-35	241 Am 1.31 E+7 dpm/ml 242-244 Cm 1.08 E+7 " 242 Cm 7.91 E+6 "
Serial Number 102796		Date 6-8-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102796

(1 ml) → 100 ml

0.0988g. DRY

0.0247 ml → 500λ —— ~~100λ~~ TCm 25λ

sample [0.4991 ml 0.0250 ml]

BNW 52920 P. 115

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-7-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
167-90 90-1873	TK 112	IC Anions	See Attachment
Serial Number 103478		Date 5/29/90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 103478

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer B. Katayama		Date Received 3-21-90	Work Order No M41817	
Serial No	Customer Ident	Constituent	Result	
167-90 BNW52920, Pg 105, 106	TK-112 90-1873	Tα HTA-4-22	2.32 E 4 dpm/ml	
Serial Number	102631 [signature] 4/24/90		Date 5-15-90	Approval LSK

54-1700-177 (05/89)

SERIAL NUMBER 102631

1 ml → 100 ml
(1.0958 g)

0.0250 ml → 1.0060 ml
2 m HNO_3

— 0.0996 ml → 5.0698 ml
2 m HNO_3

— 0.0250 ml

$$df = \frac{(1.0060)(5.0698)}{(0.0250)(0.0996)(0.0250)} = 8.1931 E+4$$

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer B. Katayama		Date Received 3-21-90	Work Order No M41817	
Serial No	Customer Ident	Constituent	Result	
167-90 BNW52920, Pg 105, 106	TK-112 90-1873	GSA MATE WH43002 GNW 52845 p 51 HTA-4-9	Cs^{137} 1.42 E+11 d/m/mL Cs^{134} 6.47 E+8	
Serial Number	102630 [signature] 4/25/90		Date 5-15-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102630

0.0250 ml → 1.0060 ml 2 m HNO_3

— 0.0250 ml → 2(5.0698 ml)
2 m HNO_3

$$SV = \frac{(0.0250)(0.0250)}{1.0060} = 6.212 E-4 \text{ ml}$$

1 mL
(1.1097 g) wet wt Sample
100 mL

Pacific Northwest Laboratory		ANALYTICAL REPORT		
Customer B. KATAYAMA		Date Received 3-21-90	Work Order No M41817	
Serial No	Customer Ident	Constituent	Result	
167-90 BNW52920 Pg 121 MTE 52164 BNW 52442 Pg 83	TK-112 90-1873 ~~TK-104~~ no 5/8/90	URANIUM HTA-4-16 LASER	4.9 µg/mL	
Serial Number	102800 CO Harvey		Date 5-11-90	Approval CoH

54-1700-177 (05/89)

SERIAL NUMBER 102800

0.0998g. DRY

1 mL → 100 mL — 0.0998 →
CoH 5-11-91

5.4725 — ~~5.0297~~
0.299

Spike 20 λ 0.9885 µg/mL

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received 3-21-90	Work Order No M41817
Serial No	Customer Ident	Constituent	Result
167-90	TK-112 90-1873 ~~TK-104~~ 5/2/90	POSTRONTIUM	9.23 E+10
BNW52920 PS 118		HTA-4-11	
Serial Number 102799		Date 5-15-90	Approval COH

54-1700-177 (05/89)

SERIAL NUMBER 102799

0.0988g. DRY
(1ml → 100ml)

2(0.0996ml) → 10 ml vol. flask
— 5.1000 ml → 5.07$\overline{13}$ ml H_2O
— 0.0247 ml

T_0 = 11:10 AM ~~DST~~ PDT
5/16/90

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer B. KATAYAMA		Date Received	Work Order No
Serial No.	Customer Ident.	Constituent	Result
90-1873	TK112	pH	0.7
Serial Number Nº 101376		Date 3-15-90	Approval RES

54-1700-177 (09/87) GPO 592-039 (1987)

Pacific Northwest Laboratory		ANALYTICAL REPORT	
Customer KATAYAMA		Date Received 3-21-90	Work Order No. M41817
Serial No	Customer Ident	Constituent	Result
167-90	TK-112 90-1873	pH HTA-1-2 3-15-90 BNW 52509	.7
		H^+ MTE WA94627 LPB 52846	.85 N
Serial Number 103160		Date 3-17-90	Approval MCB COH

54-1700-177 (05/89)

SERIAL NUMBER 103160

Attachment 3:

1996 HLV Tank Waste Analytical Results

The following analytical reports were prepared by the PNL 325 Laboratory. The reports contain data for the samples collected from the HLV Tanks' contents. The samples were collected and analyzed in 1996. This sampling and analyses was performed in conjunction with HLV tank cleanout performed in support of milestone M-89-01.

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Baffelle
Putting Technology To Work

Project No. 24396

Internal Distribution

Date July 9, 1996

File/LB

To Gary Sevigny

From Ofelia Bredt

Subject Analytical Result for the 324 High Level Vault Samples

Attachments one through six provide the analytical results obtained by the Pacific Northwest National Laboratory 325 Analytical Chemistry Laboratory (ACL). Analysis was preformed on 324 building 104 and 107 high level vault (HLV) samples. The first set of samples were received on June 12, 1996. The second set of samples were received on June 17, 1996. The analysis requirements for the HLV samples were outlined in ASR 3174 with DSI February 14, 1996 (Gary Sevigny).

Because of the dose rates, both samples required significant dilution. All reported analytical results were corrected for dilutions. In addition, all results are reported on a per gram basis to convert the results to milliters use the specific gravity.

During sample receipt it was noted that sample labeling was inconsistent with associated documentation. The 324 technician that prepared and loaded the vials came to the shielded analytical laboratory (SAL) and identified the samples as described in attachment 1. Samples HLV001 through HLV004 were composited and labeled HLV104Comp. Samples HLV005 through HLV008 were composited and labeled HLV107Comp. HLV104Comp was assigned ACL number 96-04817 and HLV107Comp was assigned ACL number 96-04818.

Specific Gravity (SpG) determination were performed on both samples following method PNL-ALO-501. All quality control requirements were met. For samples HLV104Comp and HLV107Comp, the SpG was 1.007 g/mL and 1.076 g/mL, respectively.

Both HLV104Comp and HLV107Comp were prepared in the SAL by acid digestion. Aliquots of both digestates at a total dilution of 2500 fold were analyzed for total alpha, and gamma energy analysis. Additionally, HLV107Comp digestate was analyzed for plutonium, americium/curium and plutonium isotopics. All quality control requirements were met except the ^{238}Pu blank spike recovery was high (i.e., 121%). In addition, the ^{238}Pu result has a higher uncertainty than the other Pu isotopes due to interference from ^{238}U.

Both samples were titrated with a 1N NaOH solution. The milliequivalents of NaOH required to bring samples HLV104Comp and HLV107Comp to a pH of 10.5 were 0.21 and

0.71, respectively. Confirmation of instrument calibration was performed prior to and upon completion of the analysis.

For the anion analyses, samples HLV104Comp and HLV107Comp were diluted in the SAL 1140 fold in order for the dose level to fall within the applicable radiation work permit (RWP). The diluted sample aliquots were analyzed by method PNL-ALO-212 for fluoride, chloride, bromide, nitrate, nitrite, phosphate, and sulfate. All quality control requirements were met.

Total inorganic carbon analysis was performed on the NaOH solution used to titrate the samples. The analysis provided the concentration of TIC contamination in the NaOH solution. Greater than normal uncertainty is associated with the TIC results because no matrix spike or blank spike were performed. An assessment of the matrix effects on the method could not be performed due to the lack of matrix spike results. Confirmation of acceptable method performance could not be assessed due to the lack of blank spike results.

Due to limited quality control samples, the ICP uncertainty are greater than normal. The results should be used with caution. The HLV104Comp acid digestate was diluted to approximately 125 fold to bring the dose to a level within the limits of the applicable RWP. From Table 2-1 in the "Waste Analysis Plan For the 324 Building HLV Interim Removal Action", March 1996, the lead content was expected to be 16 μg/mL. At this level, the result would be above the ICP lead detection limit of 7.5 μg/mL (at 125 fold dilution) but below the estimated quantitation limit (EQL). Matrix spike, serial dilution and post digestion spike were not performed because the concentration of the analytes were expected to be at the detection limits and the analyst would have been unnecessary exposed. The blank spike was not performed because with the dilution applied would have resulted in the analytes not being detectable above the ICP EQL.

Concurrence MW Thie 7-9-96

ATTACHMENT 1

Battelle
Putting Technology To Work

Project No. 24896

Internal Distribution

File/LB

Date July 8, 1996

To Ofelia P. Bredt

From Rick T. Steele

Subject 324 HLV Sample Receipt/Prep Narrative

Sample Receipt

Eight samples were transferred from the 324 Building hot cells to the 325 Building Shielded Analytical Laboratory hot cells. Two shipments were required. The One Ton Lab and Dry Storage cask will accommodate 5 sample vials. The first shipment arrived on June 12, 1996. Identification markings on two sample vials, HLV003 and HLV005 were in question upon receipt and unloading into the cell. Specifically in question were the tank identification markings. The technician that prepared and loaded the vials in the 324 Facility verified that HLV003 identifiers were correct as received. However, HLV0005 vial was labeled with tank 107. The technician verified that vial HLV005 was collected from their tank 104/105 composite. The second shipment arrived on June 17, 1996 without incident. Upon receipt, samples HLV001-HLV004 (Tank 107) were observed to be opaque brown liquids. Samples HLV005-HLV008 (Tank 104/105 composites) were colorless, clear liquids with a minute amount of settled solids. Samples HLV001 through HLV004 were combined by weight (68.9617 grams) to form HLV107Comp. Samples HLV005 through HLV008 were combined by weight (60.3409 grams) to form HLV104Comp.

Specific Gravity Determination

The specific gravity was determined for both composite samples using 10ml volumetric flasks and a four place electronic analytical balance. HLV104Comp SpG is 1.007 grams/mL. HLV107Comp SpG is 1.076 grams/mL. Applying these SpG values, the composited sample volumes were determined to be 59.9mLs and 64.1mLs respectively.

Sample Preparation for Analysis

A Nitric Acid - Hydrochloric Acid digestion of the tank composite samples was performed in the cell. The resulting digestate was submitted to the Radiochemistry and Advanced Inorganic Chemistry Groups for analysis. Nominally 100X dilutions were made after digestion before submittal to the groups. The digestion process creates a 25X dilution. Total dilution of the digestate delivered was 2500X.

The composite samples were diluted 1000X with deionized water and submitted to the Inorganic Group for chloride analysis by ion chromatography.

Radiation Dose Information

The radiation readings associated with the composite sample materials are extremely high. Sample processing dilutions were made and radiation readings taken on the primary sample containers when they were brought out of the hot cell for distribution to other laboratories. The table below details the results:

Sample Dose Rates

		Sample Container Readings			
		@ Contact		@ 30 Centimeters	
Sample Identification	Dilution Factor	Beta-Gamma (mRad/Hr)	Gamma (mrem/Hr)	Beta-Gamma (mRad/Hr)	Gamma (mrem/Hr)
HLV104Comp	1000X	150	9	Not Measured	Not Measured
HLV104Comp	2500X	31	3	1	0.3
HLV107Comp	1000X	900	60	Not Measured	Not Measured
HLV107Comp	2500X	170	17	4.1	0.8

Concurrence: 7/8/96

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: GARY SEVIGNY

WP Number: K45606

TI#/ASR: ASR# 3174

Procedure: PNL-ALO-501

96-04817 HLV104 COMP: 96-04818 HLV107 COMP SPECIFIC GRAVITY

SAMPLE IDENTIFICATION

96-04817 HLV104 COMP		96-04818 HLV107 COMP
9.3054 g	VOL FLASK TARE	8.8888 g
19.3765 g	VOL FLASK GROSS	19.6435 g
10.0711 g	NET SOLUTION WEIGHT	10.7547 g

VOL FLASK CAPACITY = 10 mLS

SpG = NET SOLUTION WEIGHT / VOL FLASK CAPACITY = G/mL

96-04817 10.0711/10 = 1.0711 g/mL
96-04818 10.7547/10 = 1.0755 g/mL

M&TE: X Cell 2 (360-06-01-016) Mettler AE160 Balance Other ____

____ Cell 5 (360-06-01-039) Mettler AT400 Balance

____ Bench (360-06-01-040) Denver A160 Balance

____ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 6/19/96

Reviewer: [signature] Date: 6/19/96

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: Gary Sevigny WP Number: K45606

TI#/ASR: 3174 Procedure: Sp. Gr.

HLV 104 Comp 107 Comp.

SAMPLE IDENTIFICATION

96-4817
19.3765
9.3054
10.0711 ÷ 10 = 1.0071

96-4818
19.6435
8.8888
10.7547 ÷ 10 = 1.0755

Acid Digest
1 ml Pipet, DIW @ 22°C (1.002232)
.9994 $\bar{x}$ = .9999 g.
.9996 S = .0009
1.0015 RSD = .09%
.9994 Del = 1.0021 ml
.9998

Acid Digest
100λ Pipet DIW @ 22°C
.0983 $\bar{x}$ = .0983 g.
.0982
.0983 S = .0001
.0982
.0984 RSD = .09%
Del = .0985 ml.

Acid Digest
10 ml Pipet DIW @ 20°C
10.0682 $\bar{x}$ = 10.0500
10.0237
10.0568 S = .0166
10.0549
10.0462 RSD = .17%
Del = 10.0681

Dil Fact: .0985 → 10.0681 / .0985 = 103.2 X

M&TE: X Cell 2 (360-06-01-016) Mettler AE160 Balance Other ____
____ Cell 5 (360-06-01-039) Mettler AT400 Balance
____ Bench (360-06-01-040) Denver A160 Balance
____ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 6/18/96 Reviewer: [signature] Date: 6/18/96

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: GARY SEVIGNY

WP Number: K 45606

TI#/ASR: ASR 3174

Procedure: BENCH INSTRUCTION

96-04817 HLV104 COMP: 96-04818 HLV107 COMP ION CHROMATOGRAPHY

SAMPLE IDENTIFICATION

Filtered about 1 ml of 96-4818 thru .45 um acrodisc then made a double dilution on both samples.
.1 → 10 then 1 → 10 (DIW) = 1140.2 X

Rigid calibrations are on acid digestion Bench Sheet.

M&TE: X Cell 2 (360-06-01-016) Mettler AE160 Balance Other _____

____ Cell 5 (360-06-01-039) Mettler AT400 Balance

____ Bench (360-06-01-040) Denver A160 Balance

____ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 6/19/96

Reviewer: Rick S. Steele Date: 6/24/96

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3174 PROJECT NO.: 24896 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 6/18/96 PREP TYPE: NONE

ANALYST: [signature] DATE: 6/12/96 CONTROLLING PROCEDURE: N/A

REVIEW: [signature] DATE: 6/19/96 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: GARY SEVIGNY CORE ID: N/A TANK ID: TANK 104/105 & 107

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	LIMS ORDER NUMBER
K45606	96-04817-DB	DILUENT BLANK	IC						NONE	DIW	.0985	
	96-04817	HLV104 COMP							1110.2X		1.0021	41079
	96-04817-DUP	HLV104 COMP DUP									10.0651	
	96-04818	HLV107 COMP										41083
	96-04818-DUP	HLV107 COMP DUP										

Dilution: $\left(.0985 \rightarrow \frac{10.0651}{.0985}\right)\left(1.0021 \rightarrow \frac{10.0651}{1.0021}\right) = 1110.2X$

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 SAL-SRPL

PNL-ALO-128

Nitric and Hydrochloric Acid Extraction of High-level Radioactive Liquids and TCLP Leachates

Client: GARY SEVIGNY QA plan: MCS-033

Work Auth. Doc (WAD): ASR 31741 Impact level: II

Work Package/Project: K45606 Balance M&TE: 360-062-01-016

Tank/Core/Other ID: 324 HLV TANKS Prep. lab (SAL or SRPL): SAL

Additional Information: USE 1ML SAMPLE DILUTED WITH DIW TO 5MLS FOR DIGESTION. USE 1ML SPIKE VOLUME. BRING TO 25MLS FINAL VOLUME.

	ALO #	Client ID	Sample Net Weight (g)	Spike volume (ml)	Final extract volume (ml)	Process Factor	Tare	Gross	
1	96-04817-PB	PROCESS BLANK			25	25	18-96		
2	96-04817-BS	BLANK SPIKE		1.0021		24-25			
3	96-04817	HLV104 COMP	1.0085			24.79	21.5222	22.5307	
4	96-04817-DUP	HLV104 COMP DUP	1.0131			24.68	21.4471	22.4622	
5	96-04817-MS	HLV104 COMP MATRIX SPIKE	1.0170	1.0021		24.58	21.4273	22.4463	
6	96-04818	HLV107 COMP	1.0489			23.83	21.3613	22.4102	
7	96-04818-DUP	HLV107 COMP DUP	1.0723			23.31	21.5236	22.5959	
8	96-04818-MS	HLV107 COMP MATRIX SPIKE	1.0710	1.0021		23.34	21.6365	22.7075	
9									
10									
11									
12									
13									
14									
15									
16									

Analyst comments (e.g. identification number for spikes, sample preparation problems encountered, unusual sample properties): SAMPLES FILTERED: YES [ ] NO [X]

Analyst/Date: [signature] 6/18/96 Reviewer/Date: [signature] 6/18/96 rev. 2.0 3-3-95 JMR

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3174 PROJECT NO.: 24896 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 6/10/96 PREP TYPE: ACID DIGESTION

ANALYST: [signature] DATE: 6/19/96 CONTROLLING PROCEDURE: N/A

REVIEW: [signature] DATE: 6/19/96 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: GARY SEVIGNY CORE ID: N/A TANK ID: TANK 104/105 & 107

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	LIMS ORDER NUMBER
K45606	96-04817-PB	PROCESS BLANK	ICP/MS			25			103.2X	2% HNO3	1.0021	
	96-04817-BS	BLANK SPIKE				6/19/96 1:10 1.0021	9606071 SP1	1.0021			.0775	
	96-04817	HLV104 COMP		1.0035							10.0631	41078
	96-04817-DUP	HLV104 COMP DUP		1.0131								
	96-04817-MS	HLV104 COMP MATRIX SPIKE		1.0170		6/19/96 1:10 1.0021	9606071 SP1	1.0021				
	96-04818	HLV107 COMP		1.0487								41081
	96-04818-DUP	HLV107 COMP DUP		1.0723								
	96-04818-MS	HLV107 COMP MATRIX SPIKE		1.0710		6/19/96 1:10 1.0021	9606071 SP1	1.0021				

DIL FACT: .0775 → 10.0631 = 103.2X

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3174 PROJECT NO.: 24896 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 6/18/96 PREP TYPE: ACID DIGESTION

ANALYST: [signature] DATE: 6/19/96 CONTROLLING PROCEDURE: N/A

REVIEW: [signature] DATE: 6/19/96 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: GARY SEVIGNY CORE ID: N/A TANK ID: TANK 104/105 & 107

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT g	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	LIMS ORDER NUMBER
K45606	96-04817-PB	PROCESS BLANK	SEE BELOW			25			103.2X	2% HNO3	.0955	
	96-04817	HLV104 COMP		1.0085							10.0681	41078
	96-04817-DUP	HLV104 COMP DUP		1.0131								
	96-04818	HLV107 COMP		1.0457								41081
	96-04818-DUP	HLV107 COMP DUP		1.0723								
		96-04817 ------>	GEA									
			GROSS ALPHA									
		96-04818 ------>	GEA									
			ALPHA AEA									
			Am/Cm FOR ICP/MS									41082

Dil. Fact: .0955 → 10.0681 = 103.2X

Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: Gary Savigny

WP Number: K45606

TI#/ASR: 3174

Procedure: Sp. Gr.

HLV 104 Comp 107 Comp.

SAMPLE IDENTIFICATION

96-4817
19.3765
9.3054
10.0711 ÷ 10 = 1.0071

96-4818
19.6435
8.8888
10.7547 ÷ 10 = 1.0755

Acid Digest
1 ml Pipet, DIW @ 22°C (1.002222)
.9994 $\bar{x}$ = .9999 g.
.9996 S = .0009
1.0015 RSD = .09%
.9994 Del = 1.0021 ml
.9998

Acid Digest
100λ Pipet DIW @ 22°C
.0983 $\bar{x}$ = .0983 g.
.0982
.0983 S = .0001
.0982
.0984 RSD = .09%
Del = .0985 ml.

Acid Digest
10 ml Pipet DIW @ 20°C
10.0682 $\bar{x}$ = 10.0500
10.0237
10.0568 S = .0166
10.0549
10.0462 RSD = .17%
Del = 10.0681

Dil Fact: .0985 → 10.0681 / .0985 = 103.2 X

M&TE: X Cell 2 (360-06-01-016) Mettler AE160 Balance Other _____

____ Cell 5 (360-06-01-039) Mettler AT400 Balance

____ Bench (360-06-01-040) Denver A160 Balance

____ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 6/18/96

Reviewer: [signature] Date: 6/18/96

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 SAL-SRPL

PNL-ALO-128

Nitric and Hydrochloric Acid Extraction of High-level Radioactive Liquids and TCLP Leachates

Client: GARY SEVIGNY QA plan: MCS-033
Work Auth. Doc (WAD): ASR 3174 Impact level: II
Work Package/Project: K45606 124896 Balance M&TE: 360-06-01-016
Tank/Core/Other ID: 324 HLV TANKS Prep. lab (SAL or SRPL): SAL
Additional Information: USE 1ML SAMPLE DILUTED WITH DIW TO 5MLS FOR DIGESTION. USE 1ML SPIKE VOLUME. BRING TO 25MLS FINAL VOLUME.

	ALO #	Client ID	Sample Weight (g)	Spike volume (ml)	Final extract volume (ml)	Process Factor	Post DIGEST Dilution Factor		
1	96-04817-PB	PROCESS BLANK			25	25	5.01 X		
2									
3	96-04817	HLV104 COMP	1.0085			24.79			
4	96-04817-DUP	HLV104 COMP DUP	1.0131			24.68			
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15					2(1.0032) -1-	8.0385	= 5.0064	X	
16						2(1.0032)			

Analyst comments (e.g. Identification number for spikes, sample preparation problems encountered, unusual sample properties): SAMPLES FILTERED: YES [ ] NO [X]

Pipet CALIB: DIW @ 23°C

8.0112 $\bar{x}$ = 8.0187 g.
8.0247 S = .0065
8.0234 RSD = .08%
8.0120
8.0221 Dil = 8.0385 ml

1.0008 $\bar{x}$ = 1.0007 g.
.9992 S = .0010
1.0019
1.0002 RSD = .1%
1.0013 Dil = 1.0032 ml.

Analyst/Date: [signature] 7/1/96 Reviewer/Date: [signature] 7/1/96

rev.2.0 3-9-95 JMR

ATTACHMENT 2

Battelle
Putting Technology To Work

Project No. 24596

Internal Distribution

File/LB

Date July 8, 1996

To Ofelia Bredt

From Larry Greenwood LRG

Subject Radiochemical Analyses for Gary Sevigny (96-4817-4818)

Composite samples from HLV104 and HLV107 were prepared in the hot cell by acid digestion. Small aliquots were then analyzed for total alpha activity, gamma energy analysis, plutonium, americium/curium, and plutonium isotopics. Results are listed on the attached spreadsheet and are discussed below.

Total Alpha Analyses Total alpha activities were measured following procedures PNL-ALO-420/421. Duplicate analyses show good agreement and a ^{239}Pu standard recovered at 109%. No alpha activity was observed in either the prep blank or the lab blank.

Plutonium, Americium, and Curium Analyses Procedure PNL-ALO-417 was followed to sequentially separate the Pu and Am/Cm fractions. Tracers of ^{242}Pu and ^{243}Am were added to determine the radiochemical yields. Blank spikes of ^{241}Am and ^{239}Pu recovered at 90 and 121%, respectively. The sample, duplicate, and lab replicate results show good agreement. The lab blank indicated a small amount of contamination; however, the activities were at least 5 orders of magnitude below that of the samples.

The results indicate that ^{241}Am, $^{243+244}$Cm, and ^{239}Pu make up most of the alpha activity, in that order. The sum of the individual alpha emitters is in excellent agreement with the total alpha results.

Plutonium Isotopics The plutonium isotopic mass percents were measured in duplicate by Thermal Ionization Mass Spectrometry following procedure PNL-ALO-455. The sample showed some interference at mass 238 from uranium. Measurement of standard NBS 946 indicated excellent agreement. The conversion of mass to activity for the various plutonium isotopes is given for convenience on a second attached spreadsheet.

Gamma Energy Analyses Small fractions of each sample were directly gamma counted using procedure PNL-ALO-450. Results indicate that ^{137}Cs is by far the largest source of gamma activity. However, ^{134}Cs, ^{154,155}Eu, and ^{241}Am were also easily detected. The gamma results for ^{241}Am are in reasonable agreement with the alpha energy analyses (AEA); however, the AEA results are judged to be more reliable due to potential interferences with the low energy gamma from ^{241}Am.

Battelle Pacific Northwest National Laboratory
Analytical Chemistry Laboratory
Radiochemistry Group - 325 Bldg.

Client: G. Sevigny
WP #: K45606

96-4017
7/1/96

Cognizant Scientist: LR Greenwood Date: 7/1/96

Review: T Trang-le Date: 7/1/96

Measured Activities (uCi/g)

ALO ID Client ID	Total Alpha Error +/-	Am-241 Error +/-	Alpha Energy Analysis Cm-243+ Cm-244 Error +/-	Cm-242 Error +/-	Pu-239+ Pu-240 Error +/-	Pu-238 Error +/-	Gamma Energy Analysis Cs-134 Error +/-	Cs-137 Error +/-	Eu-154 Error +/-	Eu-155 Error +/-	Am-241 Error +/-
96-4017PB HLV104 Comp PB	<4. E-3						<3. E-2	7.94E-2 18%	<7. E-2	<9. E-2	<9. E-2
96-4017 HLV104 Comp	1.22E 1 8%						9.35E-1 16%	5.98E 3 2%	5.88E 0 5%	<4. E 0	6.18E 0 26%
96-4017 D HLV104 Comp Duplicate	1.12E 1 8%						1.01E 0 15%	5.99E 3 2%	6.02E 0 5%	<4. E 0	6.25E 0 26%
96-4018 HLV107 Comp	1.40E 3 4%	8.05E 2 4%	5.36E 2 4%	3.51E 0 31%	4.40E 1 22%	1.13E 2 21%	3.46E 1 18%	3.61E 4 3%	6.58E 2 3%	1.33E 2 20%	7.79E 2 6%
96-4018D HLV107 Comp Duplicate	1.38E 3 4%	7.26E 2 4%	4.63E 2 4%	3.85E 0 31%	4.09E 1 21%	1.07E 2 21%	3.70E 1 17%	3.47E 4 3%	6.53E 2 3%	1.12E 2 21%	8.58E 2 6%
96-4018D Replicate HLV107 Comp Duplicate	1.34E 3 4%	7.18E 2 4%	5.00E 2 4%	5.28E 0 26%	4.25E 1 22%	1.10E 2 21%					
Standard	109%	90%			121%						
Blank	<4. E-5	3.70E-5 9%			7.74E-5 21%	2.18E-5 21%					

Plutonium Isotopics (Mass%)

	Pu-238	Pu-239	Pu-240	Pu-241	Pu-242
96-4018 HLV107 Comp	* 2.16E+0	3.50E+1	5.81E+1	2.30E+0	2.45E+0
96-4018D HLV107 Comp Duplicate	* 1.27E+0	3.57E+1	5.84E+1	2.25E+0	2.36E+0
Standard -Measured:	2.10E-1	8.55E+1	1.24E+1	1.26E+0	5.92E-1
Standard -NBS 946	2.10E-1	8.55E+1	1.24E+1	1.26E+0	5.82E-1

* Note: Apparent interference from U-238.

Plutonium Mass%/Activity Conversions G. Sevigny 96-4813 7/1/96

Isotope	Ci/g	Mass%	ug/g	uCi/g	Source	239+240 Ci/g	239+240 Mass%
238	17.11900	1.60	6.43E+00	1.10E+02	AEA	0.164563	93.670
239	0.06204	35.44	9.77E+01	6.06E+00	TIMS		
240	0.22696	58.23	1.61E+02	3.64E+01	TIMS		
241	103.00000	2.32	6.40E+00	6.59E+02	TIMS		
242	0.00393	2.41	6.64E+00	2.61E-02	TIMS		
	sum=	100.00	2.76E+02	8.11E+02	= Total		

Alpha Energy Analysis

Isotope	uCi/g	ug/g	Net Pu,ug/g	
238	110	6.43E+00	4.02E+02	Interference on TIMS
239+240	42.5	2.58E+02	2.76E+02	Use this for analysis

[signature]
7-1-96

ATTACHMENT 3

Battelle
Putting Technology To Work

Project No. 24896

Internal Distribution

File/LB

Date June 27, 1996

To Gary Sevigny

From Irving C. Henry

Subject Titration of 324 HLV Tank 104/107 Samples

The two submitted 324 HLV tank samples were assigned lab designations of 96-4817 and 96-4818 respectively (ASR# 3174). The milli-equivalence of NaOH required to bring the pH of the samples to 10.5 was determined by titrating sample aliquots as per PNL-ALO-228. The Brinkman 636 Titroprocessor, M&TE WB76843, equipped with the Dosimat E635, M&TE WB76839, was used to perform the analysis.

The samples were titrated against a standardized NaOH solution and the milli-equivalence (mEq) of NaOH per volume of sample required to raise the sample pH to 10.5 was calculated with the following equation:

$$mEq = \frac{N \text{ of NaOH} \times \text{Vol[mls] of NaOH}}{\text{Vol[mls] of Sample}}$$

where the "Vol[mls] of NaOH" is the volume of NaOH corresponding to a pH of 10.5

HLV104 Composite was titrated in duplicate:
mEq = 0.21 Std Dev = 0.0007

HLV107 Composite was titrated in triplicate:
mEq = 0.71 Std Dev = 0.0476 (resulting from inhomogeneity of sample)

All data supporting this analysis is recorded in Laboratory Record Book# ACL0018, pages 53 - 63. If you have any questions concerning this data, you may contact me at 373-7231.

Irving C. Henry
Chemist
Analytical Chemistry Lab

Concur:
6-28-96

EE4-1500-001 (4/96)

96-4817 → 4818

-96 Gary Sevigny 376-0395 D7-41 K45606 ASR# 3174

Determine the milliequivalence of NaOH needed to bring the pH of 2 samples to 10.5

Analysis was performed in accordance to PNL-ALO-228 with a Brinkmann 636 Titroprocessor (MTE WB76843) with a Dosimat E635 (MTE WB76839)

pH Buffer 4	lot # 946941-24	Exp date	12/96
pH Buffer 7	950389-24		1/97
pH Buffer 10	950253-24		1/97

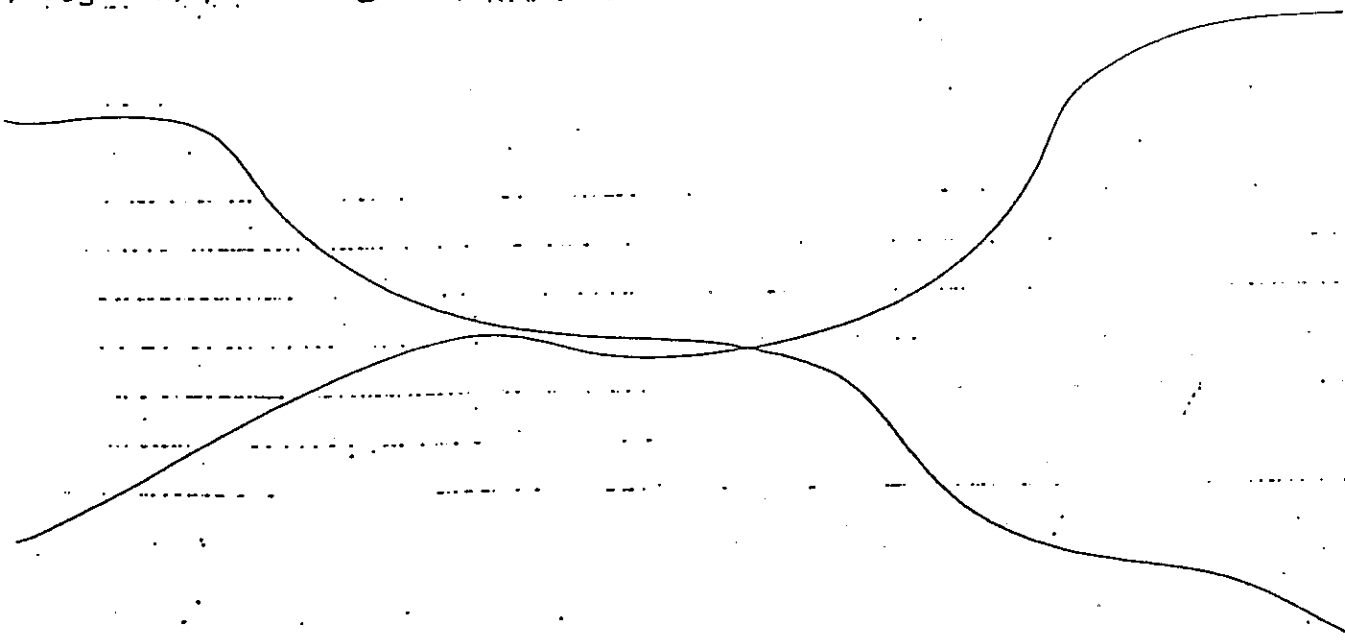
The instrument was retrofitted to the hot cell & the titration took place in-cell. (due to the high rad dose of the samples)

The instrument was calibrated as per procedure and the calibration was verified by reading the pH 7 Buffer → 7.1

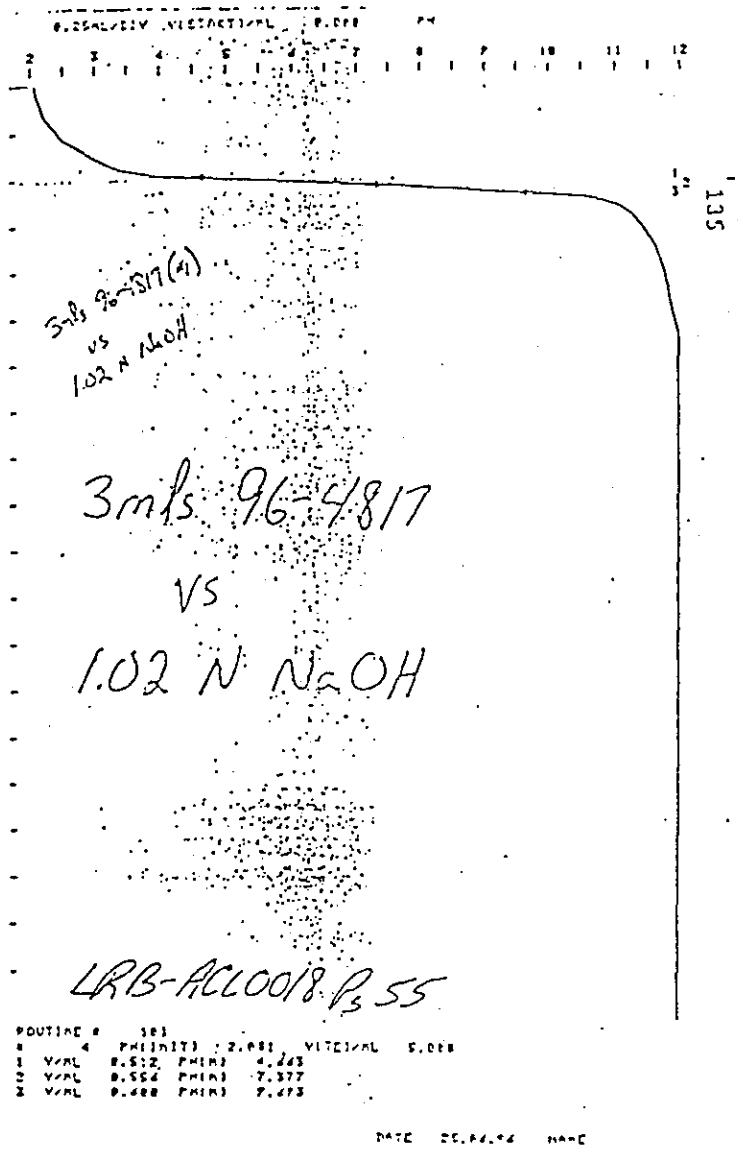
The N of the 1.02 N NaOH Std was verified by titrating it against a standardized .19 M HNO_3 std.

NaOH 1.02 N Chem Rec 08

HNO_3 .19 M Chem Rec 17



6-26-96 Gary Sevigny ASR # 3174 ACL # 96-4817 → 4818 K45Gc



Data pts pertaining to curve - obtained from display of 636 durring titration of sample

Volume [mls]	pH
.295	2.524
.422	3.148
.470	3.478
.510	4.503
.528	5.639
.547	6.675
.565	7.887
.576	8.429
.581	8.429
.593	9.321 *
.607	10.068
.619	10.530
.635	10.840
.661	11.068
.706	11.281
.776	11.460
.880	11.644

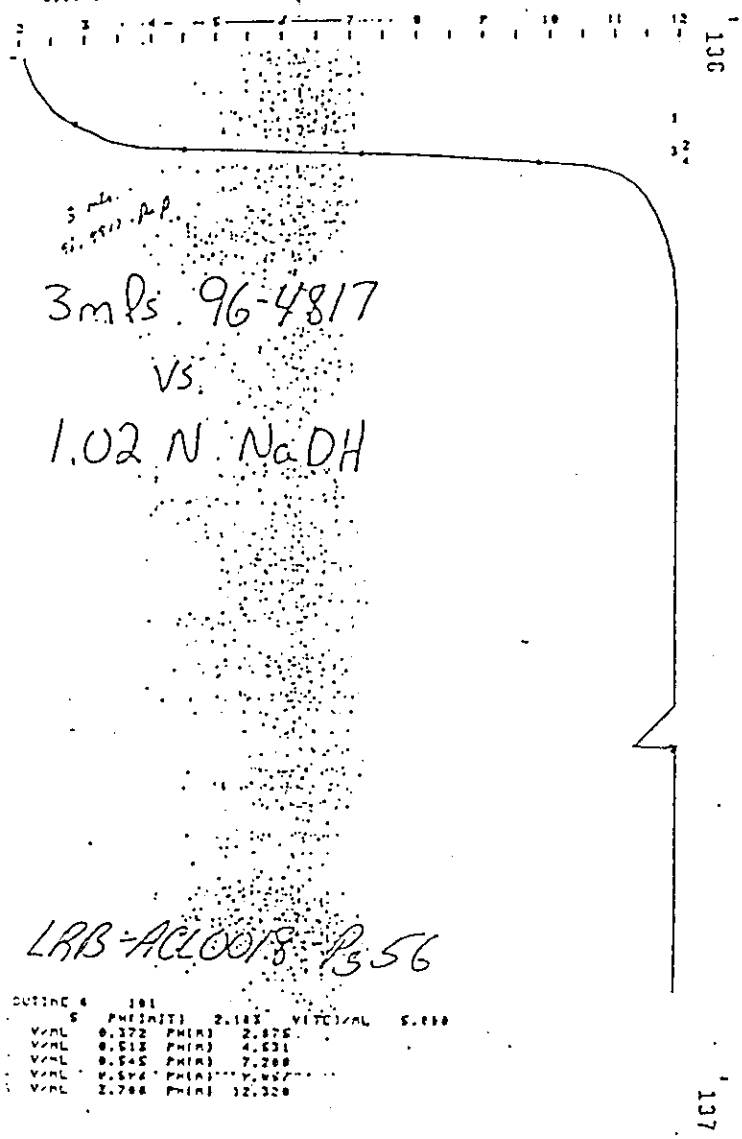
* Linear curve fit was applied to the cited data pts to yie a data pt @ pH 10.5 ⟹ vol .618mls pH 10.5

The milli equivalence of NaOH required to bring the sample to the desired pH of 10.5

$$mEq = \frac{N \text{ of NaOH titrant} \times \text{Vol[mls] of NaOH titrant}}{\text{Volume [mls] of Sample}}$$

$$mEq = \frac{1.02N \times .618\text{mls}}{3\text{mls sample}} = 0.210$$

-96 Gary Sevigny ASR#3174 ACL#96-4817 96-4818 K45606



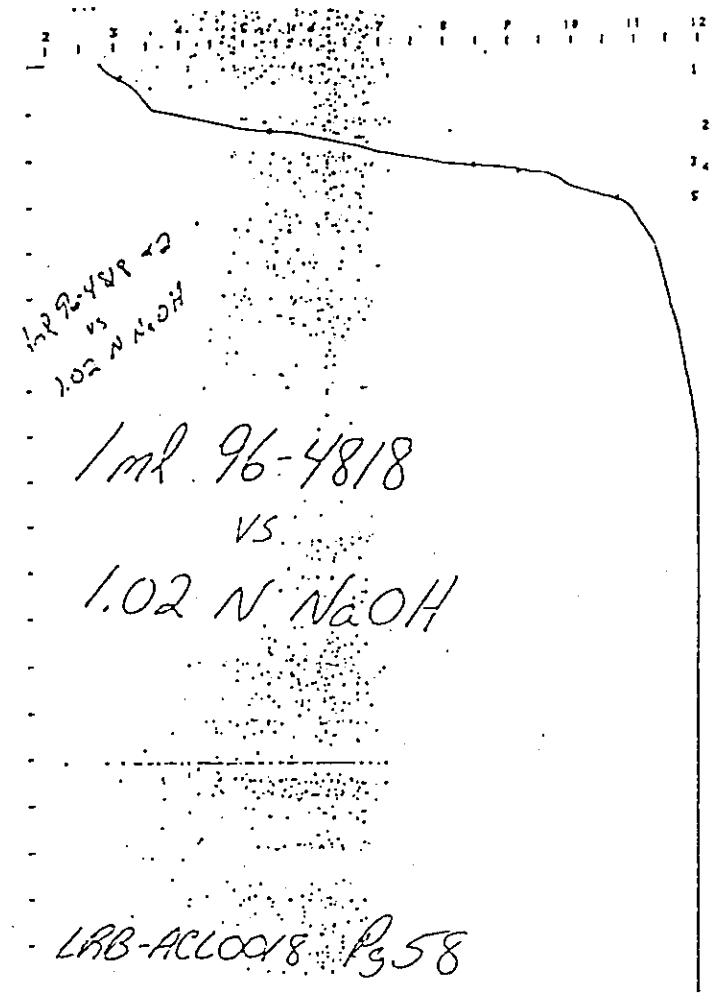
Data Points

Volume [mls]	pH
.298	2.564
.386	2.945
.445	3.301
.501	3.903
.513	4.55
.524	5.442
.539	6.554
.557	8.015
.563	8.357
.575	8.936
.589	9.574
[.603	10.209] *
.617]	10.595
.637	10.894
.667	11.133
.717	11.363
.788	11.547
.891	11.715
1.020	11.859

Linear Curve Fit between these two pts yield ⟹ Vol .614 pH 10.500

$$Eq = \frac{1.02N \times .614 mls}{3 mls} = .209$$

76 Gary Sevigny ASR#3174 ACL#96-4817 + 96-4818 K45606



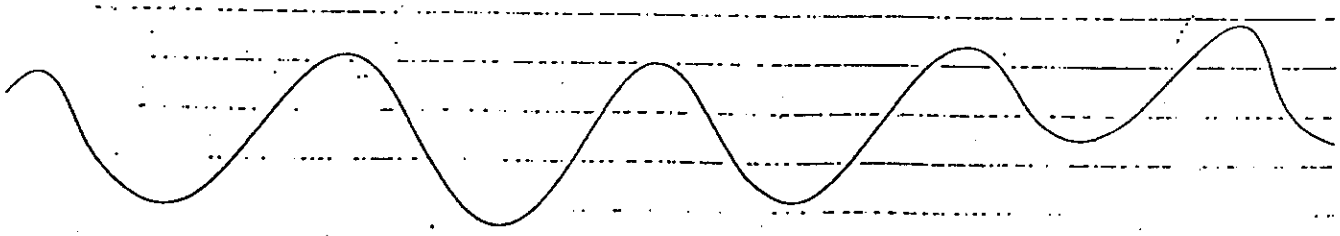
Data Points

Volume [mls]	pH
.375	5.02
.387	5.352
.399	5.770
.434	6.219
.504	7.012
.574	8.123
.591	8.872
.596	8.998
.601	9.076
.607	9.361
.621	9.514
.626	9.662
.645	9.800
.697	10.014 *
.774	10.825
.814	10.989
.892	11.124
1.018	11.365
1.138	11.456

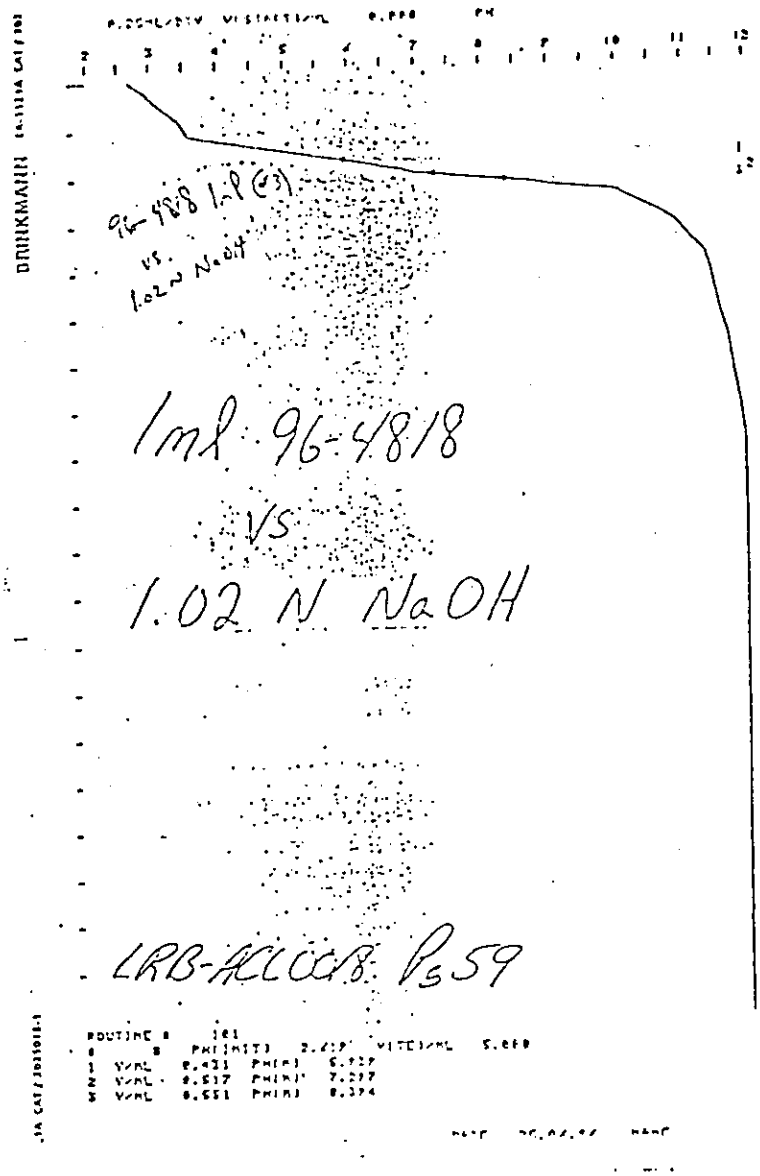
139

Linear Curve Fit between these three pts yields ⇒ Vol .743mls pH 10.500
Correlation Coefficient = 1.0000

$$mEq = \frac{1.02N \times .743mls}{1ml} = .758$$



6-26-96 Gary Seigny ASR# 3174 ACL# 96-4817 & 96-481



Data Pts

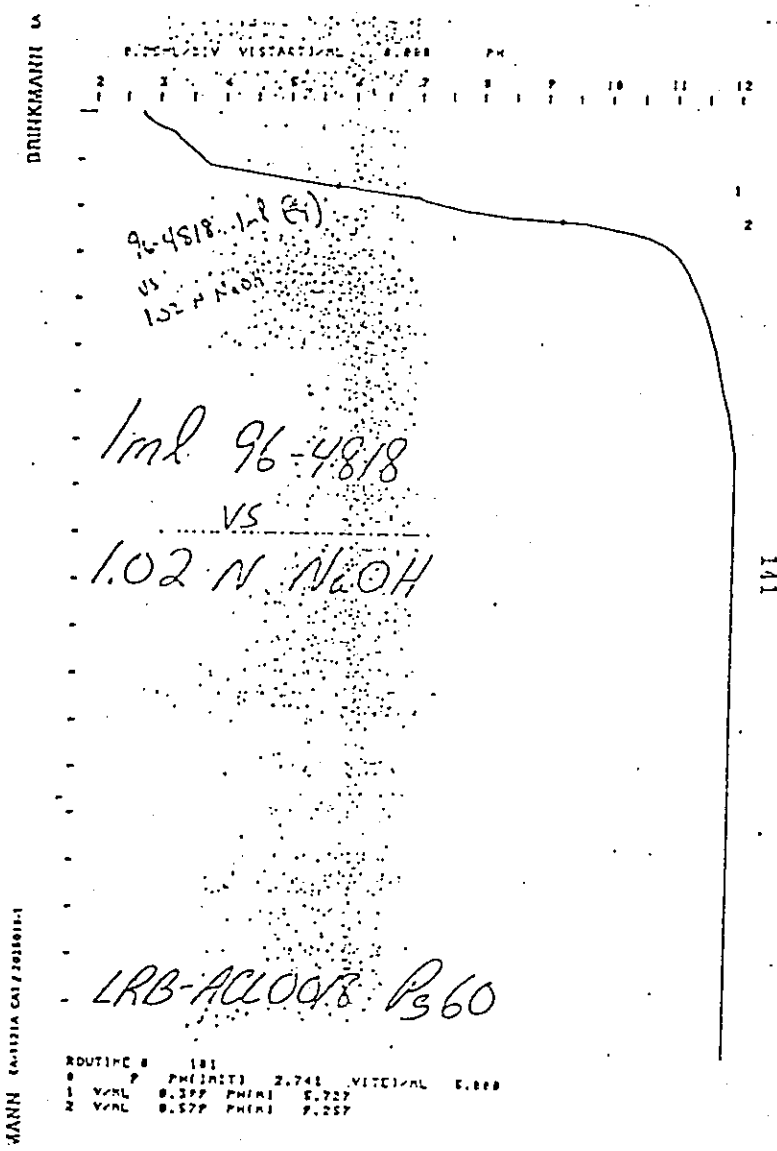
Volume [mls]	pH
.296	3.605
.423	5.836
.474	6.583
.509	7.043
.520	7.444
.531	7.639
.558	8.659
.574	8.981
.580	8.925
.619	10.067
.638	10.127 *
.728	10.663
.789	10.938
.861	11.126
.964	11.401
1.064	11.493
1.228	11.598
1.408	11.753
1.574	11.823
1.773	11.941

* Linear Curve Fit between these two pts yield ⟹ Vol .701 mls
pH 10.5

$$mEq = \frac{1.02\,N \times .701\,mls}{1\,ml} = .715$$

6-27-96 6-28-96

6-26-96 Gary Sevigny ASR#3174 ACL#96-4817 & 96-4818 K456



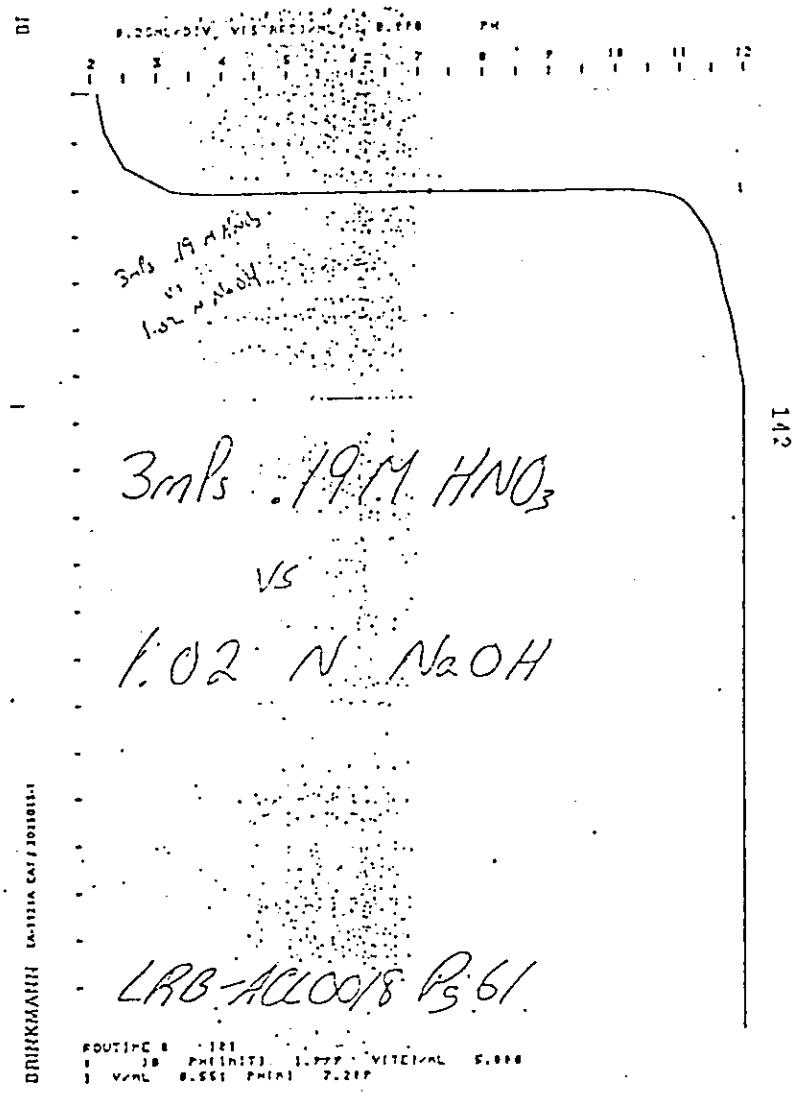
Data Pts

Volume [mls]	pH
.289	3.786
.377	5.292
.382	5.372
.397	5.657
.407	5.994
.413	6.065
.418	6.120
.458	6.959
.481	7.—
.531	7.836
.564	8.553
.587	9.616
.592	9.704
.597	9.766
[.633	10.329 *
.662]	10.626
.703	10.874
.763	11.086
.848	11.237
.973	11.420

* Linear Fit between these pts yields ⟹ Vol [mls] .650 pH 10.500

$$mEq = \frac{1.02\,N \times .650\,mls}{1\,ml} = .663$$

-96 Gary Sevigny ASR# 3174 ACL# 96-4817 & 96-4818 K456C



s a calibration ck, the pH 7 buffer was measured after
alysis: pH 7 Buffer ⟹ 7.0

And the 1.02 N NaOH was verified vs .19 M HNO_3

$$N\ NaOH = \frac{3\,mls \times .19\,M\ HNO_3}{.551\,mls} = 1.03\,N$$

6-27-96

ATTACHMENT 4

Baffelle
Pacific Northwest Laboratories

Project Number 24896

Internal Distribution

File/LB

Date June 26, 1996

To Ofelia Bredt

From M. O'Neill

Subject 324 HLV Tank 104/105 and 107 Samples

The solutions from the 324 Building high level vault tank 104/105 and 107 were analyzed on 6/20 and 6/26/96 according to procedure PNL-ALO-212 using IC system 1 (M&TE # WD25214). These samples, diluted in the SAL 1140X, (to stay within limits allowed by the RWP) included a dilution blank/96-4817-DB, HLV104 Comp/96-4817, HLV104 Comp DUP/96-4817-DUP, HLV107 Comp/96-4818, and HLV107 Comp DUP/96-4818-DUP. The blank spike, matrix spikes and a duplicate matrix spike (for sample 96-4817 only) were prepared in lab 400 during the sample analysis. Further dilutions of these samples in the lab were not required except in the case of sample HLV107 Comp/96-4818 which required an additional dilution of 4X to determine the nitrate concentation.

IC system 1 was calibrated from 0.25 - 7.5 $\mu g/ml$ for the halides (F, Cl, Br) and 0.5 - 30.0 $\mu g/ml$ for the oxyanions (NO_2, NO_3, PO_4, and SO_4). The continuing calibration "mid" verification standard recovery was within acceptable limits of 100 ± 10%. All analyte concentrations in the dilution blank 96-4817-DB were less than the detection limit. The blank spike recoveries for all the analytes were within acceptable limits of 100 ± 20%. The post matrix spikes of both samples and post matrix spike duplicate of 96-4817 had acceptable recoveries of 100 ± 25%. The relative percent difference (RPD) was also within acceptable limits of less than 20% for all analytes of the sample and duplicate.

All sample and QC results can be found in system file: IC-325-400 System 1 File# 96.22.

M O'Neill 6/26/96
MM O'Neill

Concur: [signature] 6/26/96

ES4:950-001 (10/79)

BATTELLE-PNL

*****ION CHROMATOGRAPHY*****
******ANALYTICAL RESULTS******

Client : ___ G. Sevigny
WP #: ____ K45606

Archive: IC-325-400-SYS-1 File #: 96.22

LAB NUMBER / SAMPLE ID	DL	>>>>>>>>>>>>>>>>>> CONCENTRATION (a) <<<<<<<<<<						
		F (0.25)	Cl (0.25)	NO2 (0.50)	Br (0.25)	NO3 (0.50)	PO4 (0.50)	SO4 (0.50)
96-04817-DB		<290	<290	<570	<290	<570	<570	<570
HLV104 Comp								
Blank Spike Recovery (%)		103	113	89	93	93	91	86
Multiplier		1140.2	1140.2	1140.2	1140.2	1140.2	1140.2	1140.2
Date of Analysis		06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	6/20/96
96-04817		<290	<290	<570	<290	12,300	<570	800
HLV104 Comp								
Spike Recovery (%)		97, 92	95, 92	92, 89	95, 92	101, 98	79, 80	96, 93
Multiplier		1140.2	1140.2	1140.2	1140.2	1140.2	1140.2	1140.2
Date of Analysis		06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	6/20/96
DUP96-04817		<290	<290	<570	<290	13,700	<570	900
HLV104 Comp								
Spike Recovery (%)								
Multiplier		1140.2	1140.2	1140.2	1140.2	1140.2	1140.2	1140.2
Date of Analysis		06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	6/20/96
96-04818		<290	<290	<570	<290	54,000	<570	<570
HLV107 Comp								
Spike Recovery (%)		101	99	94	102	100	98	97
Multiplier		1140.2	1140.2	1140.2	1140.2	4560.8	1140.2	1140.2
Date of Analysis		06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	6/20/96

Comments

M & TE: PN-900902 WD25214
Method : PNL-MA599-ALO-212

Analyst : [illegible] Date : 6-26-96
Reviewer: [illegible] Date: 6-26-96

(a) Units = ug/mL (liquids), ug/g (solids), unless otherwise noted.
(b) Spike recovery analysis requirements as per by ALO-212, MCS-033--or at analysts discretion.
(c) Calibration, Verification, & Spike Std. data in IC Std. binder.
(d) Multiply Detection Limit (DL) values by multiplier used to determine a Sample DL value for a particular analyte.
(e) See attached "Client Information Sheet" for accuracy/precision guidelines, unless otherwise noted.

BATTELLE-PNL

*****ICN CHROMATOGRAPHY*****
******ANALYTICAL RESULTS******

Client : ___ G. Sevigny
W/P #: ___ K45606

Archive: IC-325-400-SYS-1 File #: 96.22

LAB NUMBER / SAMPLE ID	DL	>>>>>>>>>>>>>>>>>> CONCENTRATION (a) <<<<<<<<<						
		F (0.25)	Cl (0.25)	NO2 (0.50)	Br (0.25)	NO3 (0.50)	PO4 (0.50)	SO4 (0.50)
DUF96-04818		<290	<290	<570	<290	58,000	<570	<570
HLV107 Comp								
Spike Recovery (%)								
Multiplier		1140.2	1140.2	1140.2	1140.2	4560.8	1140.2	1140.2
Date of Analysis		06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	06/20/96	6/20/96
Spike Recovery (%)								
Multiplier								
Date of Analysis								
Spike Recovery (%)								
Multiplier								
Date of Analysis								
Spike Recovery (%)								
Multiplier								
Date of Analysis								

Comments

M & TE: PN-900902 WD25214
Method : PNL-MA599-ALO-212

Analyst : M. Mill Date : 6-26-96
Reviewer: [illegible] Date: 6-26-96

(a) Units = ug/mL (liquids), ug/g (solids), unless otherwise noted.
(b) Spike recovery analysis requirements as per by ALO-212, MCS-033--or at analysts discretion.
(c) Calibration, Verification, & Spike Std. data in IC Std. binder.
(d) Multiply Detection Limit (DL) values by multiplier used to determine a Sample DL value for a particular analyte.
(e) See attached "Client Information Sheet" for accuracy/precision guidelines, unless otherwise noted.

ATTACHMENT 5

Battelle
Pacific Northwest Laboratories

Project Number _____

Internal Distribution

System File/LB

Date June 28, 1996

To Project manager

From DL Baldwin

Subject TIC (by Dohrmann DC-80) Results for 96-04819 NaOH Solution

This work is done by the UV-catalyzed persulfate/NDIR method, Test Procedure PNL-ALO-382, Rev. 0, "Solutions Analysis: Carbon", using the Dohrmann DC-80 Total Organic Carbon Analyzer. The work was performed to IL II and ASR 3174. The M&TE No. for the carbon measurements is WA64102, M&TE No. for the balance is 362-06-01-046. The data is located in the ALO Records Office System File. TC standard used is potassium acid phthalate, lot# 52809, and the TIC standard is sodium carbonate, lot# 52815.

Narrative: The QC for method involved an abbreviated protocol of a standard, blank, and duplicate. The sample was analyzed in duplicate, by replicate injection. System standards and blanks were all within required limits. TIC only was analyzed due to the abbreviated protocol. No matrix or blank spike was performed due to the abbreviated protocol. The precision (RPD) is high, at 26%, but is due to the low, near detection limit levels.

ACL Number	Sample ID	TIC (ug/ml)	RPD (%)
96-04819	NaOH	26	26%
	Dup	34	

An MDL (Method Detection Limit) was determined from the pooled SD of five batch blanks. MDL is set equal to 10x pooled SD, therefore is equal, with no dilution factor, to 0.5 ug/ml for TC, TOC and TIC. For this sample, with a TIC dilution factor of 5x, the MDL is 2.5 ug/ml.

Concur by: _____ Date: 6-28-96
Disk File: UV-TOC.55 System File: TC062896 Run Log: 002

ATTACHMENT 6

Battelle PNNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

WO/Project: K45606
Client: G Sevigny
Impact Level: II

ACL Nmbr(s): 96-004817

Client ID: "HLV104 COMP"

ASR Nmbr 3174

Total Samples: 1

Procedure: PNL-ALO-211, "Determination of Elements by Inductively Coupled Argon Plasma Atomic Emission Spectrometry" (ICP-AES).

Analyst: DR Sanders

Analysis Date (Filename): 07/01/96 (A0140)

See ALO System File: "ICP-325-405-1" for traceability to Calibration, Quality Control, Verification, and Raw Data.

M&TE Number: ICPAES instrument -- WB73520
Mettler AT400 Balance -- Ser.No. 360-06-01-029

7-2-96
Reviewed by

7-8-96
Concur

7/2/96

Battelle PNNL/ACL/Inorganic Analysis Group: ICPAES Analytical Report

Two radioactive liquid sample aliquots were analyzed by ICPAES following sample preparation by the 325 Shielded Analytical Laboratory. PNL-ALO-128 procedure was used to prepare the sample for analysis ("Nitric and Hydrochloric Acid Extraction of High-level Radioactive Liquids and TCLP Leachates"). Samples were diluted about 125 fold in order to reduce radiation exposure to the technician during ICPAES analysis. Beta-Gamma activity in the sample aliquots was estimated to be about 900 mRem each. Major analytes present in the sample include Iron, Sodium, Strontium and Lanthanum.

Chromium and Lead exceeded TCLP regulatory limits. The measured Lead concentrations were within a factor of 2 times detection limit and therefore may not actually be present. The Lead measurement result may be due to interference from high concentrations of Lanthanum. Lanthanum concentration in the sample was about 275 µg/mL. Following is a list of the TCLP analytes measured: Ag, As, Ba, Cd, Cr, Pb, and Se.

See attached "ICPAES Data Report" for measurement results, detection limits, and etc.

Please note, bracketed values listed in the data report are within ten times instrument detection limit. Those measurement values have a potential uncertainty much greater than 15%.

Comments:

1) "Final Results" have been corrected for all laboratory dilutions performed on the sample during processing and analysis unless specifically noted.

2) Detection limits (DL) shown are for acidified water. Detection limits for other matrices may be determined if requested.

3) Routine precision and bias is typically ± 15% or better for samples in dilute, acidified water (eg. 2% v/v HNO_3 or less) at analyte concentrations greater than ten times detection limit up to the upper calibration level. This also presumes that the total dissolved solids concentration in the sample is less than 5000 mg/mL (0.5 per cent by weight).

4) Absolute precision, bias and detection limits may be determined on each sample if required by the client.

5) The maximum number of significant figures for all ICP measurements is 2.

6) To convert "WT%" to "mg/Kg" or "mg/g", multiply concentration value by 10,000.

7) To convert "mg/Kg" or "ug/g" to "WT%", divide concentration value by 10,000.

7/2/96

Det. Limit (ug/mL)	Multiplier= ALO#= Client ID= Run Date= (Analyte)	124.2 95-4817 HLV1C4 COMP 7/1/95 ug/g	123.6 95-4817 DUP HLV1C4 COMP DUP 7/1/95 ug/g	125.3 95-4817-BLK Process Blank 7/1/95 ug/g	
0.015	Ag	–	–	–	–
0.050	Al	[23]	[22]	[6]	–
0.050	As	–	–	–	–
0.050	B	104	98.4	[57]	–
0.010	Ba	[5]	[4]	–	–
0.005	Be	–	–	–	–
0.100	Bi	–	–	–	–
0.250	Ca	[105]	[156]	[95]	–
0.015	Cd	–	–	–	–
0.150	Ce	–	–	–	–
0.050	Co	–	–	–	–
0.020	Cr	97.8	98.2	[19]	–
0.050	Cu	–	–	–	–
0.050	Dy	–	–	–	–
0.100	Eu	–	–	–	–
0.050	Fe	947	957	[53]	–
2.000	K	–	–	–	–
0.050	La	277	260	–	–
0.030	Li	–	–	–	–
0.100	Mg	[23]	[22]	–	–
0.050	Mn	[18]	[18]	–	–
0.030	Mo	49.5	49.8	–	–
0.250	Na	420	415	[66]	–
0.100	Nd	[43]	[43]	–	–
0.030	Ni	74.1	75.1	[5]	–
0.250	P	–	–	–	–
0.100	Pb	[14]	[14]	–	–
0.250	Pd	–	–	–	–
0.300	Rh	–	–	–	–
0.100	Ru	[52]	[52]	–	–
0.100	Sb	–	–	–	–
0.100	Se	–	–	–	–
0.500	Si	[222]	[174]	[112]	–
1.000	Sn	–	–	–	–
0.015	Sr	222	225	–	–
0.500	Te	–	–	–	–
0.500	Th	–	–	–	–
0.025	Ti	–	–	–	–
0.500	Tl	–	–	–	–
2.000	U	–	–	–	–
0.015	V	–	–	–	–
0.500	W	–	–	–	–
0.025	Y	–	–	–	–
0.020	Zn	[4]	[7]	[6]	–
0.025	Zr	[13]	[11]	–	–

Note: 1) Overall error greater than 10-times detection limit is estimated to be within +/- 15%.
2) Values in brackets [] are within 10-times detection limit with errors likely to exceed 15%.
3) "–" indicate measurement is below detection. Sample detection limit may be found by multiplying "det. limit" (far left column) by "multiplier" (top of each column).

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Battelle
Putting Technology To Work

Project No. 24896

Internal Distribution

Date August 5, 1996 File/LB

To Gary Sevigny

From Ofelia Bredt OB 8/5/96

Subject ICP/MS Results for the 324 High Level Vault Samples

Attached is the ICP/MS analytical results obtained by the 3708 Advanced Inorganic Group (AIG). Analysis was preformed on 324 building 104 and 107 high level vault (HLV) samples. The first set of samples were received on June 12, 1996. The second set of samples were received on June 17, 1996. The analysis requirements for the HLV samples were outlined in ASR 3174 with DSI February 14, 1996 (Gary Sevigny).

Because of the dose rates, both samples required significant dilution. All reported analytical results were corrected for dilutions. In addition, all results are reported on a per gram basis (to convert the results to milliliters use the specific gravity provided in the analytical report issued on July 9, 1996).

During sample receipt it was noted that sample labeling was inconsistent with associated documentation. The 324 technician that prepared and loaded the vials came to the shielded analytical laboratory (SAL) and identified the samples as described in attachment 1. Samples HLV001 through HLV004 were composited and labeled HLV104Comp. Samples HLV005 through HLV008 were composited and labeled HLV107Comp. HLV104Comp was assigned ACL number 96-04817 and HLV107Comp was assigned ACL number 96-04818.

Both HLV104Comp and HLV107Comp were prepared in the SAL by acid digestion. Aliquots of both digestates at a total dilution of 2500 fold were analyzed for ICP/MS. Due to the high instrument background sodium and potassium results were not obtained. The ICP/MS detected contamination in the process blank. The process blank results for Al, Ca, Fe, Mg, Pb, and Zn were comparable in some cases to the results reported for the samples. In addition, silicon was detected in the 1% HNO_3 blank at approximately 40% to 60% of the sample results. The ICP analysis of the process blank also indicated the presence of Al, Fe, Zn, and Ca at similar concentrations in the process blank. As a result, it is believed that the contamination of Al, Fe, Zn, and Ca most likely came from the SAL preparation. For analytes detected in the blanks at levels equal to the samples, indicate a potential false positive for the sample results. The blank spike and matrix spike recoveries for analytes not detected in the process blank were with the required recovery limits. However due to the high concentration of Pb in the process blank, the spike recovery could

not be determine. The uncertainty associated with the Mn, Zn, and Te result were high indicating a potential instability in the instrument.

Concurrence MW 8/5/96

Project Number

Battelle
Pacific Northwest Laboratories

Internal Distribution

3708/108 File
LSO Project File

Date July 24, 1996

To Ofelia Bredt

From James Bramson

Subject ICP/MS Analysis of Submitted Samples
(ACL# 96-4817 and 96-4818)

Pursuant to your request, the samples that you submitted on 6/21/96 were analyzed for selected elements by ICPMS. The results of this analysis are reported on the following pages.

NIST standards were used to generate the calibration curves. An Inorganic Ventures Ca standard and Spex multi-element standards (ICPMS-1,2,3,4) were used as the continuing calibration verification (CCV) standards. Unless otherwise specified, the overall uncertainty of the values is conservatively estimated at ±15% (±20% for Si and Fe), and is based on the precision between consecutive analytical runs as well as the accuracy of the CCV standard results.

Some problems with this analysis include:

- Sodium and potassium results were not obtained due to high instrument background for both elements.
- Strontium and barium results appear to be biased low.
- Results for Mg, Al, Ca, Fe, Zn and Pb are very high in the the process blank.
- There was a high silicon concentration in the 1% HNO_3 blank.
- Spike recovery results for Pb are poor.
- High uncertainties for Mn, Zn and Te.

If you have any questions regarding this analysis, feel free to call me at 372-0624 or Eric Wyse at 376-3074.

James Bergman
7/29/96

DATA REVIEW

Reviewed by: [signature]

Date: 7/29/96 Pages: 1 of 3

Gary Sevigny Anaylsis

July 29, 1996

Results are reported in µg/g (ppm) of ~~solid~~ CPB 8/5/94 sample

Sample Number	ICP/MS Number	Mg µg/g	Al µg/g	Si µg/g	Ca µg/g	Ti µg/g	V µg/g	Cr µg/g	Mn µg/g	Fe µg/g	Co µg/g
1%HNO3	6715a1	<0.001	0.004±0.003	0.0829	<0.01	<0.0005	<0.0005	0.006±0.004	0.005±0.003	<0.01	<0.0005
Rm111 1%HNO3	6715a2							0.001±0.001	0.001±0.002		<0.0005
4817-PB	6715a3	120	150±20	162	6220	24	13	<10	<10	1160	<5
4817-BS	6715a28	44.4	145	555	2100	8.3	10±3	150±30	46±44	<100	<5
Spike Recovery			-7%					100%			
4817	6715a27	65.2	74.4	537	1930	8.7	15	120±30	87±38	1500	5.4
4817 Dup.	6715a30	51±6	79.5	405	1700±200	8.9	12	110±30	79±43	1490	5.1
4817-MS	6715a29	71.0	137	761	2460	8±3	12	230±30	84±50	740±100	5±3
Spike Recovery			81%					78%			
4818	6715a31	89.8	164	335	2850	15±3	15	357	220±40	9990	8±3
4818 Dup.	6715a26	84.5	166	532	2480	13±3	14	390	240±30	8440	7.6
4818-MS	6715a25	97.8	228	550±70	3560	23±3	13	506	260±70	9030	8±3
Spike Recovery			90%					94%			
CCV results are in ng/ml (ppb)											
10ppb ICPMS-1	6715a20										
10ppb ICPMS-2	6715a21							9.5±1.8	10±2		9.37
10ppb ICPMS-3	6715a22										
10ppb ICPMS-4	6715a23										
20ppb ICPMS-1	6715a32										
20ppb ICPMS-2	6715a33							18±3	20±4		18.8
20ppb ICPMS-3	6715a34										
20ppb ICPMS-4	6715a35										
4ppb ICPMS-2	6723a15	3.82	3.87				3.51				
100ppb ICPMS-2	6723a16	96.9	88.8				96.3			111	
100ppb ICPMS-2	6723a31	95.4	89.3				94.8			55±14	
300ppb ICPMS-2	6723a38									265	
50ppb ICPMS-4	6723a17			53.8		49.6					
300ppb ICPMS-4	6723a37			258		275					
100ppb Ca I.V.	6723a20				110±20						
200ppb Ca I.V.	6723a36				184						

James Brown
7/29/96

DATA REVIEW

Reviewed by: [signature]

Date: 7/29/96 Pages: 2 of 3

Gary Sevigny Anaylsis

July 29, 1996

OPS 8/5/96

Results are reported in µg/g (ppm) of ~~solid~~ sample

Sample Number	ICP/MS Number	Ni µg/g	Cu µg/g	Zn µg/g	Se µg/g	Sr µg/g	Zr µg/g	Mo µg/g	Te µg/g	Cs µg/g	Ba µg/g
1%HNO3	6715a1	0.005±0.001	0.001±0.001	0.003±0.003	0.006±0.004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Rm111 1%HNO3	6715a2	0.002±0.001	<0.0005	<0.001	0.002±0.004	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005
4817-PB	6715a3	<10	<5	294	<50	<5	<5	<5	<5	<2	<5
4817-BS	6715a28	34±13	8±10	100±30	<50	209	10±8	<5	10±10	<2	322
Spike Recovery						83%					80%
4817	6715a27	84±13	10±18	110±30	80±150	159	13±8	42.6	<5	145	8±5
4817 Dup.	6715a30	79±28	18±13	120±40	<50	156	15±2	46.5	25±15	158	10±3
4817-MS	6715a29	86.5	10±13	90±40	80±20	373	13±2	46±8	38±53	161	340
Spike Recovery						87%					84%
4818	6715a31	320±50	30±13	100±20	<50	362	150±30	767	30±10	517	502
4818 Dup.	6715a26	324	27±10	120±30	150±50	383	120±20	847	41±38	575	541
4818-MS	6715a25	347	40±25	90±30	160	578	134	886	48.4	576	824
Spike Recovery						88%					81%
10ppb ICPMS-1	6715a20										
10ppb ICPMS-2	6715a21	9.40	8.9±1.0	10±3	11.1	9.05				9.56	8.68
10ppb ICPMS-3	6715a22								10±2		
10ppb ICPMS-4	6715a23							9.40			
20ppb ICPMS-1	6715a32										
20ppb ICPMS-2	6715a33	20.0	19.0	21±5	18±6	17.6				17.9	17.6
20ppb ICPMS-3	6715a34								18.5		
20ppb ICPMS-4	6715a35							18.4			
4ppb ICPMS-2	6723a15										
100ppb ICPMS-2	6723a16										
100ppb ICPMS-2	6723a31										
300ppb ICPMS-2	6723a38										
50ppb ICPMS-4	6723a17						49.9				
300ppb ICPMS-4	6723a37						287				
100ppb Ca I.V.	6723a20										
200ppb Ca I.V.	6723a36										

James Brown
7/29/96

DATA REVIEW

Reviewed by: [signature]

Date: 7/29/96 Pages: 3 of 3

Gary Sevigny Anaylsis

July 29, 1996

Results are reported in µg/g (ppm) of ~~solid~~ aqueous sample

Sample Number	ICP/MS Number	La µg/g	Nd µg/g	Dy µg/g	Pb µg/g	U µg/g
1%HNO3	6715a1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Rm111 1%HNO3	6715a2	<0.0005	<0.0005	<0.0005		<0.0005
4817-PB	6715a3	<5	<5	<5	181	<5
4817-BS	6715a28	<5	<5	<5	136	2.84
Spike Recovery					-180%	113%
4817	6715a27	253	44±5	<5	170±20	44.0
4817 Dup.	6715a30	265	41±8	<5	162	41.3
4817-MS	6715a29	252	37.4	<5	164	46.4
Spike Recovery					-8%	97%
4818	6715a31	760	2480	15±5	109	2420
4818 Dup.	6715a26	827	2630	10±2	76.5	2620
4818-MS	6715a25	846	2870	18.0	105	2650
Spike Recovery					-17%	
10ppb ICPMS-1	6715a20	9.66	11±2	9.73		
10ppb ICPMS-2	6715a21					8.16
10ppb ICPMS-3	6715a22					
10ppb ICPMS-4	6715a23					
20ppb ICPMS-1	6715a32	18.6	20.6	19.5		
20ppb ICPMS-2	6715a33					18.5
20ppb ICPMS-3	6715a34					
20ppb ICPMS-4	6715a35					
4ppb ICPMS-2	6723a15				3.92	
100ppb ICPMS-2	6723a16				109	
100ppb ICPMS-2	6723a31				94.7	
300ppb ICPMS-2	6723a38					
50ppb ICPMS-4	6723a17					
300ppb ICPMS-4	6723a37					
100ppb Ca I.V.	6723a20					
200ppb Ca I.V.	6723a36					

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Date August 19, 1996

To Gary Sevigny

From Ofelia Bredt OB

Subject Cadmium Results by ICP/MS on the High Level Vault Samples

Attached are the revised ICP/MS tables. During transcription of the ICP/MS data, the cadmium result was inadvertently omitted from the August 5, 1996 ICP/MS tables. Please discard the August 5, 1996 ICP/MS tables and replace with the attached ICP/MS tables.

Concurrence M. O'Neill 8-19-96

8/14/96

Reviewed by: [signature]

Date: 8/14/96 Pages: 1 of 5

Gary Sevigny Anaylsis

July 29, 1996 (revised 8/14/96)

Results are reported in µg/g (ppm) of solid sample

Sample Number	ICP/MS Number	Mg µg/g	Al µg/g	Si µg/g	Cu µg/g	Ti µg/g	V µg/g	Cr µg/g	Mn µg/g	Fe µg/g	Co µg/g
1%HNO3	G715a1	<0.001	0.004±0.003	0.0029	<0.01	<0.0005	<0.0005	0.006±0.004	0.005±0.003	<0.01	<0.0005
Dm111 1%HNO3	G715a2							0.001±0.001	0.001±0.002		<0.0005
4817-PB	G715a3	120	150±20	162	6220	24	13	<10	<10	1160	<5
4817-BS	G715a28	44.4	145	555	2100	0.3	10±3	150±30	46±44	<100	<5
Spike Recovery			-7%					100%			
4817	G715a27	65.2	74.4	537	1930	0.7	15	120±30	67±38	1500	5.4
4817 Dup.	G715a30	51±6	79.5	405	1700±200	0.9	12	110±30	79±43	1490	5.1
4817-MS	G715a29	71.0	137	761	2460	0±3	12	230±30	84±50	740±100	5±3
Spike Recovery			81%					78%			
4818	G715a31	89.8	164	335	2050	15±3	15	357	220±40	9990	8±3
4818 Dup.	G715a26	84.5	166	532	2480	13±3	14	390	240±30	8440	7.6
4818-MS	G715a25	97.8	220	550±70	3560	23±3	13	506	260±70	9030	8±3
Spike Recovery			90%					94%			
CCV results are in ng/ml (ppb)											
10ppb ICPMS-1	G715a20										
10ppb ICPMS-2	G715a21							9.5±1.8	10±2		9.37
10ppb ICPMS-3	G715a22										
10ppb ICPMS-4	G715a23										
20ppb ICPMS-1	G715a32										
20ppb ICPMS-2	G715a33							18±3	20±4		18.8
20ppb ICPMS-3	G715a34										
20ppb ICPMS-4	G715a35										
4ppb ICPMS-2	G723a15	3.82	3.87				3.51				
100ppb ICPMS-2	G723a18	96.9	88.8				96.3			111	
100ppb ICPMS-2	G723a31	95.4	89.3				94.8			55±14	
300ppb ICPMS-2	G723a38									265	
50ppb ICPMS-4	G723a17			53.8		49.6					
300ppb ICPMS-4	G723a37			258		275					
100ppb Ca I.V.	G723a20				110±20						
200ppb Ca I.V.	G723a36				184						

8/14/96

Reviewed by: [illegible]

Date: 8/14/96 Pages: 2 of 5

Gary Sevigny Anaylsis

July 29, 1996 (revised 8/14/96)

Results are reported in µg/g (ppm) of solid sample

Sample Number	ICP/MS Number	Ni µg/g	Cu µg/g	Zn µg/g	Se µg/g	Sr µg/g	Zr µg/g	Mo µg/g	Cd µg/g	Te µg/g	Cs µg/g	Ba µg/g
1%HNO3.	6715a1	0.005±0.001	0.001±0.001	0.003±0.003	0.006±0.004	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Rm111 1%HNO3	6715a2	0.002±0.001	<0.0005	<0.001	0.002±0.004	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
4817-PB	6715a3	<10	<5	294	<50	<5	<5	<5	<5	<5	<2	<5
4817-BS	6715a28	34±13	8±10	100±30	<50	209	10±8	<5	18±3	10±10	<2	322
Spike Recovery						83%			103%			80%
4817	6715a27	84±13	10±10	110±30	80±150	159	13±8	42.6	<5	<5	145	8±5
4817 Dup.	6715a30	79±20	18±13	120±40	<50	156	15±2	46.5	6.1	25±15	150	10±3
4817-MS	6715a29	86.5	10±13	90±40	80±20	373	13±2	46±8	20.5	30±53	161	340
Spike Recovery						87%			101%			84%
4818	6715a31	320±50	30±13	100±20	<50	362	150±30	767	30.3	30±10	517	502
4818 Dup.	6715a26	324	27±10	120±30	150±50	383	120±20	847	26.9	41±38	575	541
4818-MS	6715a25	347	40±25	90±30	160	578	134	886	41±10	48.4	576	824
Spike Recovery						88%			76%			81%
10ppb ICPMS-1	6715a20											
10ppb ICPMS-2	6715a21	9.40	8.9±1.0	10±3	11.1	9.05			9.0±1.0		9.56	8.60
10ppb ICPMS-3	6715a22									10±2		
10ppb ICPMS-4	6715a23							9.40				
20ppb ICPMS-1	6715a32											
20ppb ICPMS-2	6715a33	20.0	19.0	21±5	18±6	17.6			18.8		17.9	17.6
20ppb ICPMS-3	6715a34									18.5		
20ppb ICPMS-4	6715a35							18.4				
4ppb ICPMS-2	6723a15											
100ppb ICPMS-2	6723a16											
100ppb ICPMS-2	6723a31											
300ppb ICPMS-2	6723a38											
50ppb ICPMS-4	6723a17						49.9					
300ppb ICPMS-4	6723a37						287					
100ppb Ca I.V.	6723a20											
200ppb Ca I.V.	6723a36											

/ 8/14/96

DATA REVIEW

Reviewed by: [signature]

Date: 8/14/96 Pages: 3 of 5

Gary Sevigny Anaylsis

July 29, 1996 (revised 8/14/96)

Results are reported in µg/g (ppm) of solid sample

Sample Number	ICP/MS Number	La µg/g	Nd µg/g	Dy µg/g	Pb µg/g	U µg/g
1%HNO3	6715a1	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Rm111 1%HNO3	6715a2	<0.0005	<0.0005	<0.0005		<0.0005
4817-PB	6715a3	<5	<5	<5	181	<5
4817-DS	6715a28	<5	<5	<5	136	2.04
Spike Recovery					~180%	113%
4817	6715a27	253	44±5	<5	170±20	44.0
4817 Dup.	6715a30	265	41±8	<5	162	41.3
4817-MS	6715a29	252	37.4	<5	164	46.4
Spike Recovery					-8%	97%
4818	6715a31	760	2480	15±5	109	2420
4818 Dup.	6715a26	827	2630	10±2	76.5	2620
4818-MS	6715a25	846	2870	18.0	105	2650
Spike Recovery					-17%	
10ppb ICPMS-1	6715a20	9.66	11±2	9.73		
10ppb ICPMS-2	6715a21					8.16
10ppb ICPMS-3	6715a22					
10ppb ICPMS-4	6715a23					
20ppb ICPMS-1	6715a32	18.6	20.6	19.5		
20ppb ICPMS-2	6715a33					18.5
20ppb ICPMS-3	6715a34					
20ppb ICPMS-4	6715a35					
4ppb ICPMS-2	6723a15				3.92	
100ppb ICPMS-2	6723a16				109	
100ppb ICPMS-2	6723a31				94.7	
300ppb ICPMS-2	6723a38					
50ppb ICPMS-4	6723a17					
300ppb ICPMS-4	6723a37					
100ppb Ca I.V.	6723a20					
200ppb Ca I.V.	6723a36					

ICP ANALYSIS ON ACIDIFIED SAMPLES

Element Concentration in the Sample

1.0 The ICP/AES analysis are performed by the Analytical Process and Support Laboratory (APSL) using the method APSL-14. The instrument used is a Thermo Jarrell-Ash Model 61E Spectrometer located in room 146 in 324 Building.

2.0 Customer: Sevigny — Data File No: 471

3.0 Laboratory Log No.	1478-96	1479-96	0	0	0	0
4.0 Customer's Sample ID	hlv 5	hlv 11	0	0	0	0
	0	0	0	0	0	0
5.0 Acid used	HNO3	HNO3	0	0	0	0
6.0 Dilution Factor	10	10	0	0	0	0
	7X104	7X97				

7.0 ICP Analysis

Since the ICP have detection limit values which are different for each element, concentrations below the estimated detection limits are tabulated as negative values. Sample dilution's performed by this laboratory have been corrected in the tabulated "Element Concentration in the Samples".

Element	Detection Limit	Element Conc in Sample ug/ml	Element Conc in Sample ug/ml	Element Conc in Sample ug/ml	Element Conc in Sample ug/ml	Element Conc in Sample ug/ml	Element Conc in Sample ug/ml
Ag	0.005	-0.05	-0.05	0.00	0.00	0.00	0.00
Al	0.030	-0.30	-0.30	0.00	0.00	0.00	0.00
B	0.010	33.04	42.30	0.00	0.00	0.00	0.00
Ba	0.003	2.38	6.79	0.00	0.00	0.00	0.00
Be	0.003	-0.03	-0.03	0.00	0.00	0.00	0.00
Bi	0.060	-0.60	-0.60	0.00	0.00	0.00	0.00
Ca	0.100	3.03	5.60	0.00	0.00	0.00	0.00
Cd	0.006	-0.06	-0.06	0.00	0.00	0.00	0.00
Ce	0.040	-0.40	0.47	0.00	0.00	0.00	0.00
Co	0.010	-0.10	-0.10	0.00	0.00	0.00	0.00
Cr	0.020	33.86	62.51	0.00	0.00	0.00	0.00
Cu	0.006	-0.06	-0.06	0.00	0.00	0.00	0.00
Dy	0.006	-0.06	-0.06	0.00	0.00	0.00	0.00
Eu	0.004	-0.04	-0.04	0.00	0.00	0.00	0.00
Fe	0.005	-0.05	-0.05	0.00	0.00	0.00	0.00
K	2.000	-20.00	-20.00	0.00	0.00	0.00	0.00
La	0.01	-0.10	-0.10	0.00	0.00	0.00	0.00
Li	0.01	0.03	0.33	0.00	0.00	0.00	0.00
Mg	0.06	-0.60	1.99	0.00	0.00	0.00	0.00
Mn	0.00	-0.03	0.09	0.00	0.00	0.00	0.00
Mo	0.01	14.91	42.16	0.00	0.00	0.00	0.00
Na	0.05	10699.10	17541.00	0.00	0.00	0.00	0.00
Nd	0.02	-0.20	0.20	0.00	0.00	0.00	0.00
Ni	0.02	0.22	0.33	0.00	0.00	0.00	0.00
P	0.08	3.87	5.53	0.00	0.00	0.00	0.00
Pb	0.08	-0.80	-0.80	0.00	0.00	0.00	0.00
S	0.08	375.09	175.71	0.00	0.00	0.00	0.00
Si	0.01	62.81	58.07	0.00	0.00	0.00	0.00
Sn	0.08	8.89	9.51	0.00	0.00	0.00	0.00
Sr	0.00	1.12	3.53	0.00	0.00	0.00	0.00
Te	0.06	-0.60	0.83	0.00	0.00	0.00	0.00
Ti	0.00	-0.03	-0.03	0.00	0.00	0.00	0.00
V	0.01	-0.10	-0.10	0.00	0.00	0.00	0.00
Y	0.00	-0.03	-0.03	0.00	0.00	0.00	0.00
Zn	0.05	-0.50	-0.50	0.00	0.00	0.00	0.00
Zr	0.01	-0.10	-0.10	0.00	0.00	0.00	0.00
	Total =	11238.40	17962.97	0.00	0.00	0.00	0.00

8.0 Comment

9.0 Calculated by and date

10.0 Approved by and date

	tk107 initial	tk107-0.1		tk107-0.2	
Element	mg/L	mg/L	%removed	mg/L	%removed
Al	190.4	1.5	99.2	1.1	99.4
B	144.6	33.4	76.9	27.8	80.8
Ba	1207.8	27.8	97.7	0.8	99.9
Ca	426.9	39.3	90.8	3.0	99.3
Cd	49.4		100.0		100.0
Ce	834.9		100.0		100.0
Cr	426.7		100.0		100.0
Eu	5.4		100.0		100.0
Fe	12923.9	0.0	100.0	0.0	100.0
La	889.5	0.0	100.0		100.0
Mg	49.1	0.7	98.7	0.8	98.4
Mn	244.3		100.0		100.0
Mo	409.4	47.4	88.4	39.8	90.3
Nd	216.4	0.9	99.6	0.9	99.6
P	45.1	0.4	99.2	0.7	98.5
S		38.2		30.7	
Si	39.7		100.0		100.0
Sr	1178.8	228.3	80.6	4.5	99.6
Zn	103.7		100.0		100.0
Zr	14.5	0.0	99.9		100.0

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Date March 18, 1997

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To Gary Sevigny

From M.M. O'Neill and O.P. Bredt

Subject Analytical Results for High Level Vault (HLV) Rinse/Filtered Solid and Resin Samples.

A summary of sample preparations and analyses performed, along with a discussion of results, is presented below for the HLV rinse, filtered solid from the HLV rinse, and resin samples. All preparative benchsheets have been provided in Attachment 1, and analytical results are provided in Attachments 2 & 3. The table below outlines the sample client identification (ID), ACL lab ID, description, analytical services request (ASR) reference number, and receipt date.

Client ID	PNNL ACL Lab ID	Description	ASR #	Receipt Date
HLV-30	96-6864	Tank Rinse	3452	9/26/96
HLV-31	96-6865	Tank Rinse	3452	9/26/96
HLV-30 Filtered Solids	97-0631	Filtered Solid	3569	9/26/96
HLV IX-01	97-0832	Resin	3593	10/22/96
HLV IX-02	97-0833	Resin	3593	10/22/96
HLV IX-03	97-0834	Resin	3593	10/22/96
HLV IX-05	97-0835	Resin	3593	10/22/96
HLV IX-07	97-0836	Resin	3593	10/22/96
HLV IX-08	97-0837	Resin	3593	10/22/96

Preparation of Rinse/96-6864 and Filtered Solid/97-0631:

The HLV-30 rinse, 96-6864, was filtered 10/17/96 in the SAL and found to be 0.3% solids by weight. The filtered solid from this sample, 97-0631, was fused according to PNL-ALO-115, on 3/4/97 in the SAL, and aliquoted for total alpha and ICP/MS. Approximately 40 μg of this solid was fused in a nickel crucible and diluted to 100 ml.

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Sample 96-6864 was acid digested according to PNL-ALO-128, on 2/4/97 in the SAL, and aliquots were sent for ICP/MS, total alpha and GEA analysis. Approximately one gram of sample was digested and brought to a final volume of 25ml. On 2/11/97, an aliquot of 96-6864 was diluted approximately 100 fold, in the SAL, and sent for tritium analysis. All analytical results have been corrected for dilution(s).

Preparation of Resin Samples/97-0832 through 97-0837:

The resin samples were TCLP extracted according to PNL-ALO-110 on 1/29 and 1/30/97, and acid digested according to PNL-ALO-128 on 2/7/97 in the SAL. The digestates were aliquoted for ICP/MS analysis. All analytical results have been corrected for dilution(s). The ICP/MS results have been reported in ug/g because the sample aliquots were taken gravimetrically instead of volumetrically. Assuming the weights represent a 20ml volume, the highest density would be 1.028 g/ml. The results for Ba, Cd, Cr, and Pb would still be below the TCLP limit if the results were adjusted for the density. Sample HLV IX-05 consisted of only 3.7411 g, resulting in a sample dilution factor of 26.24 during TCLP extraction. If the sample results were increased by a factor of 1.312 to account for the extra dilution, the results for the TCLP metals of interest would still fall below the TCLP limits.

<u>pH Analysis</u>

The pH analysis on HLV-30, sample 96-6864, and HLV-31, sample 96-6865, was performed in the SAL, according to PNL-ALO-225. These results are provided in Attachment 1 along with the TCLP extraction benchsheets. For both analyses, the continuing calibration verification performed at the beginning and end of the analytical batch met quality control limits. Because the pH results for sample 96-6864 and its duplicate were 2.57 and 2.58 respectively, pH analysis was requested for sample HLV-31, (ASR 3452.03). The pH of sample 96-6865 and its duplicate was 7.25 and 7.28, respectively.

<u>Tritium, Total Alpha and GEA Analysis</u>

Sample results for total alpha following PNL-ALO-421, gamma energy analysis following PNL-ALO-450, and tritium following PNL-ALO-418, are in Attachment 2. All quality control requirements were met for the total alpha and tritium analyses of 96-6864, as well as the total alpha of 97-0631. The GEA quality control requirements were also met, except the Cs-134 relative percent difference (RPD) which was 33%. However, calculation of the mean difference for those results gives a value of 0.91, which indicates 95% confidence that the results are equal.

Inductively Coupled Plasma Mass Spectrometry Analysis

The sample results for ICP/MS following PNL-ALO-280, are in Attachment 3. Only the QC for the analytes of interest which include, Cr, Sr, Cd, Ba, and Pb are discussed below. The remaining analytes and their QC are reported for information only.

Analysis of Fused Filtered Solid/97-0631:

The fusion of the filtered solid, 97-0631, included a sample, process blank, and standard reference material (SRM) 2710. A duplicate was not prepared due to the small amount of sample available. All quality control requirements were met for chromium and barium, and the post spike recoveries were all acceptable, except for cadmium, which was 139%. The high recovery indicates a potential matrix interference, and as a result, the sample results may be biased high. For the process blank, lead and strontium were found at concentrations greater than 5% of that found in the sample. In addition, all CCV's recovered within 90%-110%, except one Cd CCV (121%) and one Pb CCV (120.3%). In the SRM 2710, the Sr recovery (129%) is biased high and Pb recovery (63%) is biased low. However, the Sr concentration in this sample is low, or approximately 2.5 times the blank. In addition, the Pb concentration for this SRM is approximately twice that found in 97-0631, and Pb concentrations at that level can be difficult to solubilize. Because the SRM used does not match the sample matrix, no bias is expected for these analytes.

Analysis of Digested Rinse/96-6864:

The digestion of the HLV-30 tank rinse, 96-6864, included the sample, duplicate, process blank, matrix spike and blank spike. The matrix spike recoveries were within acceptable limits of 100 ± 25%, and the blank spike recoveries were within acceptable recoveries of 100 ± 20%. A post spike was also analyzed, because Sr was not included in the spiking solution, and all recoveries were acceptable. The process blank contained Pb at concentrations greater than 5% of that found in the sample, and the RPD's were within acceptable limits of less than 20%, except Cr, which had an RPD of 33%. Finally, all CCV's recovered within 90%-110%, except one Ba CCV (87.6%), and one Pb CCV (81.1%).

Analysis of Extracted Samples/97-0832 through 97-0837:

The TCLP extraction of the resins, 97-0832 through 97-0837, included the six samples, an extraction blank, process blank, blank spike, matrix spike and one duplicate. A post spike of 97-0837 was also analyzed, because Sr was not included in the spiking solution. The matrix and post spike recoveries were within acceptable limits of 100 ± 25%. The blank spike recoveries were also within acceptable limits of 100 ± 20%, except Cd, which had a slightly low recovery of 79%.

The concentrations of the primary analytes were low in these samples, and high RPD's for Ba (42%) and Pb (71%) were found for 97-0832 sample and duplicate. The high Ba RPD is the result of the low concentrations found in these preparations. However, the Pb in these samples is near the level found in the process and extraction blanks, and may be the result of contaimination. These blanks also contained Sr, at concentrations greater than 5% of that found in the samples. All CCV's recovered within 90%-110%, except one Ba CCV (87.6%), and one Pb CCV (81.1%). However, even if the results are increased by a factor of 20% to account for the low bias in the CCV discussed above, none of the primary analyte concentrations would fall above the TCLP limit.

Concurrence Kmlahl-Kuzin

Attachment 1

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: GARY SEVIGNY

WP Number: K37308

TI#/ASR: ASR 3452

Procedure: BENCH INSTRUCTION

96-06864 HLV-30 FILTRATION

SAMPLE IDENTIFICATION #1 #2

SNAP CAP VIAL LID TARE WEIGHT (GRAMS): 3.5903 3.5717

FILTER PAPER + SNAP CAP VIAL TARE WEIGHT (GRAMS): #1 3.6115 #2 3.5963

SNAP CAP VIAL LID + FILTER PAPER + DRIED SOLIDS WEIGHT (GRAMS): 3.6276 3.6277

WEIGHT OF DRIED SOLIDS (GRAMS): 0.0161 0.0514

Filtrate

HLV-30 VIAL + CAP GROSS WEIGHT (GRAMS): 17.2595

HLV-30 VIAL + CAP TARE WEIGHT (GRAMS): 32.8084

WEIGHT OF ORIGINAL SAMPLE (GRAMS): 15.5459

PERCENT SOLIDS (BY WEIGHT) = [WEIGHT OF DRIED SOLIDS / WEIGHT OF ORIGINAL SAMPLE] X 100

= 0.3 %

SAMPLE was filtered with Millipore Type BS 2.0µm 25MM filter paper. Dry solids vial Tare = 8.5965

Gross = 8.6420

M&TE: X Cell 2 (360-06-01-016) Mettler AE160 Balance Other _____

___ Cell 5 (360-06-01-039) Mettler AT400 Balance

___ Bench (360-06-01-040) Denver A160 Balance

___ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 10/17/96 Reviewer: [signature] Date: 10/17/96

PNL-ALO-128

Nitric and Hydrochloric Acid Extraction of High-level Radioactive Liquids and TCLP Leachates

Client: G. Sevigny
QA plan: MCS-033
Work Auth. Doc (WAD): ASR 3452.02
Impact level: II
Work Package/Project: KG1902
Balance M&TE:
Tank/Core/Other ID: High Level Vault Tank
Prep. lab (SAL or SRPL): SAL
Additional Information: HIGH LEVEL VAULT TANK RINSE

	ALO #	Client ID	Sample weight (g)	Spike volume (ml)	Final extract volume (ml)	Process Factor			
1	96-06864-PB	PROCESS BLANK			25				
2	96-06864-BS	BLANK SPIKE	0.5791	.5013	25	48.16	SPIKE WT. =	.5791	
3	96-06864	HLV-30	0.9853		25	25.37			
4	96-06864-DUP	HLV-30	0.9823		25	25.45			
5	96-06864-MS	HLV-30	1.0706	.5013	25	23.35	SPIKE WT. =	.5907	
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									

Analyst comments (e.g. identification number for spikes, sample preparation problems encountered, unusual sample properties): SAMPLES FILTERED: SPIKE YES [ ] NO [X]

9 ml Calib Div @ 23°C

Pilot study: 9.0218, 9.0253, 9.0317, 9.0198, 9.0200; $\bar{x}$ = 9.0262 g/ml; s = .0053; RSD = .06% (wt); Dil = 9.0448 ml

Pilot study: .0959, .0987, .0957, .0956, .0991; $\bar{x}$ = .0958; s = .0002; RSD = .2%; Dil = .0990

.4993, .5065, .5002, .5005, .4997; $\bar{x}$ = .5001; s = .0006; RSD = .12%; Dil = .5013 ml

Analyst/Date: [signature] 2/4/97 Reviewer/Date: [signature] 2/5/97

rev.2.0 3-9-95 JMR

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3452.02 PROJECT NO.: 27223 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 1/30/97 PREP TYPE: ACID DIGEST (PNL-ALO-128)

ANALYST: [signature] DATE: 2/7/97 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 2/8/97 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: G. SEVIGNY CORE ID: NA TANK ID: HIGH LEVEL VAULT

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	MISC
K61902	96-06864-PB	PROCESS BLANK	ICP/MS*			25			92.4X	2% HNO3	9.6496	
	96-06864-BS	BLANK SPIKE		SPIKE 0.5191			Pb/Cr 9/09/97	0.5013			.0990	
	96-06864	HLV-30		0.9553							.5013	
	96-06864-DUP	HLV-30		0.9523								
	96-06864-MS	HLV-30		1.0706				0.5013				
								SPIKE WT 0.5307				

* Sr,Pb,Cr,Cd,Ba is of interest.

.0990 → 9.6496 / 66 = 92.4X

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3452.02 PROJECT NO.: 27223 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 1/30/97 PREP TYPE: ACID DIGEST (PNL-ALO-128)

ANALYST: [signature] DATE: 2/7/97 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 3/8/97 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: G. SEVIGNY CORE ID: NA TANK ID: HIGH LEVEL VAULT

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	MISC
K61902	96-06864-PB	PROCESS BLANK	GEA,TOTAL ALPHA*			25			92.4x	2% HNO3	CG 9.0490	[illegible]
	96-06864	HLV-30		0.9853		↓			↓		.0990	
	96-06864-DUP	HLV-30		0.9823		↓			↓		.5013	

* TOTAL ALPHA ONLY IF pH <9

.0990 → 9.0490 = 92.4x
.0990

PAGE 1 OF 1

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

PNL-ALO-115

Solubilization of Metals from Solids Using a KOH-KNO3 Fusion

Client name: GARY SEVIGNY
Work Auth. Doc (WAD): ASR 3569
Tank/Core/Project: 24896
Special instructions

Work package number: K37308
Project number: 24896
PNL QA plan: MCS-033
PNL impact level: II
Prep. lab (SAL/SRPL/other): SAL
Preparation batch number:

	ACL Sample ID	ACL order number or Client sample ID	Crucible Identifier	Crucible weight (g)	Crucible + sample weight (g)	Sample weight (g)	Spike added Vol. (ml)	Spike added Weight. (g)	Final solution Volume (ml)	Process Factor (1)
1	97-00631-PB-Ni	PROCESS BLANK	1						100	
2	97-00631-Ni	HLV-30 FILTERED SOLIDS	8	39.0709	39.1124	0.0415				2407.64
3	SRM 2710-Ni	LCS/HLV-30/Ni	9	32.3941	32.4755	0.0814				1228.57
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										

Analyst's sample preparation comments: DOSE RATE:

Spike source:
PNL spike ID number:
Anal. balance MATE: 300.00 [illegible]

HCl volume added (ml): 2
Solution heated (yes/no): yes
Sample filtered (yes/no): no

(1) Process factor = Final volume (ml) / [Crucible & sample weight (g) - Crucible weight (g)]

Other sample preparation worksheets may be substituted at the discretion of the Cognizant Scientist. Use one worksheet per client.

Analyst/Date: [signature] 12/3/96 Reviewer/Date: [signature] 12/3/96

Rev. 2.0 7-28-95 [illegible]

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3569 PROJECT NO.: 24896 WBS NO.: _____ SAMPLE TYPE: SOLIDS

ISSUED BY: RT STEELE DATE: 11/14/96 PREP TYPE: Ni/KOH FUSION

ANALYST: [signature] DATE: 12-3-96 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 12/3/96 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: G. SEVIGNY CORE ID: N/A TANK ID: N/A

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	MISC
K37308	97-00631-PB-Ni	PROCESS BLANK	ICP/MS			100						
	97-00631-Ni	HLV-30 FILTERED SOLIDS		.0415								
	SRM 2710-Ni	LCS/HLV-30/Ni		.0814								

PAGE 1 OF 1

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3569 PROJECT NO.: 24896 WBS NO.: _____ SAMPLE TYPE: SOLIDS

ISSUED BY: RT STEELE DATE: 11/14/96 PREP TYPE: Ni/KOH FUSION

ANALYST: [signature] DATE: 12-3-96 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 12/3/96 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: G. SEVIGNY CORE ID: N/A TANK ID: N/A

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	MISC
K37308	97-00631-PB-Ni	PROCESS BLANK	GEA			100						
	97-00631-Ni	HLV-30 FILTERED SOLIDS		.0415		↓						

Shielded Analytical Laboratory
Bench Sheet

Client: GARY SEVIGNY

WP Number: K61902

TI#/ASR: ASR 3593

Procedure: PNL-ALO-110

97-00832 THRU 97-00837 TCLP EXTRACTION GENERAL NOTES

SAMPLE IDENTIFICATION

Original Ph check on 1x02

15.7140
13.2680
0.5060 g. + 10 ml. DIW.

PH started out at 9.4
after HCL addition it was 2.4 ∴ extraction fluid #1 will
be used for the extraction.

M&TE: ✓ Cell 2 (360-06-01-016) Mettler AE160 Balance Other _____

____ Cell 5 (360-06-01-039) Mettler AT400 Balance

____ Bench (360-06-01-040) Denver A160 Balance

____ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 1/29/97

Reviewer: [signature] Date: 1/30/97

pH ANALYSIS
(325 SHIELDED ANALYTICAL LABORATORY)

CLIENT: GARY SEVIGNY WORK PACKAGE: K61902 ASR/ARF/LOI/TI: ASR 3593

QA PLAN: MCS-033 IMPACT LEVEL: II

97-00833HLV IX-02—EXTRACTION FLUID DETERMINATION
SAMPLE IDENTIFICATION

ACL NUMBER	SAMPLE IDENTIFICATION	OBSERVED pH
	CONTROL BUFFER 7	7.00 6.99
97-00833	HLV-IX-02 UNACIDIFIED	9.47
97-00833	HLV-IX-02 UNACIDIFIED	9.48
97-00833	HLV-IX-02 ACIDIFIED	2.43
97-00833	HLV-IX-02 ACIDIFIED	2.45
	CONTROL BUFFER	7.01 7.02

CALIBRATION CHECK POINTS: 4 (Calib) / 7 (Calib) / 10 (Control) 7 PROCEDURE: PNL-ALO-225

BUFFER LOT NUMBER: 953624-24 / 961196-24 / 965222-24 950355-97 M&TE:

BUFFER EXPERIATION DATE: 5/97 / 3/98 / 10/98. 3/97 Corning pH Meter S/N 0029

Analyst: [signature] Date: 1/29/97 Reviewer: [signature] Date: 1/30/97

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: GARY SEVIGNY

WP Number: K61902

TI#/ASR: ASR 3593

Procedure: PNL-ALO-110

97-00832 THRU 97-00837 TCLP EXTRACTION GENERAL NOTES

SAMPLE IDENTIFICATION

Weighed up 5 grams of each sample except 1X-5 which only had about 4 grams total
added 100 mls. of Extract #1 determined by pH check. These mixed for 18 hrs. started at 4:30 1/29/97 and stopped at 10:30 1/30/97
Filtered and stored in 125 ml poly bottles. Tests set about 6 mos. for Pb analysis

M&TE: ____ Cell 2 (360-06-01-016) Mettler AE160 Balance Other ____

____ Cell 5 (360-06-01-039) Mettler AT400 Balance

____ Bench (360-06-01-040) Denver A160 Balance

____ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 1/31/97

Reviewer: [signature] Date: 2/3/97

Shielded Analytical Laboratory
TCLP EXTRACTION

Project Id: 27223

WP Number: K61902

TI/ASR Number: ASR 3593

Sample Ident.	Sample Gross Wt (g)	Sample Tare Wt (g)	Sample Net Wt (g)	HOAc Gross Wt (g)	HOAc Tare Wt (g)	HOAc Net Wt (g)	Spike Volume
97-00832-EB EXTRACTION BLANK				130.2510	30.7502	99.5008	
97-00832 HLV-IX-01	37.2606	32.2047	5.0559	132.7290	31.9861	100.7429	
97-00833 HLV-IX-02	35.6546	30.5486	5.1060	134.2061	35.4562	98.7199	
97-00834 HLV-IX-03	37.6476	32.5932	5.0544	131.8722	31.5873	100.2849	
97-00835 HLV-IX-5	34.3989	30.6578	3.7411	133.0193	34.8721	98.1472	
97-00836 HLV-IX-07	35.6968	30.4338	5.2630	135.1927	34.9823	100.2104	
97-00837 HLV-IX-08	37.3265	32.2129	5.1136	130.9632	30.5031	100.4601	

Spike Id: _____

used all sample.

SCALE: ✓ Cell 2 (360-06-01-016) Mettler AE160 Balance Other _____

___ Cell 5 (360-06-01-039) Mettler AT400 Balance

___ Bench (360-06-01-040) Denver A160 Balance

___ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 1/30/97

Reviewer: [signature] Date: 2/3/97

Analytical Chemistry Laboratory
Shielded Analytical Laboratory

pH ANALYSIS
(325 SHIELDED ANALYTICAL LABORATORY)

CLIENT: GARY SEVIGNY WORK PACKAGE: K61902 ASR/ARF/LOI/TI: ASR 3593

QA PLAN: MCS-033 IMPACT LEVEL: II

HIGH LEVEL VAULT RESIN TCLP POST EXTRACTION FLUID
SAMPLE IDENTIFICATION

ACL NUMBER	SAMPLE IDENTIFICATION	OBSERVED pH
	CONTROL BUFFER 7	6.99
97-00832-EB	EXTRACTION BLANK	11.79
97-00832-EB	EXTRACTION BLANK	11.82
97-00832	HLV-IX-01	5.14
97-00832	HLV-IX-01	5.16
97-00833	HLV-IX-02	5.16
97-00833	HLV-IX-02	5.18
97-00834	HLV-IX-03	5.05
97-00834	HLV-IX-03	5.09
97-00835	HLV-IX-5	5.05
97-00835	HLV-IX-5	5.08

CALIBRATION CHECK POINTS: 4 (Calib) / 7 (Calib) / 7 (Control) PROCEDURE: PNL-ALO-225

BUFFER LOT NUMBER: 953624-24 / 961196-24 / 950355-24 M&TE:

BUFFER EXPERIATION DATE: 5/97 / 3/98 / 2/97 Corning pH Meter S/N 0629

Analyst: [signature] Date: 1/31/97 Reviewer: [signature] Date: 2/3/97

pH ANALYSIS
(325 SHIELDED ANALYTICAL LABORATORY)

CLIENT: GARY SEVIGNY WORK PACKAGE: K61902 ASR/ARF/LOI/TI: ASR 3593

QA PLAN: MCS-033 IMPACT LEVEL: II

HIGH LEVEL VAULT RESIN TCLP POST EXTRACTION FLUID
SAMPLE IDENTIFICATION

ACL NUMBER	SAMPLE IDENTIFICATION	OBSERVED pH
97-00836	HLV-IX-07	5.24
97-00836	HLV-IX-07	5.24
97-00837	HLV-08-08	5.13
97-00837	HLV-IX-08	5.13
~~97-0083~~ -DUP 96-06864	~~HLV-IX-~~ HLV-30	2.57
~~97-0083~~ -DUP 96-06864	~~HLV-IX-~~ HLV-30-DUP	2.55
	~~CONTROL-BUFFER~~ Control Buffer	7.00

CALIBRATION CHECK POINTS: (Calib) / (Calib) / (Control) PROCEDURE: PNL-ALO-225

BUFFER LOT NUMBER: / / M&TE:

BUFFER EXPERIATION DATE: / / Corning pH Meter S/N 0629

Analyst: [signature] Date: 1/31/97 Reviewer: [signature] Date: 2/3/97

PNL-ALO-128

Nitric and Hydrochloric Acid Extraction of High-level Radioactive Liquids and TCLP Leachates

Client: G. Sevigny — QA plan: MCS-033

Work Auth. Doc (WAD): ASR 3593 — Impact level: II

Work Package/Project: K61902 / 27223 — Balance M&TE: 3160-QA-01-016

Tank/Core/Other ID: High Level Vault Tank — Prep. lab (SAL or SRPL): SAL

Additional Information: TCLP LEACH OF HLV RESIN SAMPLES

	ALO #	Client ID	Sample weight (g)	Spike volume (ml)	Final extract volume (ml)	Process Factor			
1	97-00832-EB	EXTRACT BLANK	19.4531		25	1.29			
2	97-00832-PB	PROCESS BLANK				~~1.27~~ 2/7/97			
3	97-00832-BS	BLANK SPIKE	0.5211	.5013					
4	97-00832	HLV IX-01	20.5624			1.22.			
5	97-00832-DUP	HLV IX-01	19.1735			1.30			
6	97-00832-MS ✓	HVL IX-01	19.4387	.5013		1.29.	SPIKE wt = .4856		
7	97-00833	HLV IX-02	20.0078			1.25			
8	97-00834	HLV IX-03	20.5302			1.22.			
9	97-00835	HLV IX-5	19.9905			1.25			
10	97-00836	HLV IX-07	19.5071			1.28			
11	97-00837	HLV IX-08	20.3549.			1.23.			
12									
13									
14									
15									
16									

Analyst comments (e.g. identification number for spikes, sample preparation problems encountered, unusual sample properties): SAMPLES FILTERED: YES [ ] NO [X]

For Pipett calib. see Bench sheet for HLV Tank Rinse ASR 3452.02

Spike = A 966321-TCLP

Analyst/Date: [signature] 2/7/97 Reviewer/Date: [signature] 2/7/97

rev.2.0 3-9-95 JMR

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3593 PROJECT NO.: 27223 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 1/31/97 PREP TYPE: ACID DIGEST (PNL-ALO-128)

ANALYST: [signature] DATE: 2/7/97 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 2/7/97 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: G. SEVIGNY CORE ID: N/A TANK ID: HIGH LEVEL VAULT TANK

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	MISC
K61902	97-00832-EB	EXTRACTION BLANK	ICP/MS*	19.4591		25			92.4X	2% HNO3	0.0990 cc	
	97-00832-PB	PROCESS BLANK									0.0990	
	97-00832-BS	BLANK SPIKE					96.23/-7217	0.5013			0.5013	
	97-00832	HLV IX-01		20.5624								
	97-00832-DUP	HLV IX-01		19.1735								
	97-00832-MS	HLV IX-01		19.4357				0.5013				
	97-00833	HLV IX-02		20.0078								
	97-00834	HLV IX-03		20.5302								
	97-00835	HLV IX-5		19.9905								
	97-00836	HLV IX-07		19.5071								
	97-00837	HLV IX-08		20.3549								

* Cd, Cr, Ba, Pb OF INTEREST

D.F. Calc: .0990 → 9.0990 (Volumetric) / .0990 = 92.4X

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3593 PROJECT NO.: 27223 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 1/31/97 PREP TYPE: ACID DIGEST (PNL-ALO-128)

ANALYST: [signature] DATE: 2/7/97 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 2/7/97 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: G. SEVIGNY CORE ID: N/A TANK ID: HIGH LEVEL VAULT TANK

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	MISC
K61902	97-00032-EB	EXTRACTION BLANK	ICP/MS*	19.4531		25			92.4X	2% HNO3	0.0990 GC	[illegible]
	97-00032-PB	PROCESS BLANK									0.0990	
	97-00032-BS	BLANK SPIKE					1 ppm 2221-7779	0.5013			0.5013	
	97-00032	HLV IX-01		20.5624								
	97-00032-DUP	HLV IX-01		19.1735								
	97-00032-MS	HLV IX-01		19.4357				0.5013				
	97-00033	HLV IX-02		20.0078								
	97-00034	HLV IX-03		20.5302								
	97-00035	HLV IX-5		19.9905								
	97-00036	HLV IX-07		19.5071								
	97-00037	HLV IX-08		20.3542								

* Cd; Cr, Ba, Pb OF INTEREST

Dil. Fact: .0990 → 9.0440 (GC 02/11/97) / .0990 = 92.4X

Analytical Chemistry Laboratory
Shielded Analytical Laboratory

pH ANALYSIS
(325 SHIELDED ANALYTICAL LABORATORY)

CLIENT: GARY SEVIGNY WORK PACKAGE: K61902 ASR/ARF/LOI/TI: ASR 3452.03

QA PLAN: MCS-033 IMPACT LEVEL: II

96-06865 HLV-31
SAMPLE IDENTIFICATION

ACL NUMBER	SAMPLE IDENTIFICATION	OBSERVED pH
	CONTROL 7	7.00 7.00
96-06865	HLV-31	7.35
96-06865	HLV-31	7.28
	CONTROL	7.00 6.97

CALIBRATION CHECK POINTS: 4 (Calib) / 7 (Calib) / 7 (Control) PROCEDURE: PNL-ALO-225

BUFFER LOT NUMBER: 953624-24 / 956355-24 / 964924-24 M&TE:

BUFFER EXPERIATION DATE: 5-97 / 2-97 / 5-98 Corning pH Meter S/N 0629

Analyst: David [illegible] Date: 2/27/97 Reviewer: [illegible] Date: 2/27/97

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
Shielded Analytical Laboratory

Shielded Analytical Laboratory
Bench Sheet

Client: G. SEVIGNY

WP Number: K61902

TI#/ASR: ASR 3452.02

Procedure: BENCH INSTRUCTION

96-6864 HLV-30 TRITIUM SUBALIQUOT

SAMPLE IDENTIFICATION

10 ml Pipet used @ 22°C		.1 ml Pipet used @ 22°C	
10.0447	$\bar{x}$ = 10.0439 g.	.0986	$\bar{x}$ = .0985
10.0409		.0983	
10.0476	s = .0032	.0986	s = .0002
10.0402		.0984	
10.0466	RSD = .03%	.0988	RSD = .2%
Wtd = 10.0663 ml.		Wtd = .0987 ml.	

$$\frac{.0987 \rightarrow 10.0663}{.0987} = 102.99\times$$

Made a 102.99x Dilution using Deep Well Water

M&TE: ✓ Cell 2 (360-06-01-016) Mettler AE160 Balance Other _____

___ Cell 5 (360-06-01-039) Mettler AT400 Balance

✓ Bench (360-06-01-040) Denver A160 Balance

___ Cell 5 (360-06-01-045) Toledo 3026 Balance

Analyst: [signature] Date: 2/11/97

Reviewer: [signature] Date: 2/11/97

Battelle Pacific Northwest Laboratories
Analytical Chemistry Laboratory
325 Shielded Analytical Laboratory

SAMPLE PREP SHEET
(325 SHIELDED ANALYTICAL LABORATORY)

TI/ARF NO.: ASR 3452.02 PROJECT NO.: 27223 WBS NO.: _____ SAMPLE TYPE: LIQUID

ISSUED BY: RT STEELE DATE: 2/04/97 PREP TYPE: NONE

ANALYST: [signature] DATE: 2/11/97 CONTROLLING PROCEDURE: PNL-ALO-010

REVIEW: [signature] DATE: 2/11/97 QA PLAN: MCS-033 IMPACT LEVEL: II

CLIENT: GARY SEVIGNY CORE ID: N/A TANK ID: _____

WORK PACKAGE NUMBER	ALO NUMBER	SAMPLE IDENTIFICATION	ANALYTE OR ANALYSIS	SAMPLE WT	WATER WT (g)	TOTAL VOL (mL)	SPIKE ID	SPIKE VOL (mL)	DILUTION FACTOR	DILUTION MATRIX	PIPET CALIB (mL)	LIMS ORDER NUMBER
K61902	96-06864-DB	DILUENT BLANK	H-3						None	Deep well water	10.0663	
	96-06864	HLV-30							102.99X	↓	.0987	
	96-06864-DUP	HLV-30 DUP							↓	↓		

D.F.: .0987 → 10.0663 / .0987 = 102.99X

Attachment 2

Battelle Pacific Northwest Laboratory
Analytical Chemistry Laboratory
Radioanalytical Group - 325 Bldg.

96-6864
2/28/97

Client : G. Sevigny
Wp#: K61902

Cognizant Scientist: [signature] Date : 2/28/97

Concur : [signature] Date : 2/28/97

Measured Activities (uCi/g)

ALO ID Client ID		Total Alpha Error +/-	Tritium Error +/-	Cs-134 Error +/-	Cs-137 Error +/-	Eu-154 Error +/-	Am-241 Error +/-
96-6864-PB Process Blank		< 5E-5	<4.E-3	< 2E-4	8.36E-4 9%	< 4E-4	< 6E-4
96-6864 HLV-30		1.10E-1 10%	<4.E-3	6.67E-1 13%	1.05E+3 2%	5.49E+0 3%	6.22E+0 14%
96-6864-DUP HLV-30		1.06E-1 10%	<4.E-3	4.78E-1 12%	1.01E+3 2%	5.44E+0 3%	6.15E+0 14%
	RPD	4%		33%	4%	1%	1%
Standard		98%	98%				
Matrix Spike		106%	98%				
Blank			<4.E-3				

Battelle Pacific Northwest Laboratory
Analytical Chemistry Laboratory
Radioanalytical Group - 325 Bldg.

97-631
3/4/97

Client : G. Sevigny
Wp#: K61902

Cognizant Scientist: [signature] Date : 3/4/97

Concur : T Trang-le Date : 3/4/97

Measured Activities (uCi/g)

ALO ID Client ID	Total Alpha Error +/-
97-631-PB Process Blank	<5.E-3
97-631 HLV-30-Filtered Solids	2.92E 2 5%
97-631 Dup HLV-30-Filtered Solids	3.06E 2 5%
Standard	91%
Matrix Spike	92%
Blank	<5.E-3

Attachment 3

Project Number

Battelle
Pacific Northwest Laboratories

Internal Distribution

Date March 6, 1997

To Ofelia Bredt

From Eric Wyse

Subject ICP/MS Analysis of HLV Samples
(ACL #97-00631; 00832 thru 837; 00864)

Pursuant to your request, the 11 resin TCLP leach samples, the 5 tank rinse samples, and the 3 filtered solids digestions (including corresponding QC) that you submitted were analyzed by ICP/MS quantitatively for Cr, Sr, Cd, Ba and Pb. The samples were dissolved by the 325 hot cell staff with a total process dilution factor of ~2500X, and we diluted them an additional 2X-100X for analysis. The concentration results of these primary analytes are displayed on the attached spreadsheet. Other analytes are also reported for information.

The quality control results for the primary analytes of interest were all within acceptance criteria for the resin leaches and the tank rinses. Most of the other analytes in these sample sets were also acceptable; those that are not are highlighted in gray. There were some problems, however, with the QC on the filtered solids preps. The most notable was with the SRM prep. Most of the SRM results were not within acceptance limits. Most of the other QC results were acceptable. Exceptions for the primary analytes of interest included one CCV for Cd and one for Pb. There was also one unacceptable spike sample recovery for Cd, however this can be attributed to the relatively high concentration of Cd found in the sample. QC results for other analytes was varied; sample results for these analytes are reported for information only. Please note the QC results for each analyte when evaluating the data.

If you have any questions regarding this analysis, please give me a call at 376-3074.

ICP/MS Analysis of HLV Filtered Solids

March 5, 1997

Reviewed by: [signature]

Date: 3/6/97 Pages: 1 of 4

Results are reported in µg/g (ppm) of original sample

Sample Number	Client ID	ICP/MS Number	Cr µg/g	Sr µg/g	†Cd µg/g	Ba µg/g	Pb µg/g	†Be µg/g	†Mg µg/g	V µg/g	Mn µg/g
1%HNO3		7303a1	<100	<50	<1	<100	<50	<1	<2	<100	<100
1%HNO3		7303a16	<100	<50	<1	<100	<50	<1	<2	<100	<100
1%HNO3		7303a24	<100	<50	<1	<100	<50	<1	<2	<100	<100
97-00631-PB	Process Blank	7303a25	<100	130±100	<1	250±220	200±150	1.1±0.4	142	<100	<100
97-00631-NI	HLV-30 Filtered Solids	7303a26	1580	1260	120	30700	2150	2.5±0.6	132	2120	2743
97-00631-NI	HLV-30 Filtered Solids	7303a27	2000±300	1300±300	120	34000±6000	2760	3.1±1.3	139	1670	3100±650
97-00631-Ni + spike	HLV-30 Filtered Solids	7303a29&30	10400	4730	158		20400	11.5	2400	11100	7649
Spike Recovery			110%	86%	139%		91%	76%	113%	112%	122%
SRM 2710-NI	LCS/HLV-30/Ni	7303a28		310±60	2014	640	3490	6.24	6760		11000
True Value				240	21.8	707	5530		8530		10100
CCV results are reported in ng/ml (ppb)											
INT-QC-MCVA-1		7228a14			26.4						
True Value					25.0						
INT-ICP1.1A		7228a21							113		
INT-ICP1.1A		7228a51							115		
True Value									125		
INT-ICP1.1B		7303a21									
INT-ICP1.1B		7303a36									
True Value											
CLMS-1 10ppb		7228a25									
CLMS-1 10ppb		7228a57									
INT-QC-MCVB-3		7303a17									
INT-QC-MCVB-3		7303a32									
True Value											
1643d (10x)		7303a18		302		537			7220		
1643d (10x)		7303a33		285		525			7340		
1643d		7303a19	18.1	275	7.85	540	22.3	11.3		33.1	37.4
1643d		7303a34	19.5	285		533	17.9			36.5	39.1
True Value			18.5	295	6.47	506	18.2	12.5	7990	35.1	37.7
INT-ICP1.5/Cs		7303a20									
INT-ICP1.5/Cs		7303a35									
True Value											
INT-QC-MCVB-2		7303a22									
INT-QC-MCVB-2		7303a37									
True Value											

†Results are from procedure 7228a (2x dilution)

*Result is from procedure 7303a (50x dilution)

HLV 3/3/97

J Brennan 3/6/97

ICP/MS Analysis of HLV Filtered Solids

March 5, 1997

DATA REVIEW

Reviewed by: [signature]

Date: 3/6/97 Pages: 2 of 4

Results are reported in µg/g (ppm) of original sample

Sample Number	Client ID	ICP/MS Number	†Co µg/g	†Cu µg/g	†Zn µg/g	†As µg/g	†Rb µg/g	Zr µg/g	Nb µg/g	Mo µg/g	†Rh µg/g
1%HNO3		7303a1	<1	<2	<2	<1	<1	<50	<50	<50	<1
1%HNO3		7303a16	<1	<2	<2	<1	<1	<50	<50	<50	<1
1%HNO3		7303a24	<1	<2	<2	<1	<1	<50	<50	<50	<1
97-00631-PB	Process Blank	7303a25	5.3±1.0	34.7	77.6	34±5	272	170±70	58±15	190±40	<1
97-00631-Ni	HLV-30 Filtered Solids	7303a26	189	223	200±20	315	766	44600	10459	59600	387
97-00631-Ni	HLV-30 Filtered Solids	7303a27	223	366	256	404	828	54000±10000	12000±2000	65000±14000	418
97-00631-Ni + spike	HLV-30 Filtered Solids	7303a29&30	340±40	375	360±60	577	805				484
Spike Recovery			94%	95%	100%	95%	67%				140%
SRM 2710-Ni	LCS/HLV-30/Ni	7303a28		*2570	*6400					*51.1	
True Value				2950	6952					19.0	
INT-QC-MCVA-1		7228a14	50.0	49.8	50.0	119					
True Value			50.0	50.0	50.0	125					
INT-ICP1.1A		7228a21	10.3	10.3		8.95					
INT-ICP1.1A		7228a51	11.6	11.3		11±2					
True Value			10.0	10.0		10.0					
INT-ICP1.1B		7303a21						20.8		8.33	
INT-ICP1.1B		7303a36						24.0		9.51	
True Value											
CLMS-1 10ppb		7228a25									
CLMS-1 10ppb		7228a57									
INT-QC-MCVB-3		7303a17							3.30		
INT-QC-MCVB-3		7303a32							6.0±2.4		
True Value									2.00		
1643d (10x)		7303a18									
1643d (10x)		7303a33									
1643d		7303a19								99.8	
1643d		7303a34	26.8	55.5	68.6	50.9	9.37			97.4	
True Value			25.0	58.1	72.5	56.0	13.0			113	
INT-ICP1.5/Cs		7303a20									
INT-ICP1.5/Cs		7303a35									
True Value											
INT-QC-MCVB-2		7303a22									1.87
INT-QC-MCVB-2		7303a37									1.97
True Value											2.00

†Results are from procedure 7228a (2x dilution)
*Result is from procedure 7303a (50x dilution)
•Results are from procedure 7228a (4x dilution)

HLV 3/3/97 J P Grannon 3/6/97

ICP/MS Analysis of HLV Filtered Solids

March 5, 1997

Reviewed by: [signature]

Date: 3/6/97 Pages: 3 of 4

Results are reported in µg/g (ppm) of original sample

Sample Number	Client ID	ICP/MS Number	Pd µg/g	†Sn µg/g	†Sb µg/g	Cs µg/g	†La µg/g	†Ce µg/g	†Pr µg/g	†Nd µg/g	†Eu µg/g	†Gd µg/g
1%HNO3		7303a1	<50	<2	<1	<100	<1	<1	<1	<1	<1	<1
1%HNO3		7303a16	<50	<2	<1	394	<1	<1	<1	<1	<1	<1
1%HNO3		7303a24	<50	<2	<1	200	<1	<1	<1	<1	<1	<1
97-00631-PB	Process Blank	7303a25	<50	4±1	<1	390±150	<1	2±2	<1	<1	<1	<1
97-00631-Ni	HLV-30 Filtered Solids	7303a26	38100	708	109	3170	55.9	43.5	19±2	58±9	6±4	2±2
97-00631-Ni	HLV-30 Filtered Solids	7303a27	42000±9000	762	116	3000±400	66.7	43.5	22±8	50±5	9±1	<1
97-00631-Ni + spike	HLV-30 Filtered Solids	7303a29&30		797	260	194000	88.8	77.3	49.4	74.1	39.4	42±8
Spike Recovery				129%	88%	79%	80%	82%	74%	38%	82%	98%
SRM 2710-Ni	LCS/HLV-30/Ni	7303a28			17.4	138	16±4	31.2		17.3		
True Value					38.4	107	34.0	57.0		23.0		
INT-OC-MCVA-1		7228a14										
True Value												
INT-ICP1.1A		7228a21										
INT-ICP1.1A		7228a51										
True Value												
INT-ICP1.1B		7303a21										
INT-ICP1.1B		7303a36										
True Value												
CLMS-1 10ppb		7228a25					8.93	8.90	10.8	9.20	11.0	10±2
CLMS-1 10ppb		7228a57					9.59	9.84	10.9	8.53	10.3	8.85
INT-OC-MCVB-3		7303a17		3.8±0.4								
INT-OC-MCVB-3		7303a32		4.0±0.4								
True Value				4.00								
1643d (10x)		7303a18										
1643d (10x)		7303a33										
1643d		7303a19										
1643d		7303a34			47.1							
True Value					54.0							
INT-ICP1.5/Cs		7303a20				47.8						
INT-ICP1.5/Cs		7303a35				47.4						
True Value						50.0						
INT-OC-MCVB-2		7303a22	1.9±0.5									
INT-OC-MCVB-2		7303a37	2.26									
True Value			2.00									

†Results are from procedure 7228a (2x dilution)

HLV 3/3/97 3/6/97

ICP/MS Analysis of HLV Filtered Solids

March 5, 1997

DATA REVIEW

Reviewed by: [signature]

Date: 3/6/97 Pages: 4 of 4

Results are reported in µg/g (ppm) of original sample

Sample Number	Client ID	ICP/MS Number	†Tb µg/g	†Dy µg/g	†Ho µg/g	†Er µg/g	†Tm µg/g	†Yb µg/g	U µg/g
1%HNO3		7303a1	<1	<1	<1	<1	<1	<1	<50
1%HNO3		7303a16	<1	<1	<1	<1	<1	<1	<50
1%HNO3		7303a24	<1	<1	<1	<1	<1	<1	<50
97-00631-PB	Process Blank	7303a25	<1	<1	<1	<1	<1	<1	<50
97-00631-NI	HLV-30 Filtered Solids	7303a26	<1	1±1	<1	<1	<1	<1	680±380
97-00631-NI	HLV-30 Filtered Solids	7303a27	<1	<1	<1	<1	<1	<1	1060
97-00631-NI + spike	HLV-30 Filtered Solids	7303a29&30	32.8	26±12	31±5	37±7	34.9	40±9	107000
Spike Recovery			79%	61%	75%	89%	84%	96%	110%
SRM 2710-Ni	LCS/HLV-30/Ni	7303a28		3±3					56±6
True Value				5.4					25.0
INT-OC-MCVA-1		7228a14							
True Value									
INT-ICP1.1A		7228a21							
INT-ICP1.1A		7228a51							
True Value									
INT-ICP1.1B		7303a21							
INT-ICP1.1B		7303a36							
True Value									
CLMS-1 10ppb		7228a25	7.73	10.5	10.47	9.5±1.9	9.16	11.3	
CLMS-1 10ppb		7228a57	8.9±1.5	10.2	10.0±1.0	11±4	9.45	10.5	
INT-OC-MCVB-3		7303a17							
INT-OC-MCVB-3		7303a32							
True Value									
1643d (10x)		7303a18							
1643d (10x)		7303a33							
1643d		7303a19							
1643d		7303a34							
True Value									
INT-ICP1.5/Cs		7303a20							48.9
INT-ICP1.5/Cs		7303a35							49.8
True Value									50.0
INT-OC-MCVB-2		7303a22							
INT-OC-MCVB-2		7303a37							
True Value									

†Results are from procedure 7228a (2x dilution)

•Results are from procedure 7228a (4x dilution)

HLV 3/3/97

ICP/MS Analysis of HLV Tank Rinse Samples

March 5, 1997

3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	Cr µg/g	Sr µg/g	Cd µg/g	Ba µg/g	Pb µg/g	Be µg/g	Mg µg/g	V µg/g	Mn µg/g	Co µg/g	Ni µg/g
1%HNO3		7228a1	<2	<1	<1	<1	<1	<1	3±1	<2	<2	<1	2.4
1%HNO3		7227a26	<2	<1	<1	<1	7±5	<1	3.9	9.3	<2	<1	<2
1%HNO3		7228a49	<2	<1	<1	<1	<1	1.4	3.4	15.3	<2	<1	<2
96-06864-PB	Process Blank	7228a27	<2	2.4	<1	<1	32±21	6.5	42.5	24.5	4.8	<1	3.0
96-06864-BS	Blank Spike	7228a42	255		52.1	4470	260						260±40
Spike Recovery			105%		106%	93%	95%						107%
96-06864	HLV-30	7228a38	10±3	52±11	<1	1.2	8.7	4.4	46±6	48±10	8.7	<1	9±4
96-06864 Duplicate	HLV-30	7228a40	14±3	51±7	<1	<1	10±2	6±2	47.9	49±16	8.2	<1	7±4
96-06864-DUP	HLV-30	7228a39	10±3	47±8	<1	<1	5.5	4±0.4	40.3	41±8	6.4	<1	7±3
96-06864-MS	HLV-30	7228a44	133		25±6	2210	120						140±20
Spike Recovery			105%		103%	95%	95%						112%
96-06864-DUP+spike	HLV-30	7228a47&48	36.6	122	87.7	77.0	401	20.4	1020	207	90.8	188	180
Spike Recovery			94%	96%	111%	97%	98%	107%	106%	106%	108%	119%	110%

DATA REVIEW

Reviewed by: [signature]

Date: 3/5/97 Pages: 1 of 6

HLV 3/3/97

ICP/MS Analysis of HLV Tank Rinse Samples

March 5, 1997

J. Brown 3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	Cr ng/ml	Sr ng/ml	Cd ng/ml	Ba ng/ml	Pb ng/ml	Be ng/ml	Mg ng/ml	V ng/ml	Mn ng/ml	Co ng/ml	Ni ng/ml
INT-QC-MCVA-1		7220a14	46.7	25.0	27.6	23.1	129			48.5	24.3	50.0	48.6
True Value			50.0	25.0	25.0	25.0	125			50.0	25.0	50.0	50.0
INT-QC-MCVB-3		7220a18											
INT-QC-MCVB-3		7220a52											
True Value													
INT-ICP1.1B		7220a20											
INT-ICP1.1B		7220a50											
True Value													
1643d (50x)		7220a23		203		472			7220				
1643d (50x)		7220a55		315		540±110			7340				
1643d		7220a24	17.7	286	6.31±3.4	513	19.3	11.3		33.3	37.0	26.8	55.5
True Value			18.5	295	6.47	506	18.2	12.5	7990	35.1	37.7	25.0	58.1
INT-ICP1.1A		7220a21	9.53	4.61		4.09	22.7		113			10.3	9.10
INT-ICP1.1A		7220a51	9.99	4.66		4.00	20±4		115			11.6	10.7
True Value			10.0	5.00		5.00	25.0		125			10.0	10.0
INT-QC-MCVB-2		7220a19											
INT-QC-MCVB-2		7220a53											
True Value													
INT-ICP1.5/Cs		7220a22											
INT-ICP1.5/Cs		7220a54											
True Value													
10ppb CLMS-1		7220a25											
10ppb CLMS-1		7220a57											
True Value													

DATA REVIEW

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Date: 3/5/97 Pages: 2 of 6

ICP/MS Analysis of HLV Tank Rinse Samples

March 5, 1997

3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	Cu µg/g	Zn µg/g	As µg/g	Rb µg/g	Zr µg/g	Nb µg/g	Mo µg/g	Rh µg/g	Pd µg/g	Sn µg/g	Sb µg/g	Cs µg/g
1%HNO3		7228a1	<2	<2	<2	3±2	<1	<1	<1	<1	<1	<1	<1	<1
1%HNO3		7227a26	9±3	<2	<2	<4	<1	<1	1±1	<1	1±1	2±1	<1	<1
1%HNO3		7228a49	<2	<2	4.6	<4	<1	<1	<1	<1	1.9	<1	<1	1.8
96-06864-PB	Process Blank	7228a27	26.6	257	2.8	<4	<1	<1	<1	<1	<1	8.8	<1	1.1
96-06864-BS	Blank Spike	7228a42	303	670±80	226									
Spike Recovery			115%	171%	93%									
96-06864	HLV-30	7228a38	18±4	191	10.9	<4	18±7	<1	5±5	10±2	2±0.03	7±4	<1	22±5
96-06864 Duplicate	HLV-30	7228a40	16.8	170	12±6	<4	22±7	<1	4±1	10.4	4±3	6±1	<1	24±3
96-06864-DUP	HLV-30	7228a39	12±5	210	8±1	<4	20±5	<1	2.8	9.3	4±1	6±3	<1	16±3
96-06864-MS	HLV-30	7228a44	140±20	290±60	113.10									
Spike Recovery			104%	84%	88%									
96-06864-DUP+spike	HLV-30	7228a47&48	277	398	373	52.5	160±30	61.3	74.6	82.8	68.8	84±9	161	5710
Spike Recovery			169%	120%	93%	78%	104%	90%	107%	109%	96%	116%	95%	85%

DATA REVIEW

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Date: 3/5/97 Pages: 3 of 6

ICP/MS Analysis of HLV Tank Rinse Samples

March 5, 1997

JP Brown 3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	Cu ng/ml	Zn ng/ml	As ng/ml	Rb ng/ml	Zr ng/ml	Nb ng/ml	Mo ng/ml	Rh ng/ml	Pd ng/ml	Sn ng/ml	Sb ng/ml	Cs ng/ml
INT-QC-MCVA-1		7220a14	49.8	50.0	119									
True Value			50.0	50.0	125									
INT-QC-MCVB-3		7220a18						1.61				3.8±0.4		
INT-QC-MCVB-3		7220a52						1.5±0.2				4.0±0.8		
True Value								2.00				4.00		
INT-ICP1.1B		7220a20					25.9		10±2					
INT-ICP1.1B		7220a50					21.4		8.01					
True Value							25.0		10.0					
1643d (50x)		7220a23												
1643d (50x)		7220a55												
1643d		7220a24	20.4	68.6	50.9	0.37			104				47.5	
True Value			20.5	72.5	56.0	13.0			113				54.1	
INT-ICP1.1A		7220a21	10.3	8.05										
INT-ICP1.1A		7220a51	11.3	11±2										
True Value			10.0	10.0										
INT-QC-MCVB-2		7220a19								1.87	2.20			
INT-QC-MCVB-2		7220a53								1.97	2.0±0.2			
True Value										2.00	2.00			
INT-ICP1.5/Cs		7220a22												51.8
INT-ICP1.5/Cs		7220a54												49.8
True Value														50.0
10ppb CLMS-1		7220a25												
10ppb CLMS-1		7220a57												
True Value														

DATA REVIEW

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Date: 3/5/97 Page 4 of 6

ICP/MS Analysis of HLV Tank Rinse Samples

March 5, 1997

3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	La µg/g	Ce µg/g	Pr µg/g	Nd µg/g	Eu µg/g	Gd µg/g	Tb µg/g	Dy µg/g	Ho µg/g	Er µg/g	Tm µg/g	Yb µg/g	U µg/g
1%HNO3		7228a1	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<2
1%HNO3		7227a26	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<2
1%HNO3		7228a49	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<2
96-06864-PB	Process Blank	7228a27	<1	<1	<1	<1	<1	<1	<1	<2	<1	<1	<1	<1	<2
96-06864-BS	Blank Spike	7228a42													
Spike Recovery															
96-06864	HLV-30	7228a38	11.0	7.7	4.6	25±3	<1	<1	<1	<2	<1	<1	<1	<1	37.8
96-06864 Duplicate	HLV-30	7228a40	14±3	6.8	5.4	24±9	<1	<1	<1	<2	<1	<1	<1	<1	20±6
96-06864-DUP	HLV-30	7228a39	11±3	6.8	4.6	13±2	<1	<1	<1	<2	<1	<1	<1	<1	25±6
96-06864-MS	HLV-30	7228a44													
Spike Recovery															
96-06864-DUP+spike	HLV-30	7228a47&48	43.2	43.0	48±8	60±12	36.5	29±8	38±7	45±9	40±4	38±11	45.1	45±5	2740
Spike Recovery			80%	90%	100%	117%	88%	69%	92%	107%	97%	92%	109%	109%	101%

DATA REVIEW

Reviewed by: [signature]

Date: 3/5/97 Pages: 5 of 6

ICP/MS Analysis of HLV Tank Rinse Samples

March 5, 1997

J/Brown 3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	La ng/ml	Ce ng/ml	Pr ng/ml	Nd ng/ml	Eu ng/ml	Gd ng/ml	Tb ng/ml	Dy ng/ml	Ho ng/ml	Er ng/ml	Tm ng/ml	Yb ng/ml	U ng/ml
INT-QC-MCVA-1		7220a14													
True Value															
INT-QC-MCVB-3		7220a18													
INT-QC-MCVB-3		7220a52													
True Value															
INT-ICP1.1B		7220a20													
INT-ICP1.1B		7220a50													
True Value															
1643d (50x)		7220a23													
1643d (50x)		7220a55													
1643d		7220a24													
True Value															
INT-ICP1.1A		7220a21													
INT-ICP1.1A		7220a51													
True Value															
INT-QC-MCVB-2		7220a19													
INT-QC-MCVB-2		7220a53													
True Value															
INT-ICP1.5/Cs		7220a22													49.2
INT-ICP1.5/Cs		7220a54													45±5
True Value															50.0
10ppb CLMS-1		7220a25	8.69	8.66	10.5	8.07	10.6	9.8±1.6	7.35	9.9±1.2	7.90	8.9±1.6	8.59	10.6	
10ppb CLMS-1		7220a57	9.27	9.51	10.5	8.15	9.78	8.29	8.3±1.1	9.6±1.2	8.27	10±3	8.74	9.66	
True Value			10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0	

DATA REVIEW

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Date: 3/5/97 Pages: 6 of 6

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	Cr µg/g	Sr µg/g	Cd µg/g	Ba µg/g	Pb µg/g	Be µg/g	Mg µg/g	V µg/g	Mn µg/g	Co µg/g
1%HNO3		7220a1	<0.1	<0.05	<0.05	<0.05	<0.1	<0.05	0.2±0.1	<0.1	<0.1	<0.05
1%HNO3		7227a26	<0.1	0.05	<0.05	<0.05	0.4±0.3	<0.05	0.19	0.4	<0.1	<0.05
1%HNO3		7220a49	<0.1	<0.05	<0.05	<0.05	<0.1	0.07±0.03	0.16	0.7	<0.1	<0.05
97-00832-EB	Extract Blank	7220a28	<0.1	0.09±0.05	<0.05	<0.05	1.0±0.2	0.225	1.32	1.5	0.15±0.03	<0.05
97-00832-PB	Process Blank	7220a29	<0.1	0.08±0.01	<0.05	<0.05	0.76	0.32±0.8	1.03	1.7	0.10±0.02	<0.05
97-00832-BS	Blank Spike	7220a41	6.42		1.00	126	6.66					
Spike Recovery			97%		79%	97%	91%					
97-00832	HLV 1X-01	7220a30	<0.1	0.923	<0.05	0.15±0.05	0.57	0.30±0.03	5.99	1.6	0.14±0.02	<0.05
97-00832-DUP	HLV 1X-01	7220a37	0.10±0.02	1.04	<0.05	0.23±0.03	1.2±0.3	0.33±0.17	6.49	2.4	0.27±0.06	<0.05
97-00832-MS	HLV 1X-01	7220a43	6.41		1.40	127	7.3±1.7					
Spike Recovery			97%		104%	98%	104%					
97-00833	HLV-1X-02	7220a31	<0.1	0.940	<0.05	0.34	2.0±0.2	0.32±0.05	6.53	1.7	0.27	<0.05
97-00834	HLV-1X-03	7220a32	<0.1	0.815	<0.05	0.33±0.11	0.79	0.27±0.03	8.36	1.8	0.38	<0.05
97-00835	HLV-1X-5	7220a33	0.16±0.03	0.70±0.07	<0.05	0.20±0.10	0.77±0.19	0.34±0.12	6.10	2.1	0.23±0.04	<0.05
97-00836	HLV-1X-07	7220a34	0.12±0.02	1.1±0.02	<0.05	0.47±0.23	0.81±0.70	0.25±0.03	9.5±7.8	1.7±0.2	0.21±0.03	<0.05
97-00837	HLV-1X-08	7220a35	0.12±0.05	1.1±0.2	<0.05	0.13	0.92±0.36	0.30±0.10	6.00	2.1	0.20	<0.05
97-00837+spike	HLV-1X-08	7220a45&46	39±4	18.8	20±4	19.1	82.1	2.8±0.3	400	43.3	20.4	42±5
Spike Recovery			103%	94%	105%	100%	119%	110%	97%	109%	106%	111%

DATA REVIEW

Reviewed by:

Date: 3/5/97 Pages: 1 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

J P Brennan 3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	Cr ng/ml	Sr ng/ml	Cd ng/ml	Ba ng/ml	Pb ng/ml	Be ng/ml	Mg ng/ml	V ng/ml	Mn ng/ml	Co ng/ml
INT-QC-MCVA-1		7228a14	46.7	25.0	27.6	23.1	129			48.5	24.3	50.0
True Value			50.0	25.0	25.0	25.0	125			50.0	25.0	50.0
INT-QC-MCVB-3		7228a18										
INT-QC-MCVB-3		7228a52										
True Value												
INT-ICP1.1B		7228a20										
INT-ICP1.1B		7228a50										
True Value												
1643d (50x)		7228a23		283		472			7220			
1643d (50x)		7228a55		315		540±110			7340			
1643d		7228a24	17.7	286	6.3±3.4	513	19.3	11.3		33.3	37.0	26.8
True Value			18.5	295	6.47	506	18.2	12.5	7990	35.1	37.7	25.0
INT-ICP1.1A		7228a21	9.53	4.61		4.89	22.7		113			10.3
INT-ICP1.1A		7228a51	9.99	4.66		4.30	28±4		115			11.6
True Value			10.0	5.00		5.00	25.0		125			10.0
INT-QC-MCVB-2		7228a19										
INT-QC-MCVB-2		7228a53										
True Value												
INT-ICP1.5/Cs		7228a22										
INT-ICP1.5/Cs		7228a54										
True Value												
10ppb CLMS-1		7228a25										
10ppb CLMS-1		7228a57										
True Value												

DATA REVIEW

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Date: 3/5/97 Pages: 2 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

J P Brennan 3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	Ni µg/g	Cu µg/g	Zn µg/g	As µg/g	Rb µg/g	Zr µg/g	Nb µg/g	Mo µg/g	Rh µg/g	Pd µg/g
1%HNO3		7220a1	0.12	<0.1	<0.1	<0.1	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05
1%HNO3		7227a26	<0.1	0.4±0.2	<0.1	<0.1	<0.1	<0.05	<0.05	0.06±0.05	<0.05	0.06±0.06
1%HNO3		7220a49	<0.1	<0.1	<0.1	0.2±0.1	<0.1	<0.05	<0.05	<0.05	<0.05	0.09±0.04
97-00832-EB	Extract Blank	7220a28	<0.1	1.39	1.97	0.11±0.05	<0.1	<0.05	0.1±0.1	0.07±0.07	<0.05	0.07±0.04
97-00832-PB	Process Blank	7220a29	<0.1	1.2±0.2	2.36	0.16±0.05	<0.1	<0.05	0.07	<0.05	<0.05	0.05±0.03
97-00832-BS	Blank Spike	7220a41	6.58	7.52	7.39	6.38						
Spike Recovery			100%	97%	78%	96%						
97-00832	HLV 1X-01	7220a30	<0.1	0.83	1.3±0.03	0.18±0.05	<0.1	<0.05	0.07	0.06±0.05	<0.05	0.47
97-00832-DUP	HLV 1X-01	7220a37	<0.1	0.74±0.11	2.50	0.42±0.10	<0.1	<0.05	0.08	<0.05	<0.05	0.43±0.28
97-00832-MS	HLV 1X-01	7220a43	6.83	7.4±0.7	7.39	5.94						
Spike Recovery			104%	101%	94%	89%						
97-00833	HLV-1X-02	7220a31	0.15±0.05	0.68	6.72	0.21±0.03	<0.1	<0.05	0.06±0.03	<0.05	<0.05	0.55±0.11
97-00834	HLV-1X-03	7220a32	<0.1	0.81	3.14	0.12±0.04	0.12±0.02	<0.05	0.07±0.01	0.07±0.07	<0.05	0.09±0.07
97-00835	HLV-1X-5	7220a33	0.21±0.05	1.13	9.26	0.15±0.03	<0.1	<0.05	0.10±0.02	<0.05	<0.05	1.8±0.9
97-00836	HLV-1X-07	7220a34	0.58±0.10	0.90	1.61	0.32±0.12	<0.1	<0.05	0.10±0.02	0.11±0.10	<0.05	1.1±0.2
97-00837	HLV-1X-08	7220a35	0.15±0.03	0.92±.13	6.93	0.27±0.04	<0.1	<0.05	0.09±0.02	0.07±0.04	<0.05	0.99±0.14
97-00837+spike	HLV-1X-08	7220a45&46	41.5	42±5	51±9	43.2	10.0	21.5	10.8	11.5	11.7	12±2
Spike Recovery			109%	100%	116%	94%	87%	95%	94%	100%	103%	97%

DATA REVIEW

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Date: 3/5/97 Pages: 3 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

J P Brennan
3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	Ni ng/ml	Cu ng/ml	Zn ng/ml	As ng/ml	Rb ng/ml	Zr ng/ml	Nb ng/ml	Mo ng/ml	Rh ng/ml	Pd ng/ml
INT-QC-MCVA-1		7228a14	48.6	49.8	50.0	119						
True Value			50.0	50.0	50.0	125						
INT-QC-MCVB-3		7228a18							1.61			
INT-QC-MCVB-3		7228a52							1.5±0.2			
True Value									2.00			
INT-ICP1.1B		7228a20						25.9		10±2		
INT-ICP1.1B		7228a50						21.4		8.91		
True Value								25.0		10.0		
1643d (50x)		7228a23										
1643d (50x)		7228a55										
1643d		7228a24	55.5	20.4	68.6	50.9	9.37			104		
True Value			58.1	20.5	72.5	56.0	13.0			113		
INT-ICP1.1A		7228a21	9.10	10.3	8.95							
INT-ICP1.1A		7228a51	10.7	11.3	11±2							
True Value			10.0	10.0	10.0							
INT-QC-MCVB-2		7228a19									1.87	2.20
INT-QC-MCVB-2		7228a53									1.97	2.0±0.2
True Value											2.00	2.00
INT-ICP1.5/Cs		7228a22										
INT-ICP1.5/Cs		7228a54										
True Value												
10ppb CLMS-1		7228a25										
10ppb CLMS-1		7228a57										
True Value												

DATA REVIEW

Reviewed by: [signature]

Date: 3/5/97 Pages: 4 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

J P Bryson 3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	Sn µg/g	Sb µg/g	Cs µg/g	La µg/g	Ce µg/g	Pr µg/g	Nd µg/g	Eu µg/g	Gd µg/g	Tb µg/g	Dy µg/g
1%HNO3		7228a1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05±0.02
1%HNO3		7227a26	0.11±0.03	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1%HNO3		7228a49	<0.05	<0.05	0.09±0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05±0.05
97-00832-EB	Extract Blank	7228a28	0.50±0.20	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00832-PB	Process Blank	7228a29	0.39	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00832-BS	Blank Spike	7228a41											
Spike Recovery													
97-00832	HLV 1X-01	7228a30	0.22±0.06	<0.05	0.06±0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00832-DUP	HLV 1X-01	7228a37	0.29	<0.05	0.05±0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00832-MS	HLV 1X-01	7228a43											
Spike Recovery													
97-00833	HLV-1X-02	7228a31	0.23±0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00834	HLV-1X-03	7228a32	0.24±0.12	<0.05	2.78	<0.05	<0.05	<0.05	0.13±0.13	<0.05	<0.05	<0.05	<0.05
97-00835	HLV-1X-5	7228a33	0.32	<0.05	0.12±0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10±0.08
97-00836	HLV-1X-07	7228a34	0.36±0.12	<0.05	0.22±0.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00837	HLV-1X-08	7228a35	0.37	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-00837+spike	HLV-1X-08	7228a45&46	13.0	24±4	936	6.30	6.82	6.61	5±2	6.46	7.73	6±1	6±2
Spike Recovery			111%	84%	92%	92%	99%	96%	73%	94%	113%	87%	87%

DATA REVIEW

Reviewed by: [signature]

Date: 3/5/97 Pages: 5 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	Sn ng/ml	Sb ng/ml	Cs ng/ml	La ng/ml	Ce ng/ml	Pr ng/ml	Nd ng/ml	Eu ng/ml	Gd ng/ml	Tb ng/ml	Dy ng/ml
INT-QC-MCVA-1		7228a14											
True Value													
INT-QC-MCVB-3		7228a18	3.8±0.4										
INT-QC-MCVB-3		7228a52	4.0±0.8										
True Value			4.00										
INT-ICP1.1B		7228a20											
INT-ICP1.1B		7228a50											
True Value													
1643d (50x)		7228a23											
1643d (50x)		7228a55											
1643d		7228a24		47.5									
True Value				54.1									
INT-ICP1.1A		7228a21											
INT-ICP1.1A		7228a51											
True Value													
INT-QC-MCVB-2		7228a19											
INT-QC-MCVB-2		7228a53											
True Value													
INT-ICP1.5/Cs		7228a22			51.0								
INT-ICP1.5/Cs		7228a54			49.0								
True Value					50.0								
10ppb CLMS-1		7228a25				8.69	8.66	10.5	8.87	10.6	9.79	7.35	9.9±1.2
10ppb CLMS-1		7228a57				9.27	9.51	10.5	8.15	9.78	8.29	8.3±1.1	9.6±1.2
True Value						10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0

DATA REVIEW

Reviewed by: [signature]

Date: 3/5/97 Pages: 6 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

JP Brown 3/5/97

Results are reported in µg/g (ppm) of original sample

ALO# Number	Client ID	ICP/MS Number	Ho µg/g	Er µg/g	Tm µg/g	Yb µg/g	U µg/g
1%HNO3		7228a1	<0.05	<0.05	<0.05	<0.05	0.06±0.03
1%HNO3		7227a26	<0.05	<0.05	<0.05	<0.05	<0.05
1%HNO3		7228a49	<0.05	<0.05	<0.05	<0.05	<0.05
97-00832-EB	Extract Blank	7228a28	<0.05	<0.05	<0.05	<0.05	0.05
97-00832-PB	Process Blank	7228a29	<0.05	<0.05	<0.05	<0.05	<0.05
97-00832-BS	Blank Spike	7228a41					
Spike Recovery							
97-00832	HLV 1X-01	7228a30	<0.05	<0.05	<0.05	<0.05	0.07±0.06
97-00832-DUP	HLV 1X-01	7228a37	<0.05	<0.05	<0.05	<0.05	0.06±0.06
97-00832-MS	HLV 1X-01	7228a43					
Spike Recovery							
97-00833	HLV-1X-02	7228a31	<0.05	<0.05	<0.05	<0.05	0.10±0.02
97-00834	HLV-1X-03	7228a32	<0.05	<0.05	<0.05	<0.05	0.10±0.10
97-00835	HLV-1X-5	7228a33	<0.05	<0.05	<0.05	<0.05	0.05±0.03
97-00836	HLV-1X-07	7228a34	<0.05	0.07±0.04	<0.05	<0.05	2.1±0.3
97-00837	HLV-1X-08	7228a35	<0.05	<0.05	<0.05	<0.05	0.20±0.22
97-00837+spike	HLV-1X-08	7228a45&46	6.23	7±1	6.73	7±2	431
Spike Recovery			91%	102%	98%	102%	95%

DATA REVIEW

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Date: 3/5/97 Pages: 7 of 8

HLV 3/3/97

ICP/MS Analysis of HLV Resin Samples (TCLP Leach)

March 5, 1997

J/Brown
3/5/97

CCV results are reported in ng/ml (ppb)

ALO# Number	Client ID	ICP/MS Number	Ho ng/ml	Er ng/ml	Tm ng/ml	Yb ng/ml	U ng/ml
INT-QC-MCVA-1		7228a14					
True Value							
INT-QC-MCVB-3		7228a18					
INT-QC-MCVB-3		7228a52					
True Value							
INT-ICP1.1B		7228a20					
INT-ICP1.1B		7228a50					
True Value							
1643d (50x)		7228a23					
1643d (50x)		7228a55					
1643d		7228a24					
True Value							
INT-ICP1.1A		7228a21					
INT-ICP1.1A		7228a51					
True Value							
INT-QC-MCVB-2		7228a19					
INT-QC-MCVB-2		7228a53					
True Value							
INT-ICP1.5/Cs		7228a22					49.2
INT-ICP1.5/Cs		7228a54					45±5
True Value							50.0
10ppb CLMS-1		7228a25	7.98	8.9±1.6	8.59	10.6	
10ppb CLMS-1		7228a57	8.27	10±3	8.74	9.66	
True Value			10.0	10.0	10.0	10.0	

DATA REVIEW

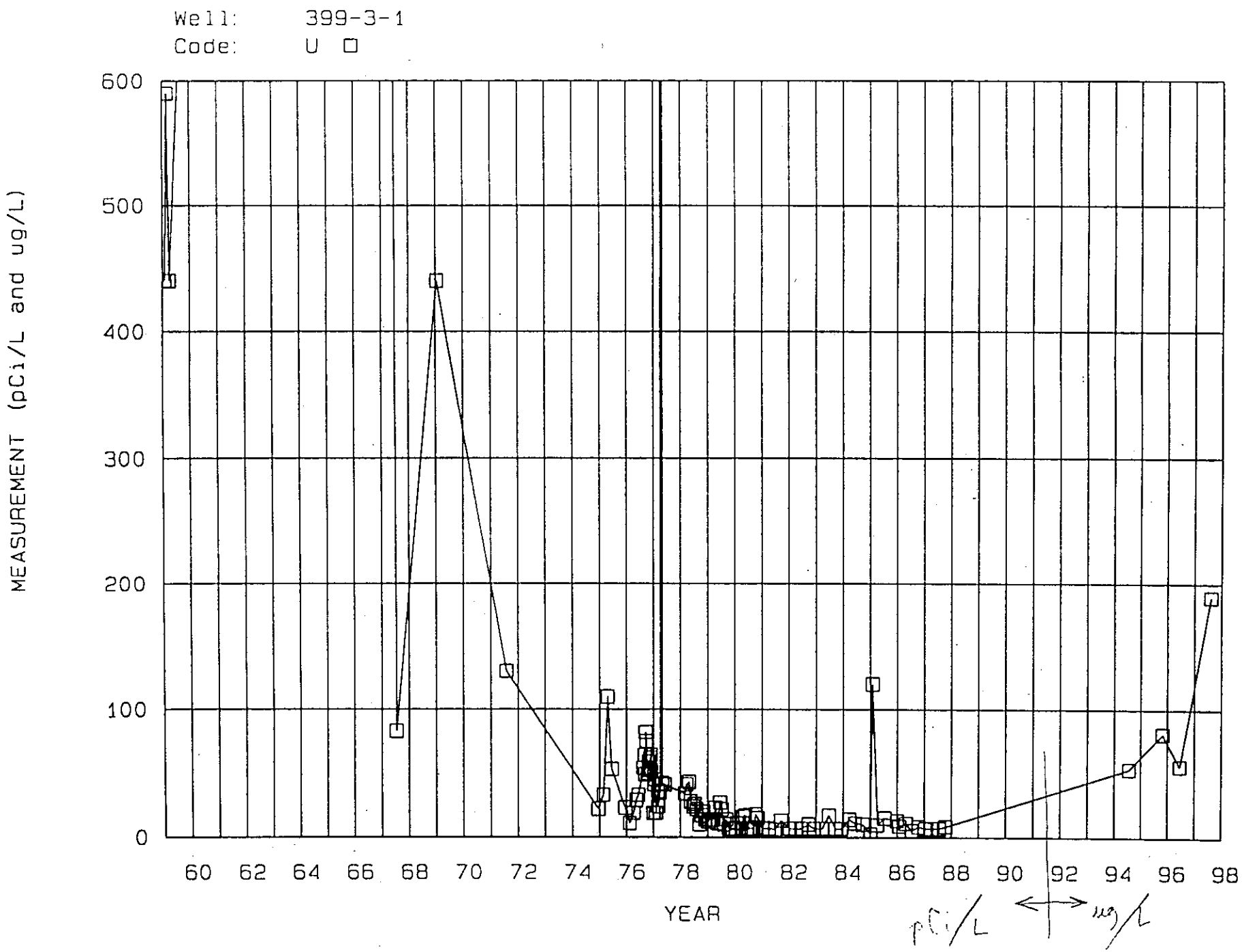
Reviewed by: [signature]

Date: 3/5/97 Pages: 8 of 8

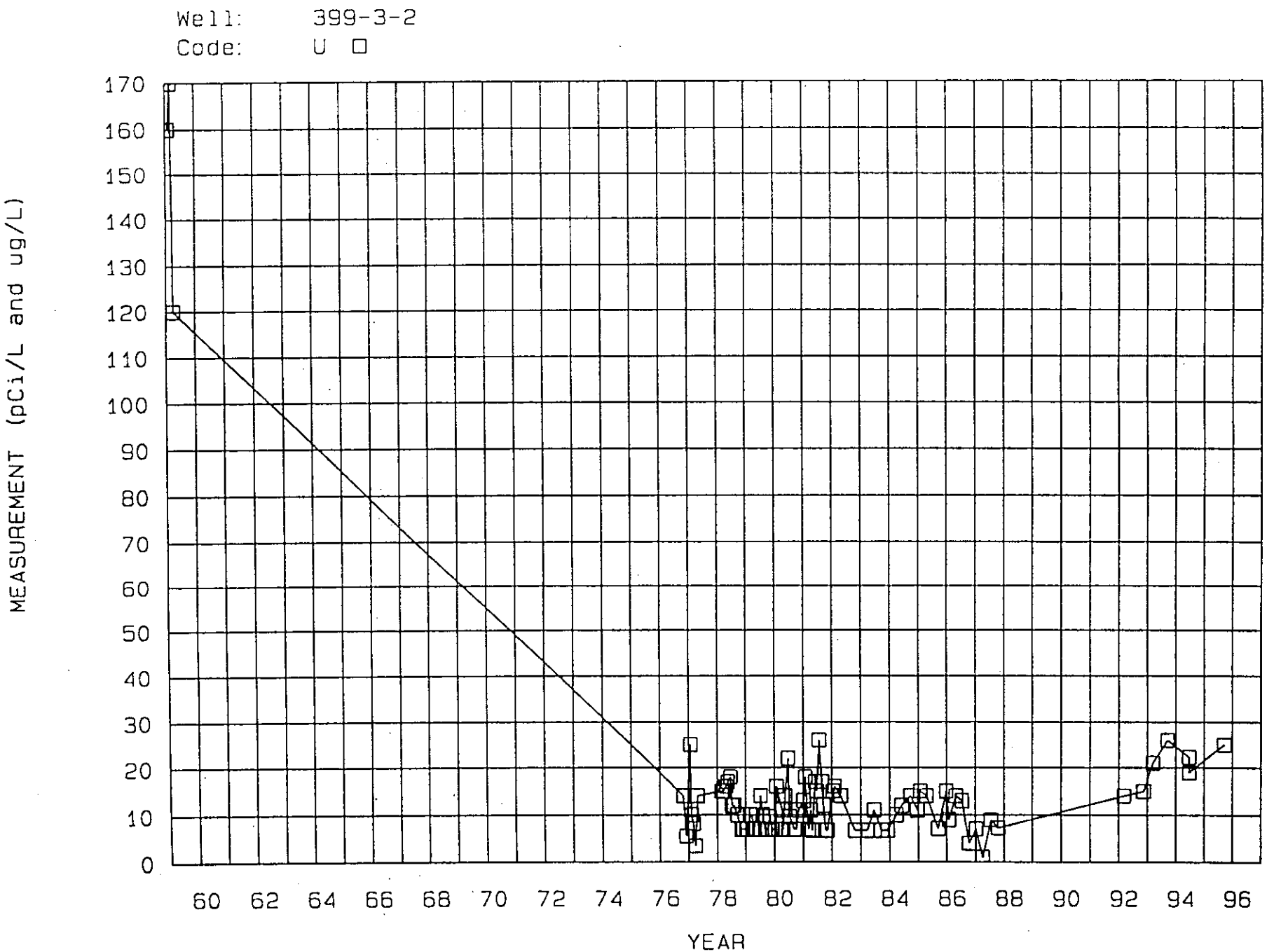
ATTACHMENT 4

Uranium Trend Plots of Wells Within 305m of the 324 Building

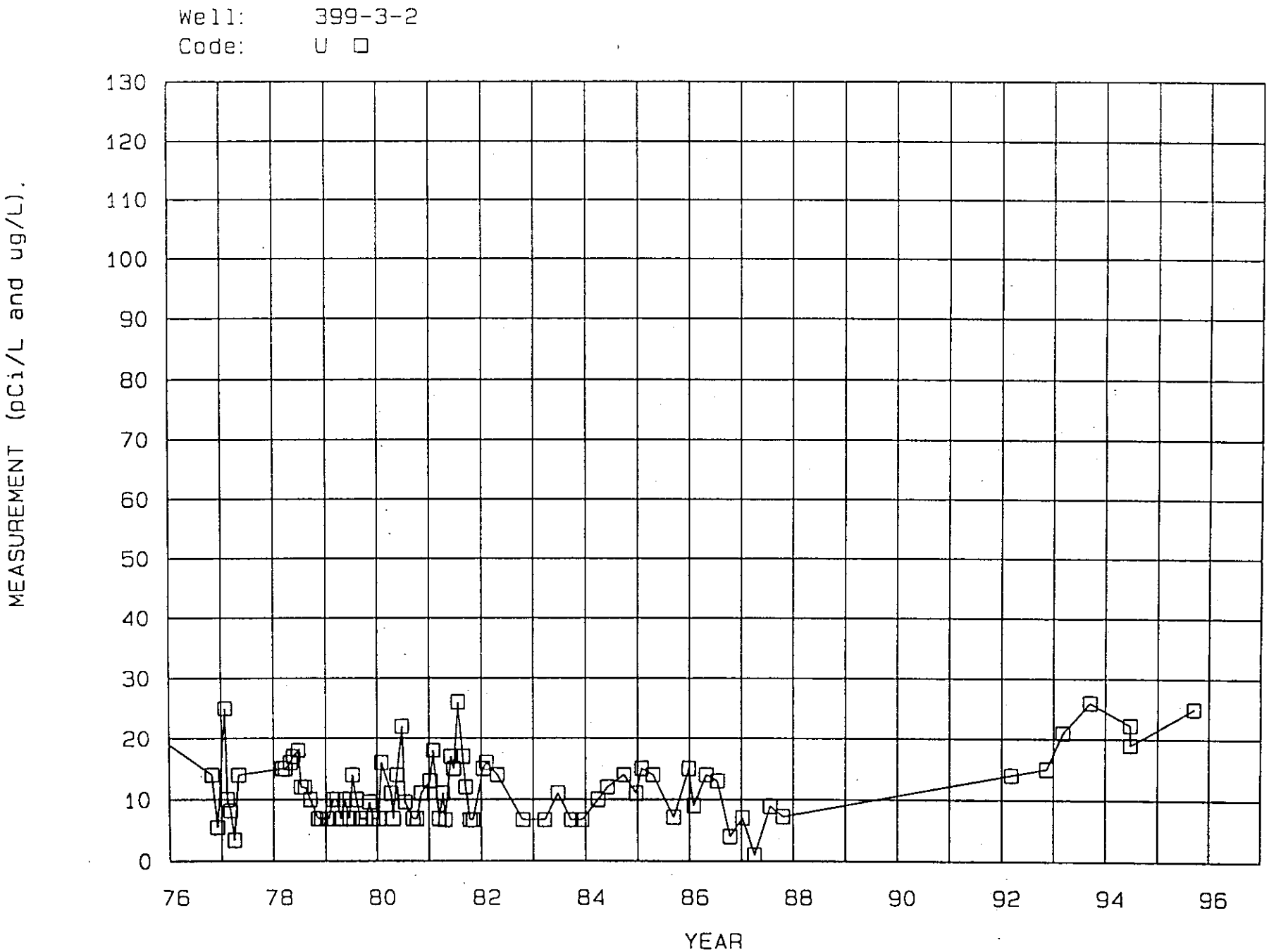
Uranium in Well 399-3-1



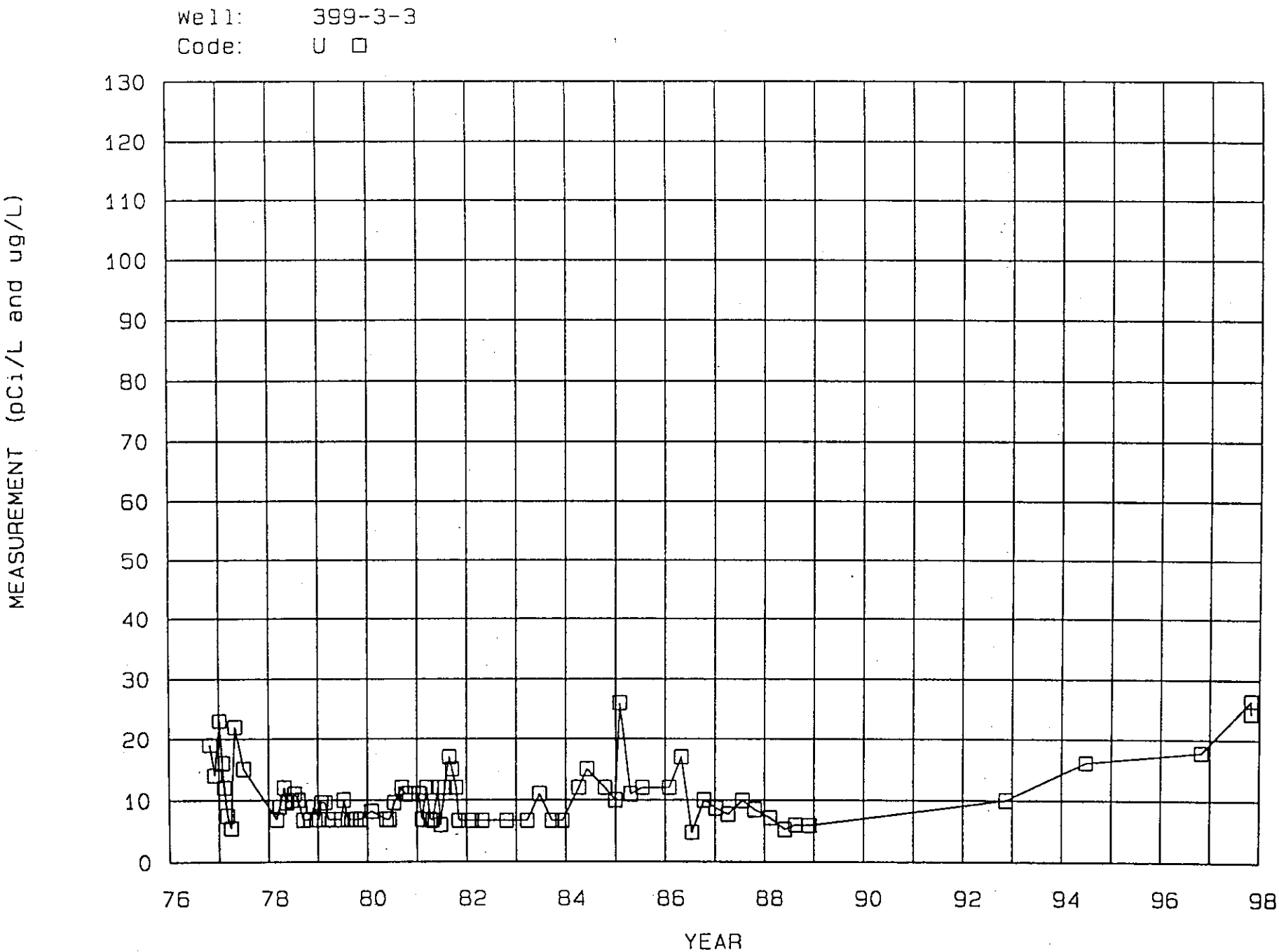
Uranium in Well 399-3-2



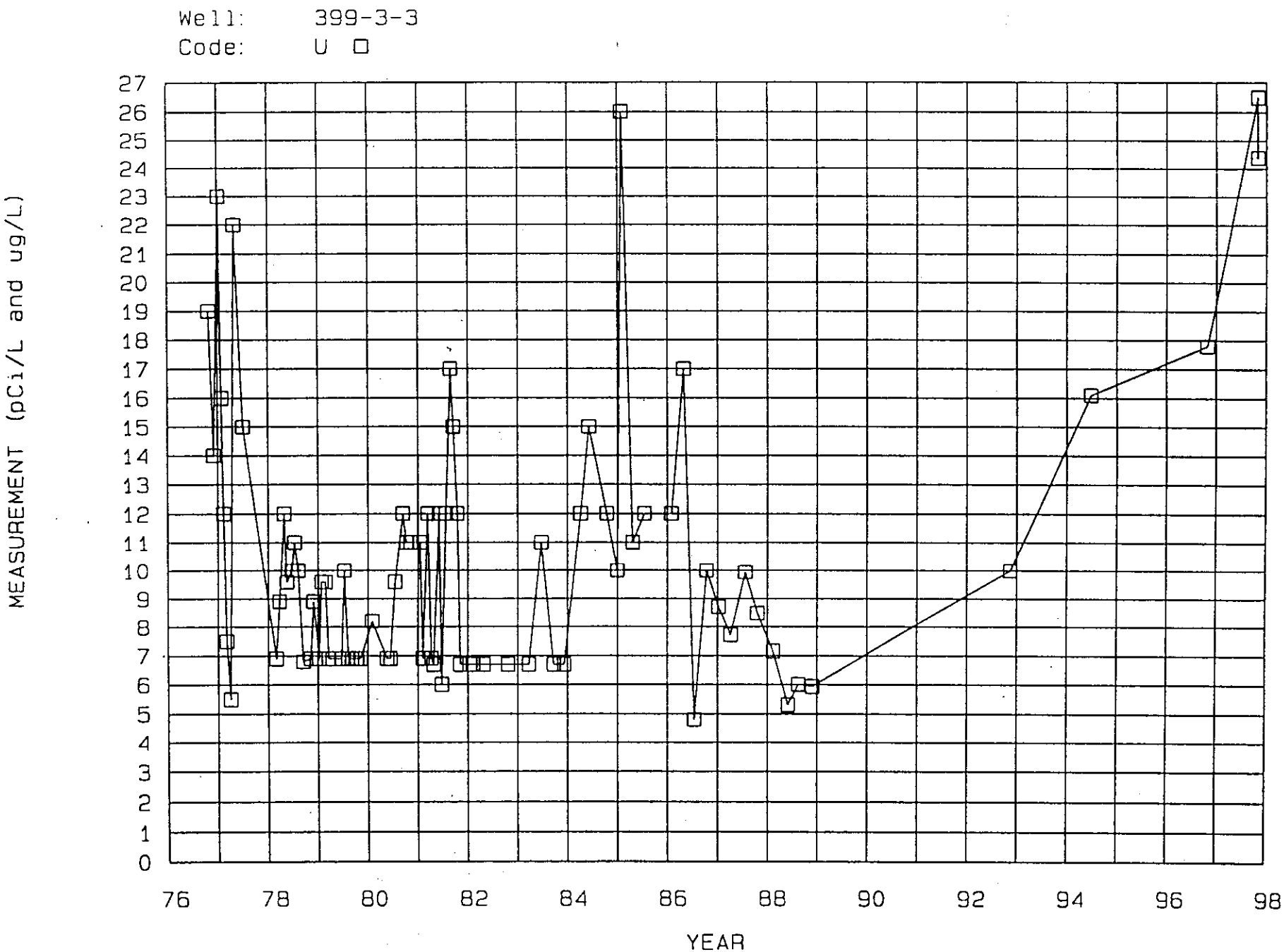
Uranium in Well 399-3-2



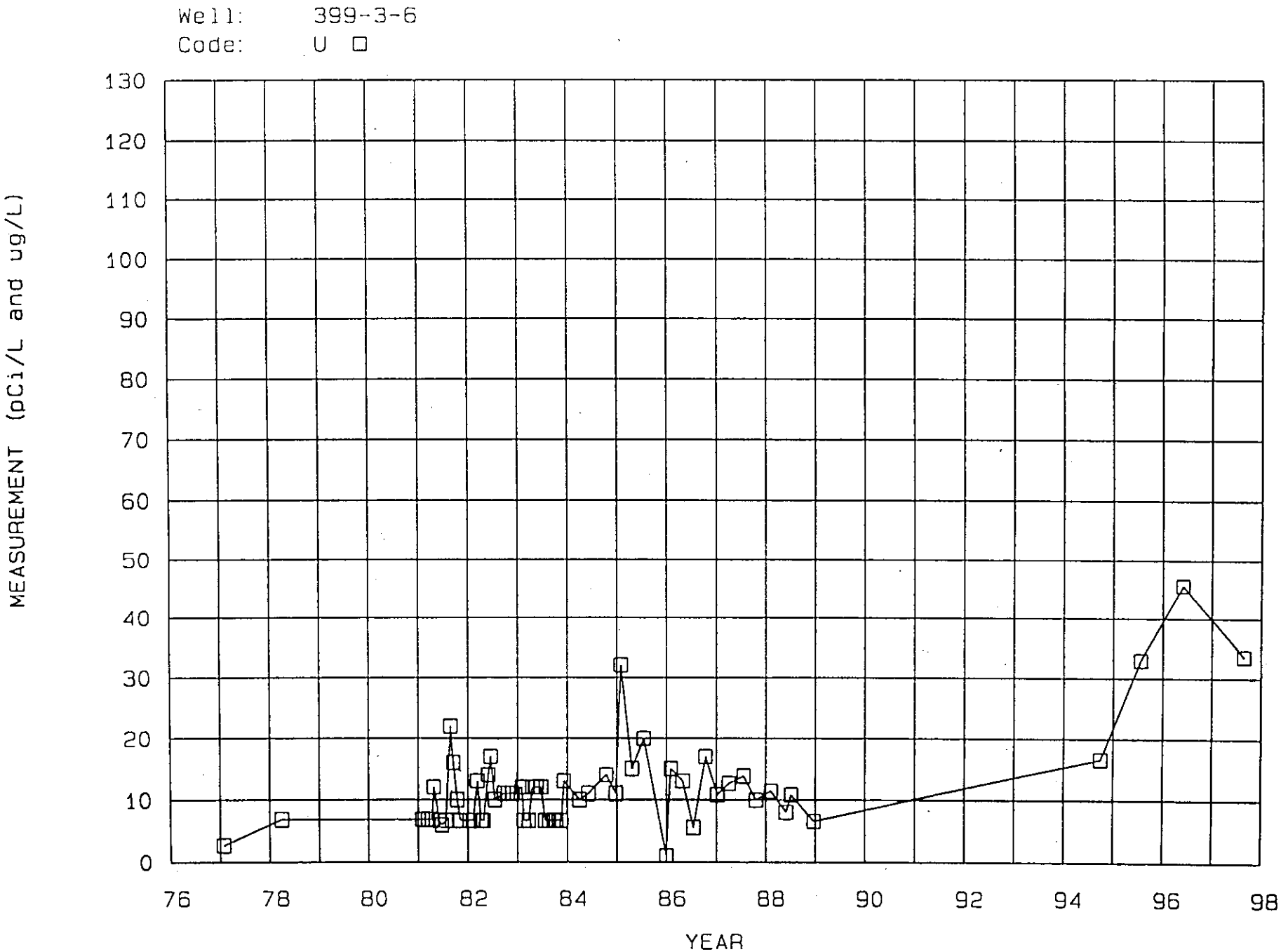
Uranium in Well 399-3-3



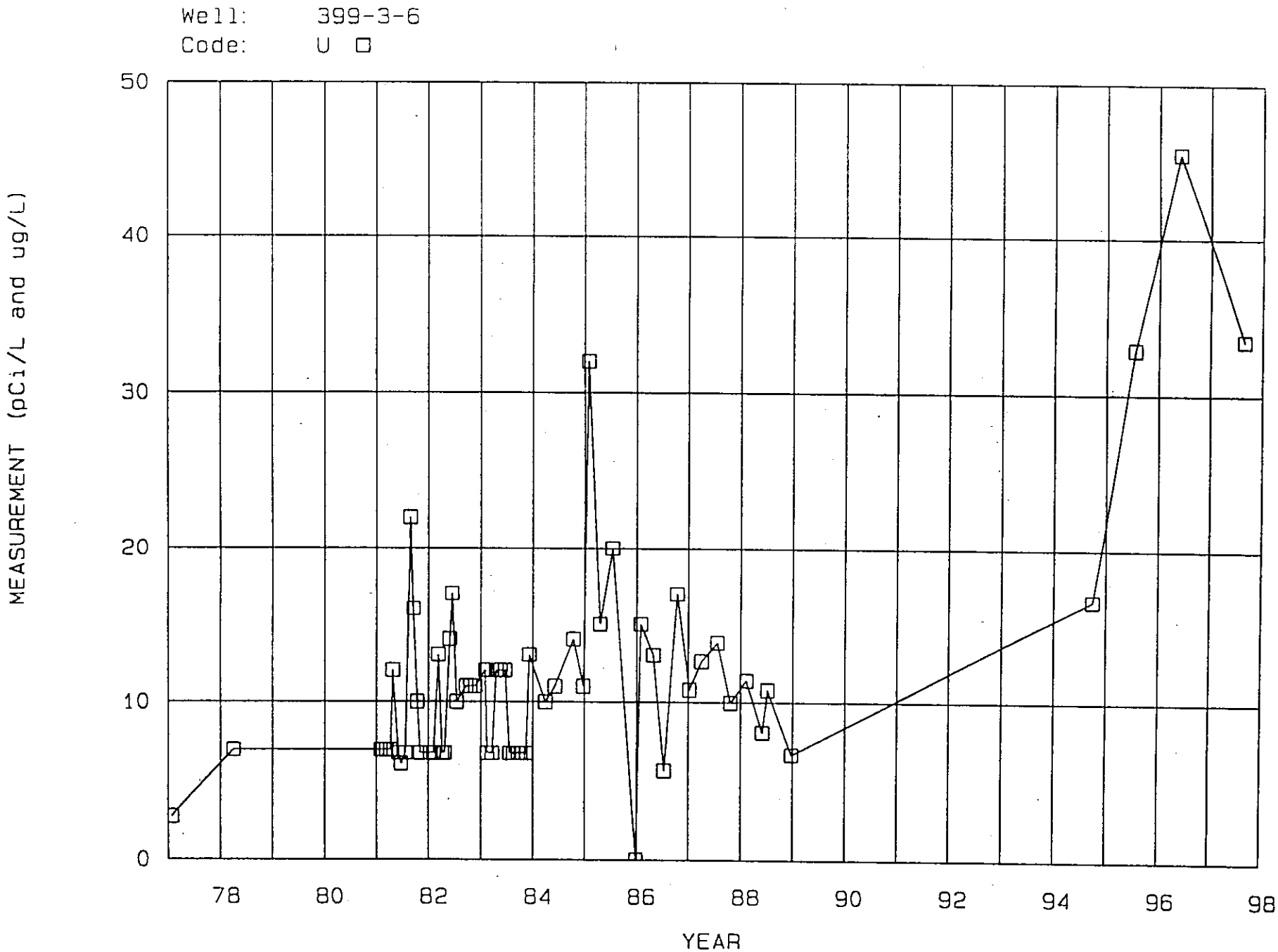
Uranium in Well 399-3-3



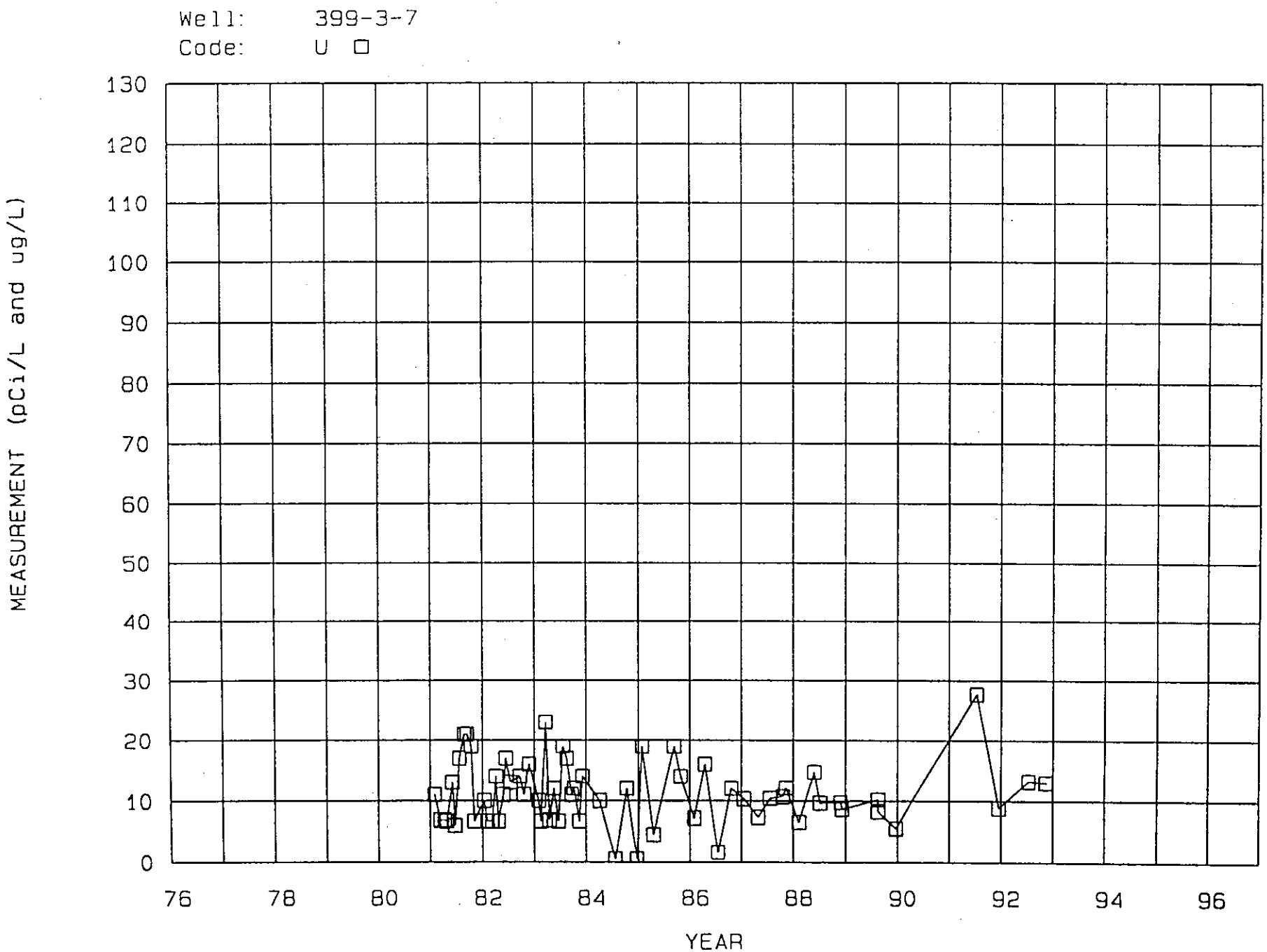
Uranium in Well 399-3-6



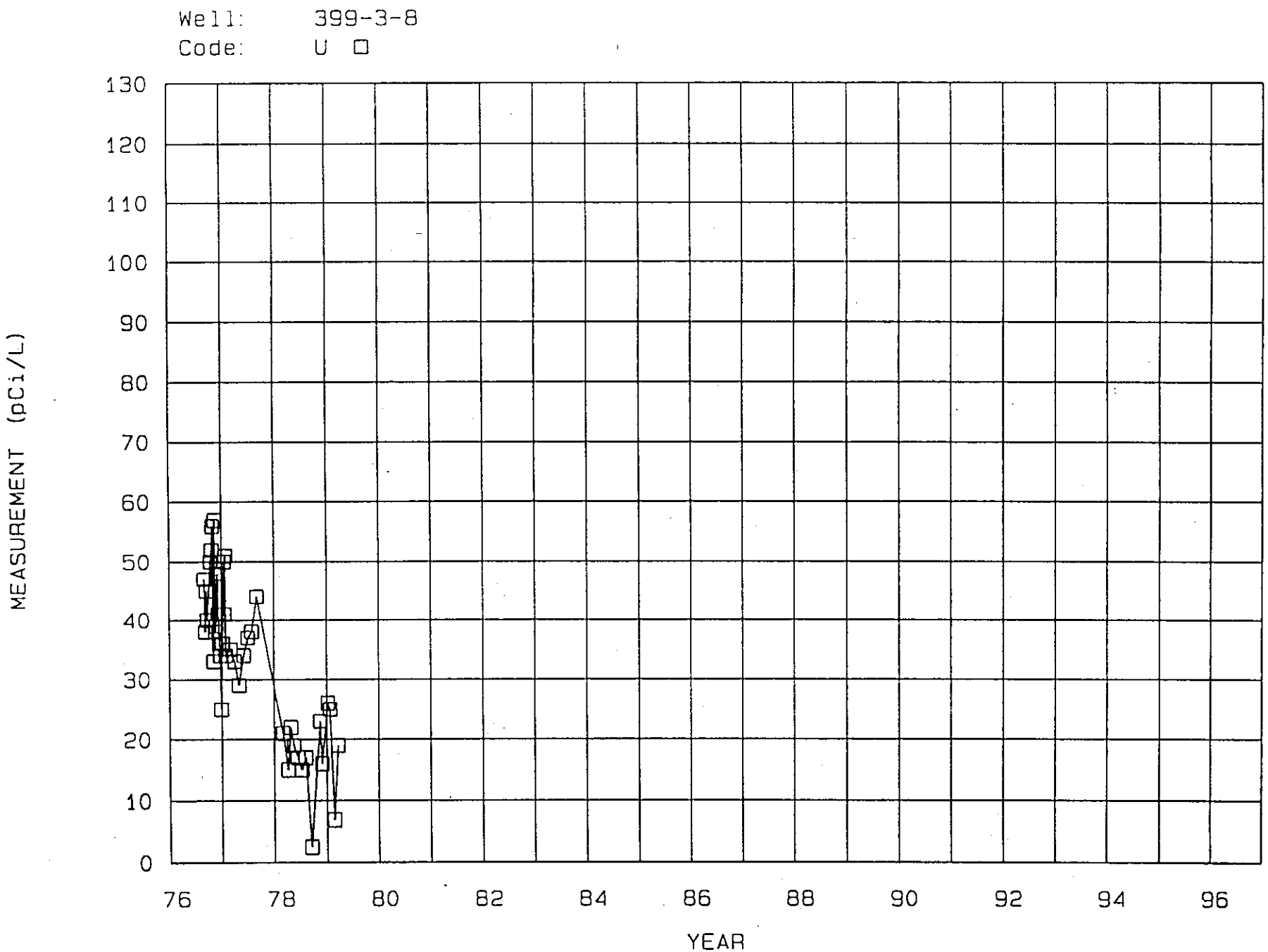
Uranium in Well 399-3-6



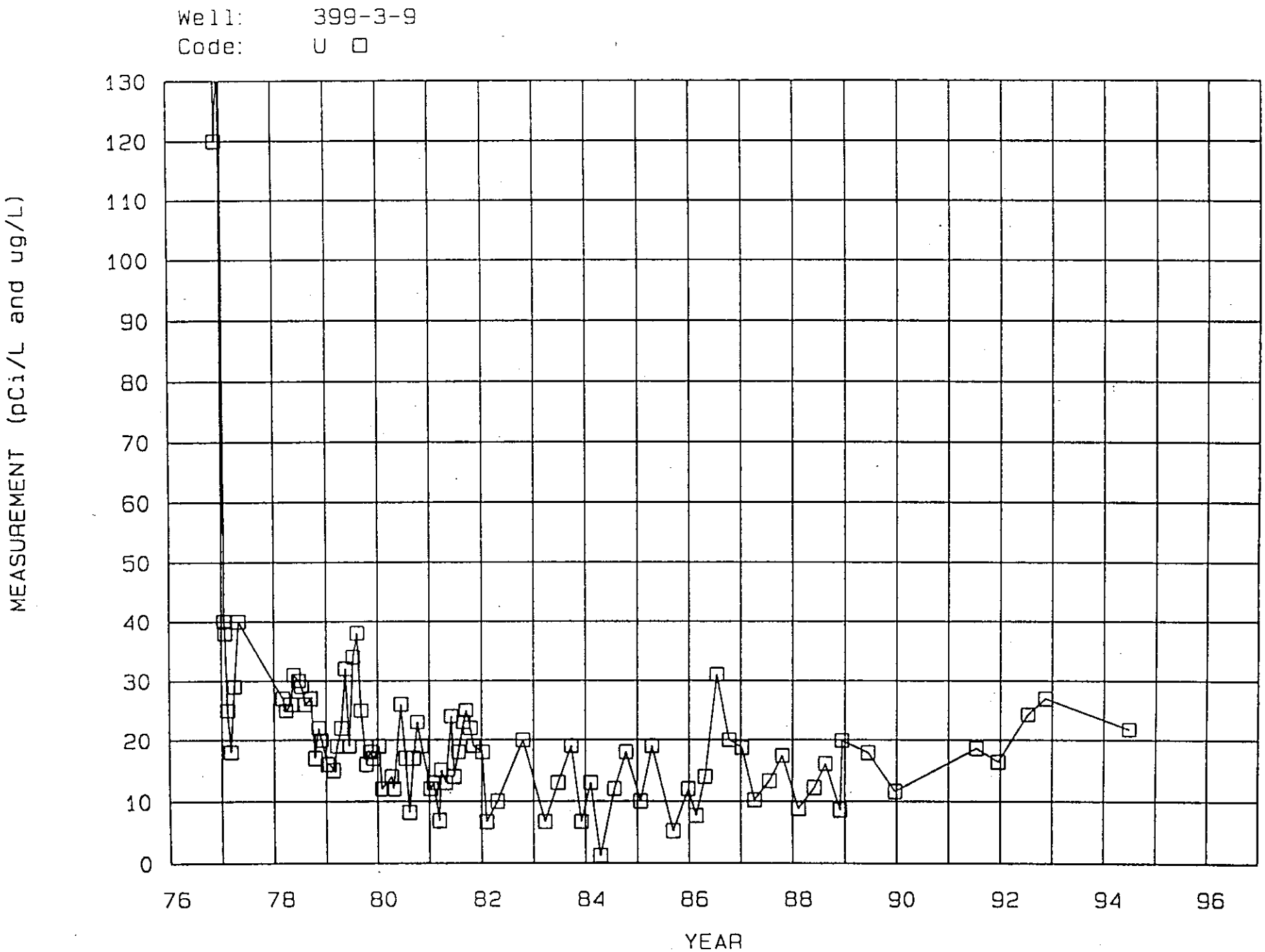
Uranium in Well 399-3-7



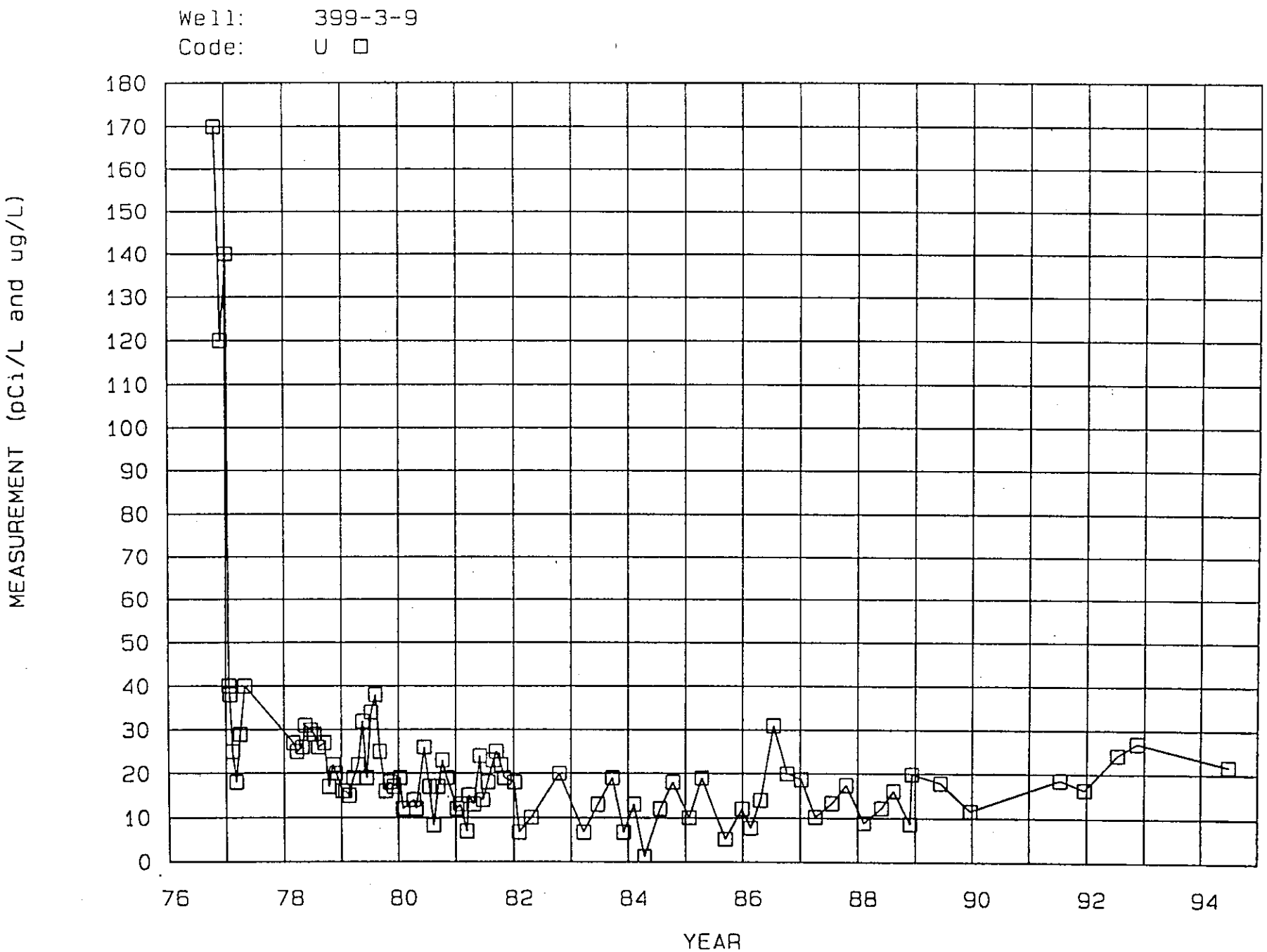
Uranium in Well 399-3-8



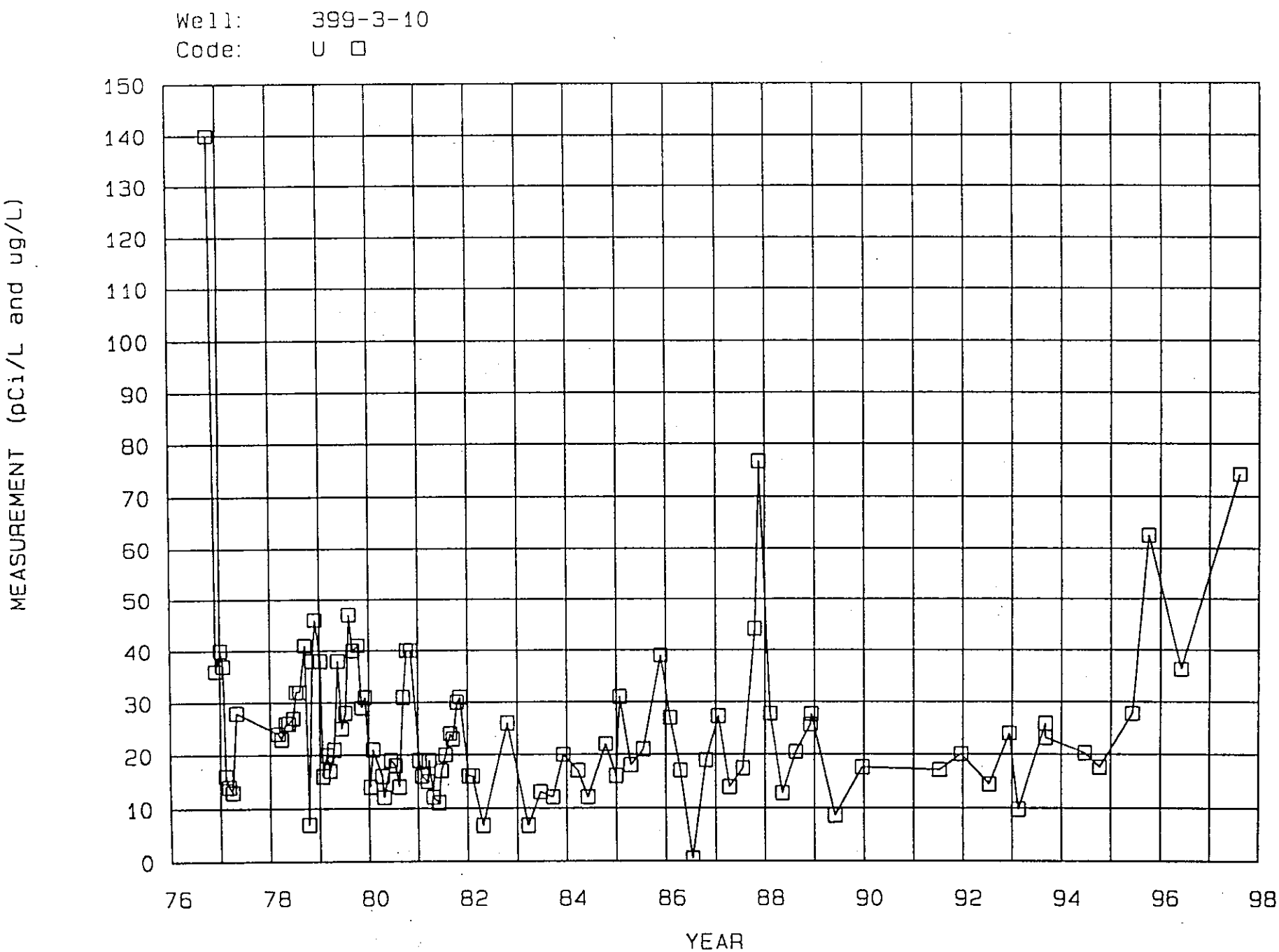
Uranium in Well 399-3-9



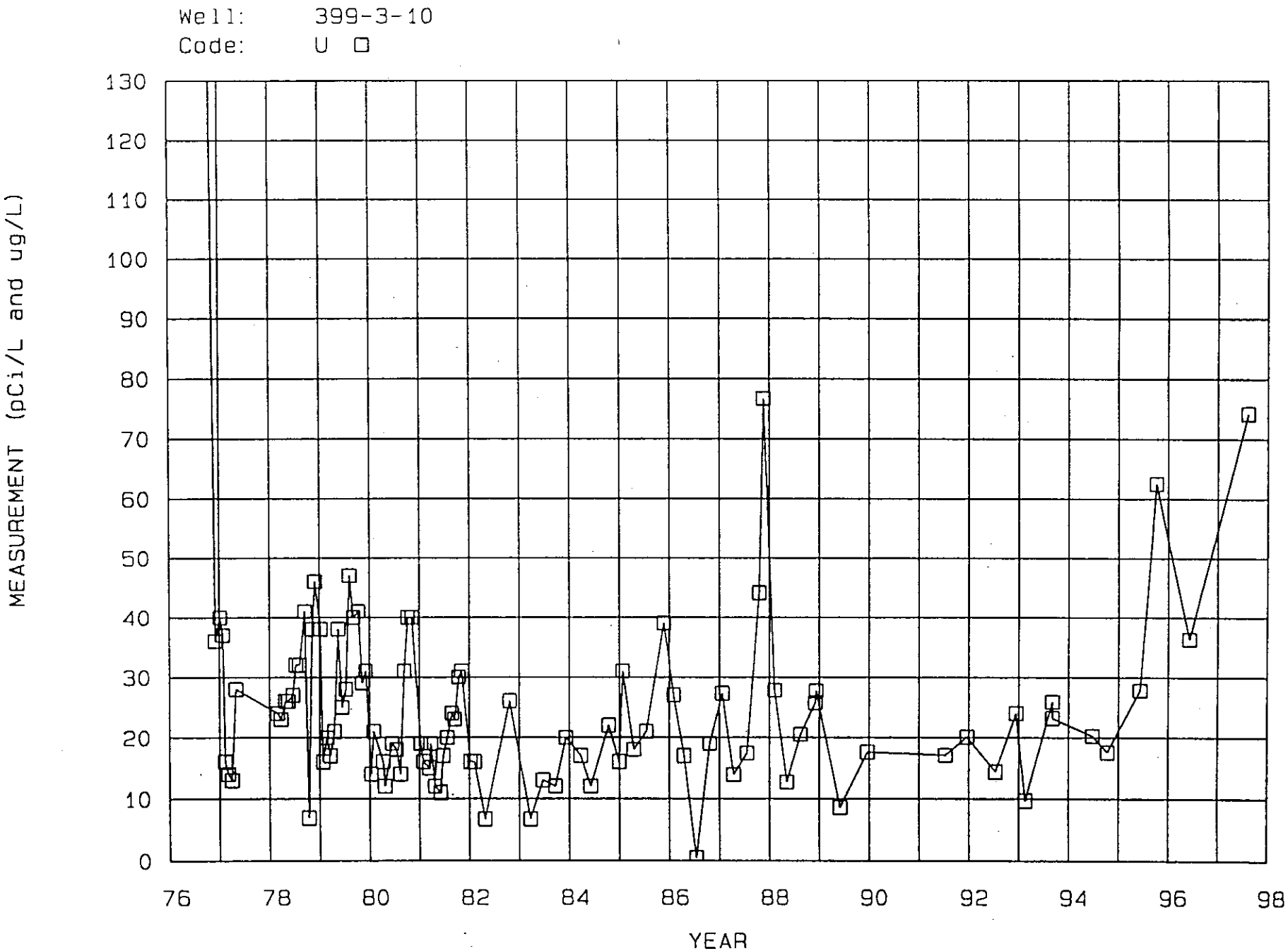
Uranium in Well 399-3-9



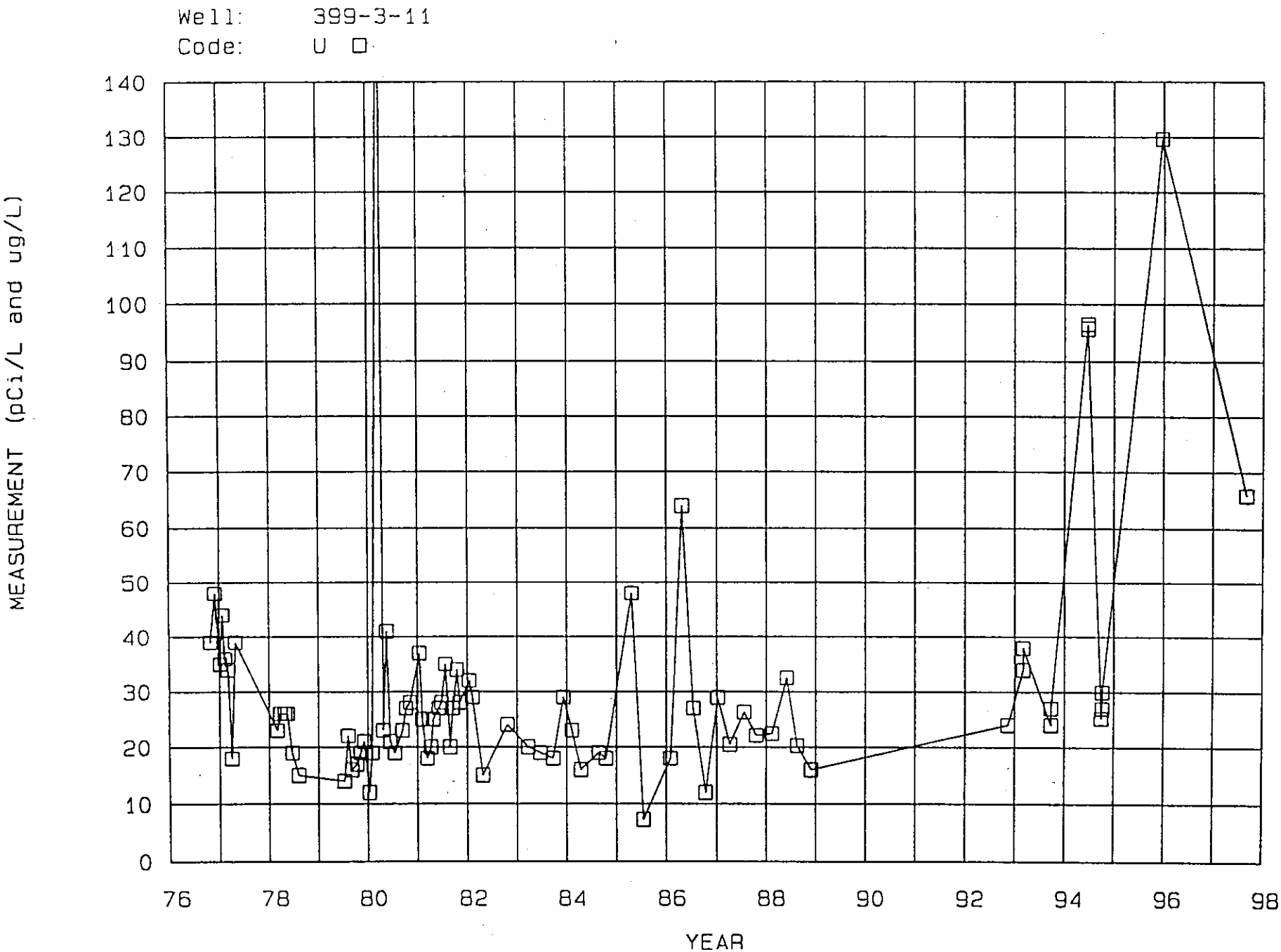
Uranium in Well 399-3-10



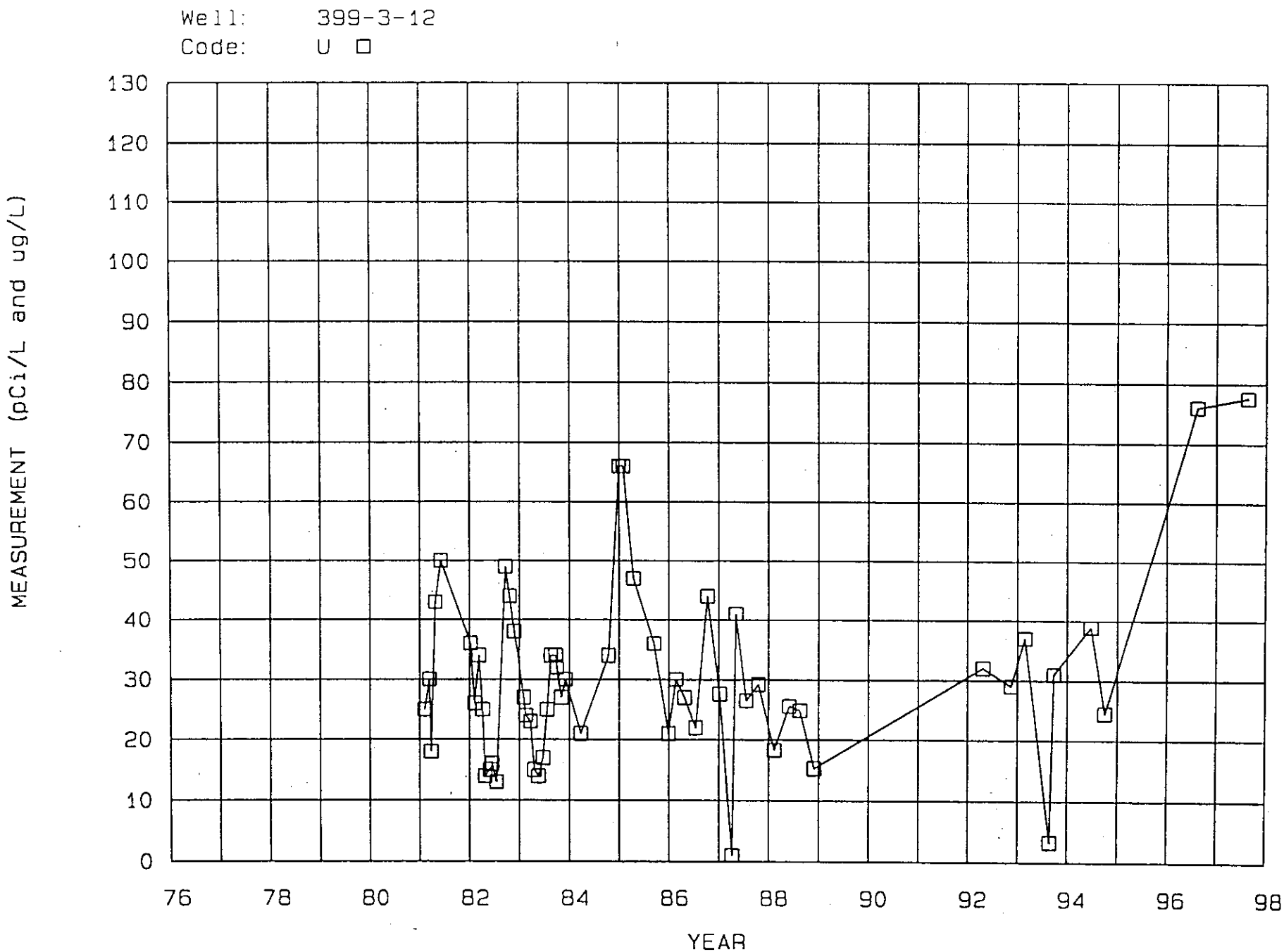
Uranium in Well 399-3-10



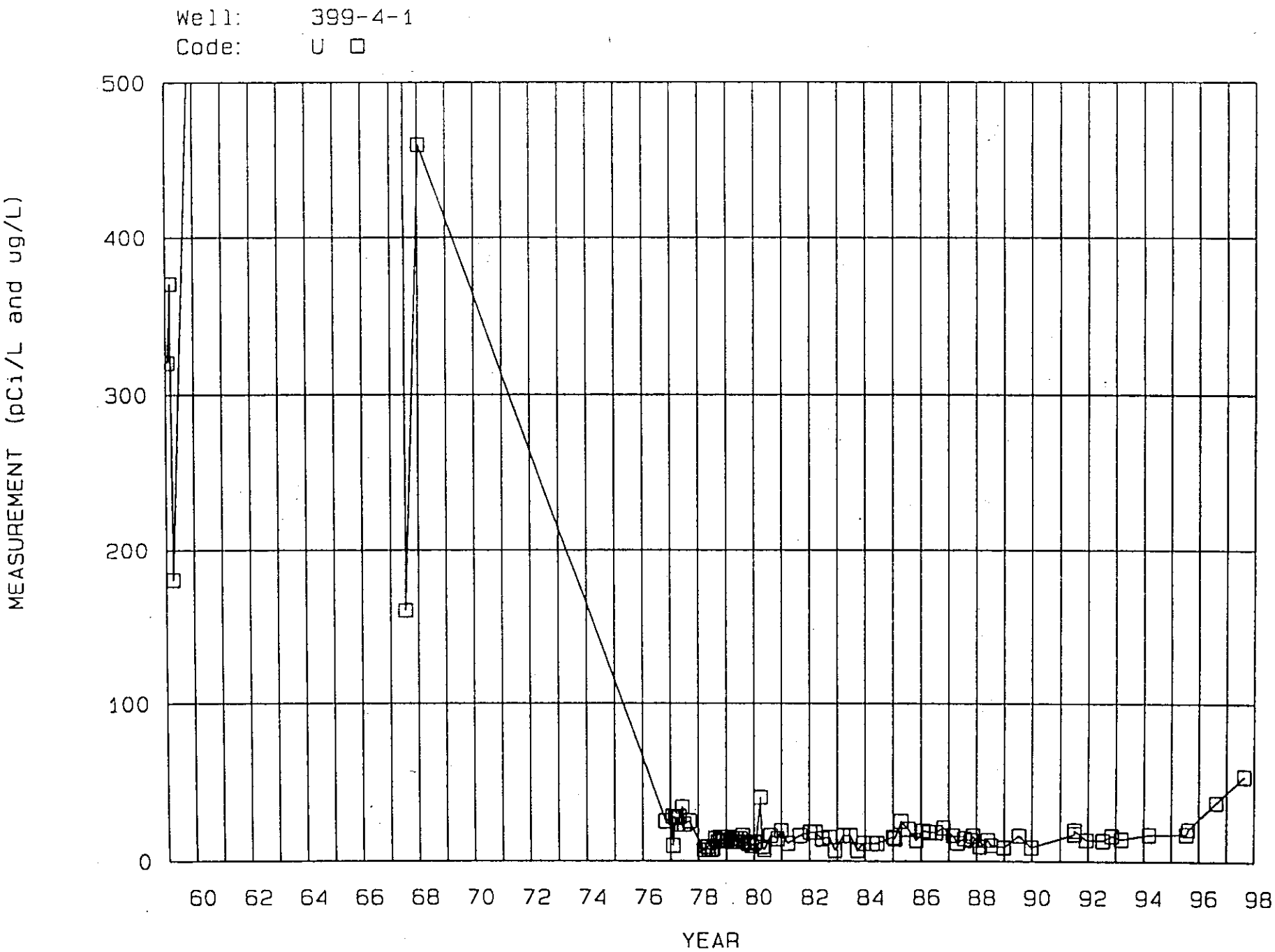
Uranium in Well 399-3-11



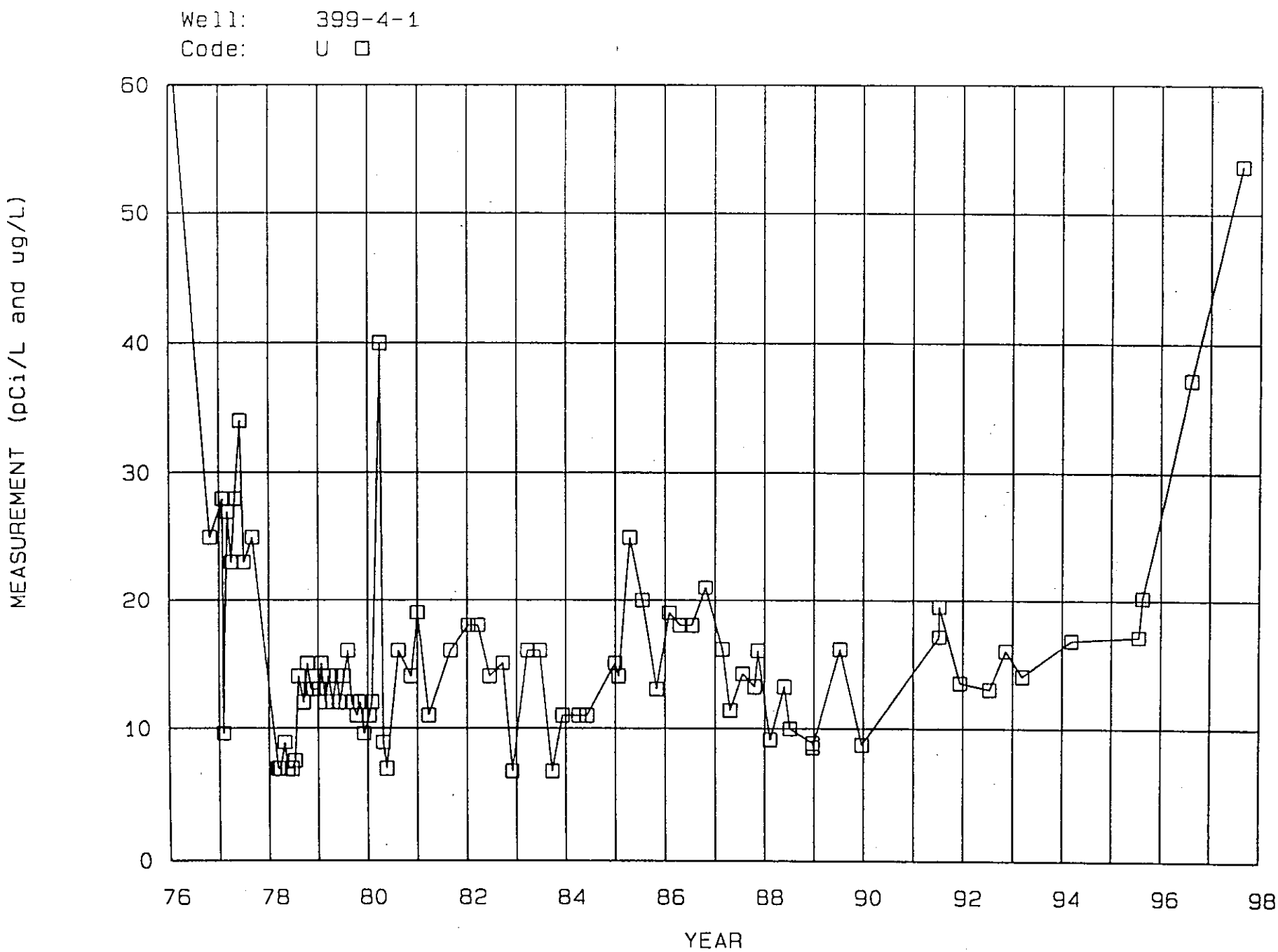
Uranium in Well 399-3-12



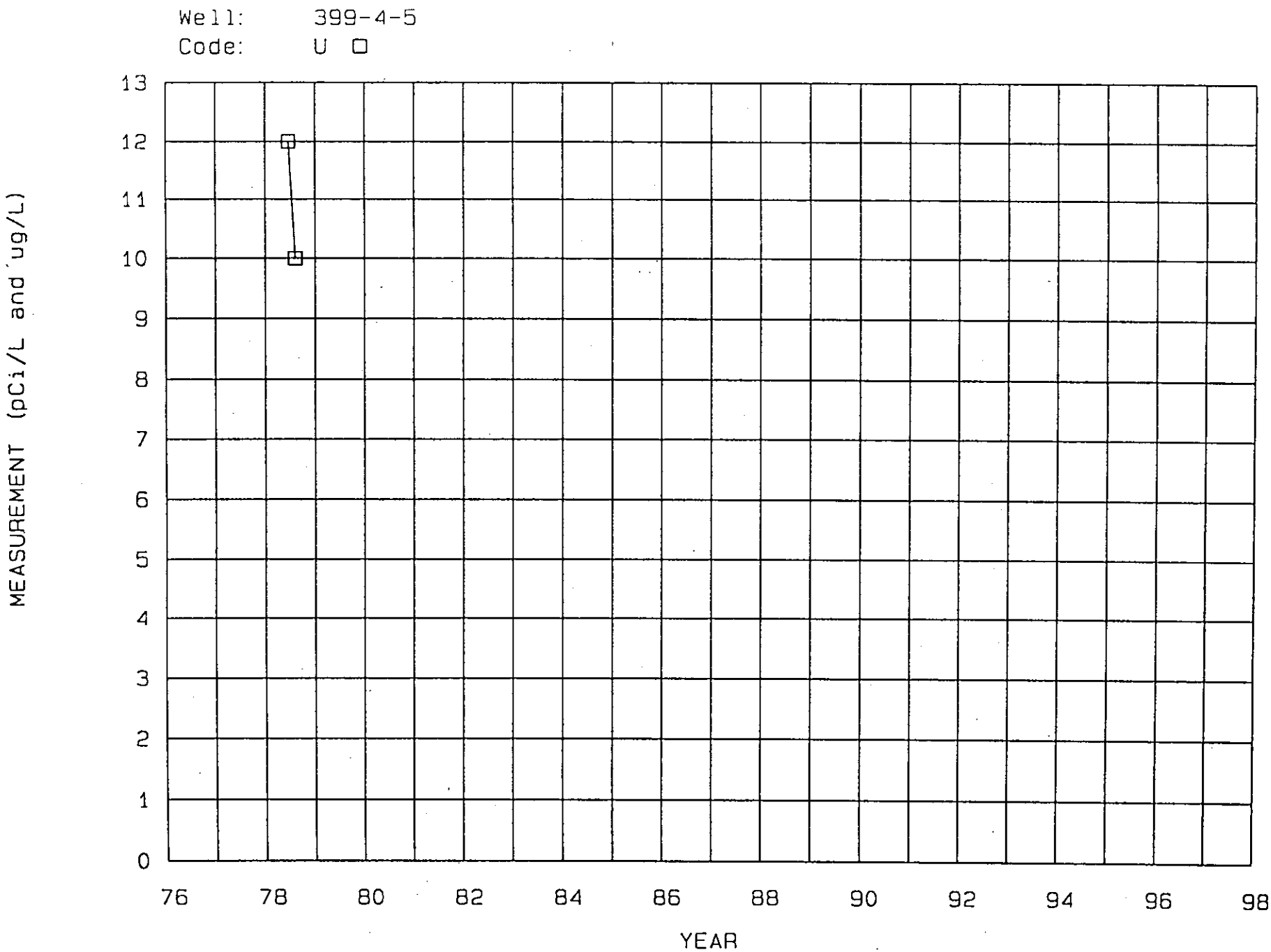
Uranium in Well 399-4-1



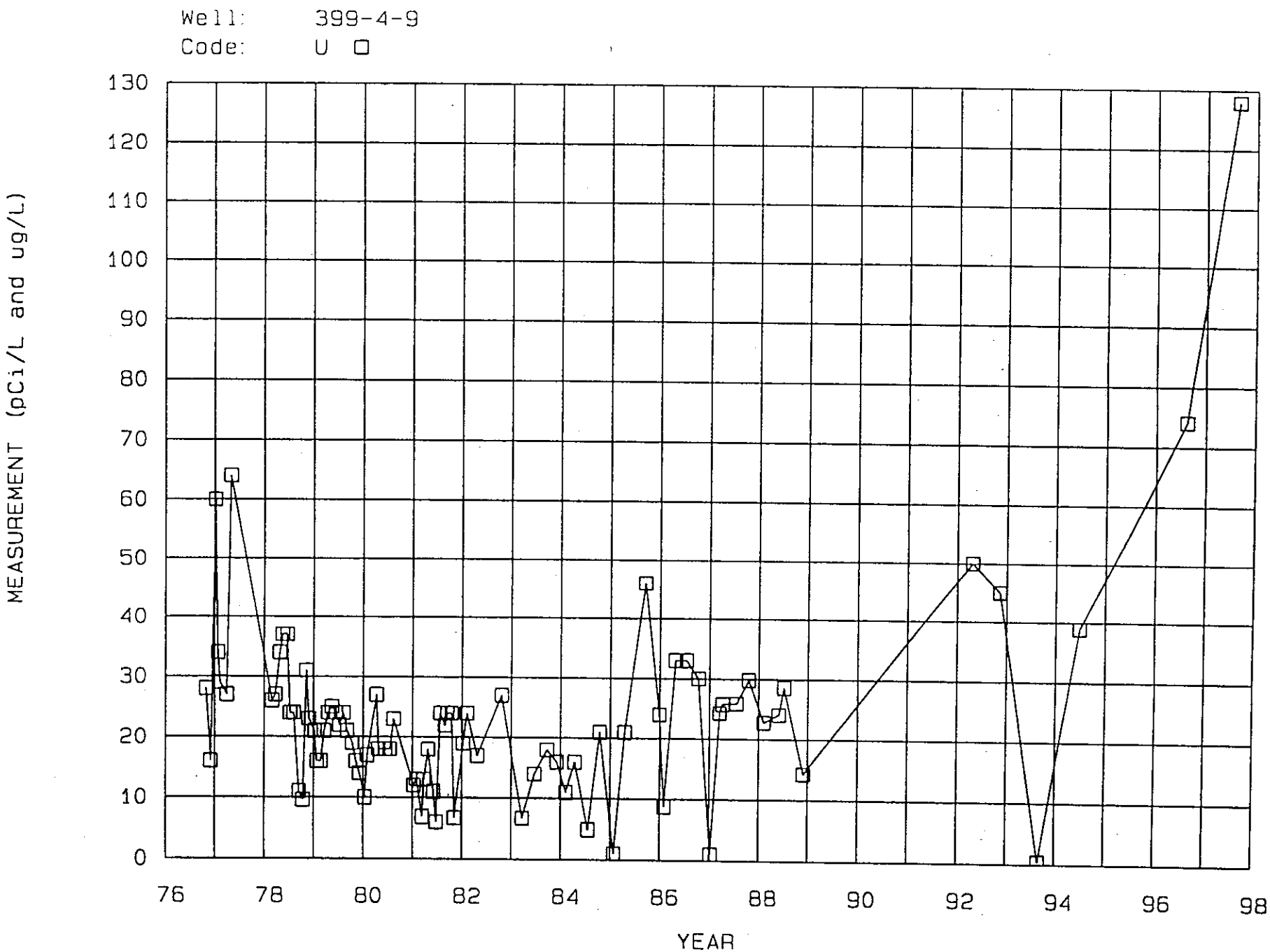
Uranium in Well 399-4-1



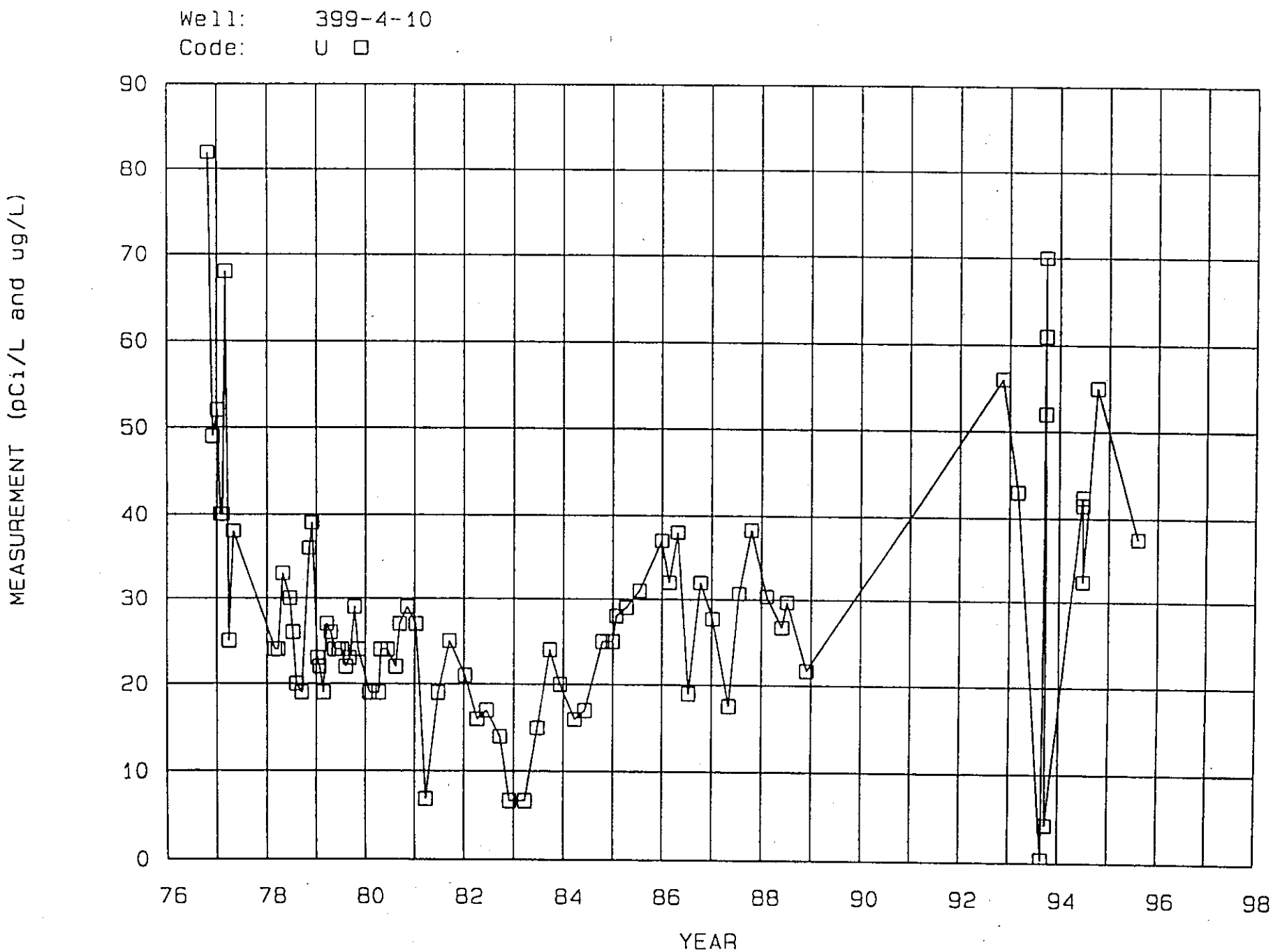
Uranium in Well 399-4-5



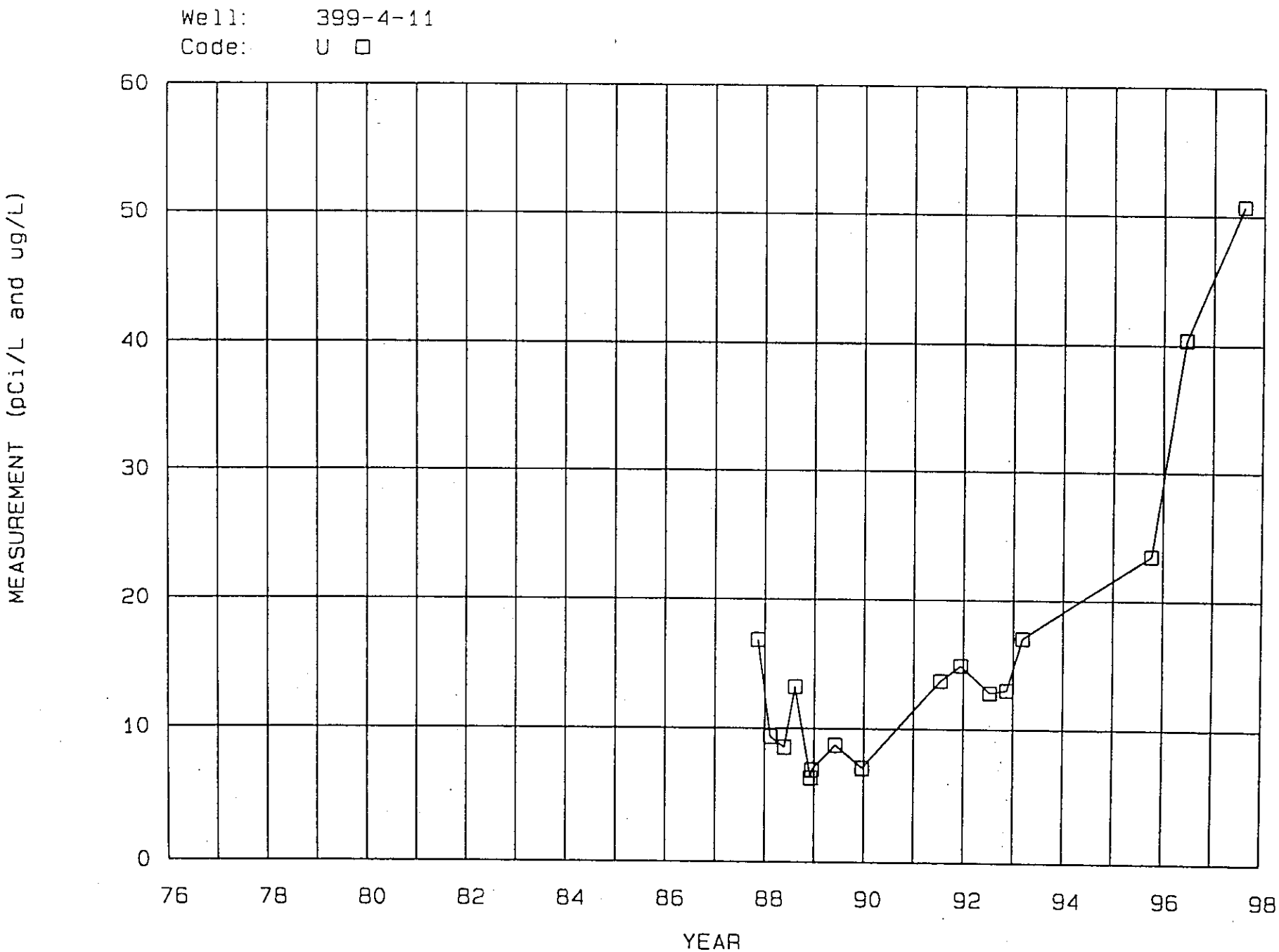
Uranium in Well 399-4-9



Uranium in Well 399-4-10



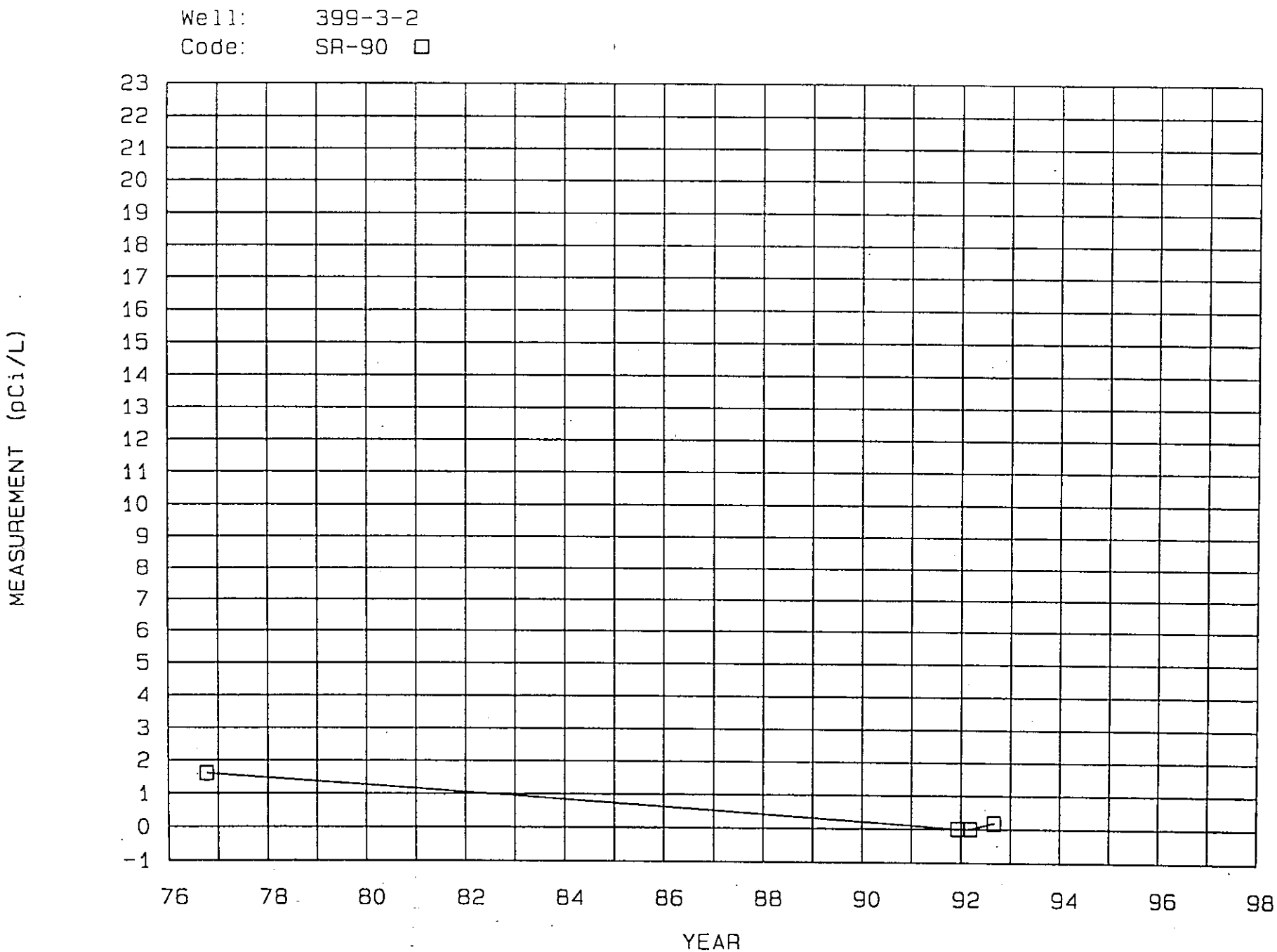
Uranium in Well 399-4-11



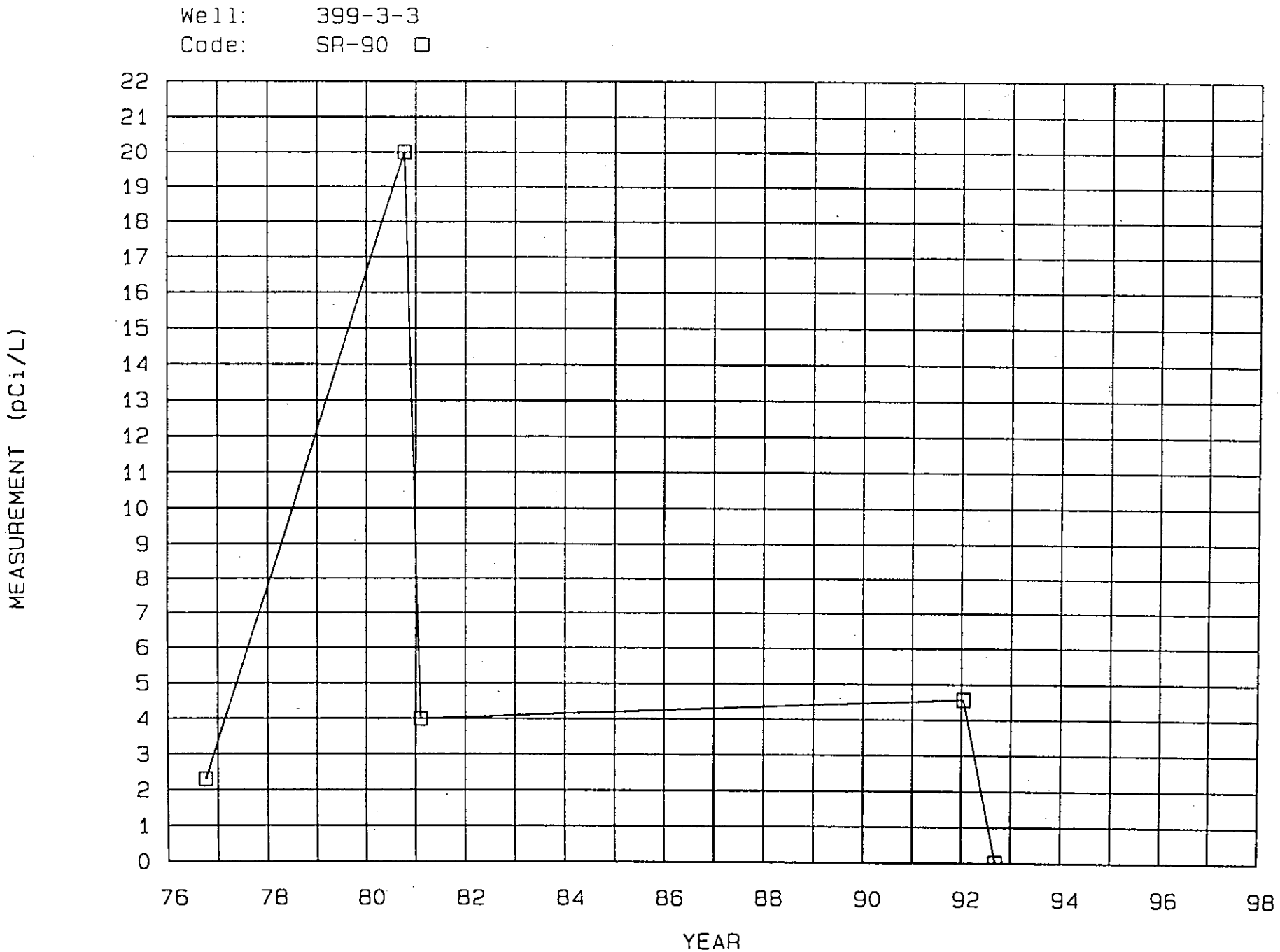
ATTACHMENT 5

Strontium-90 Trend Plots of Wells Within 305m of the 324 Building

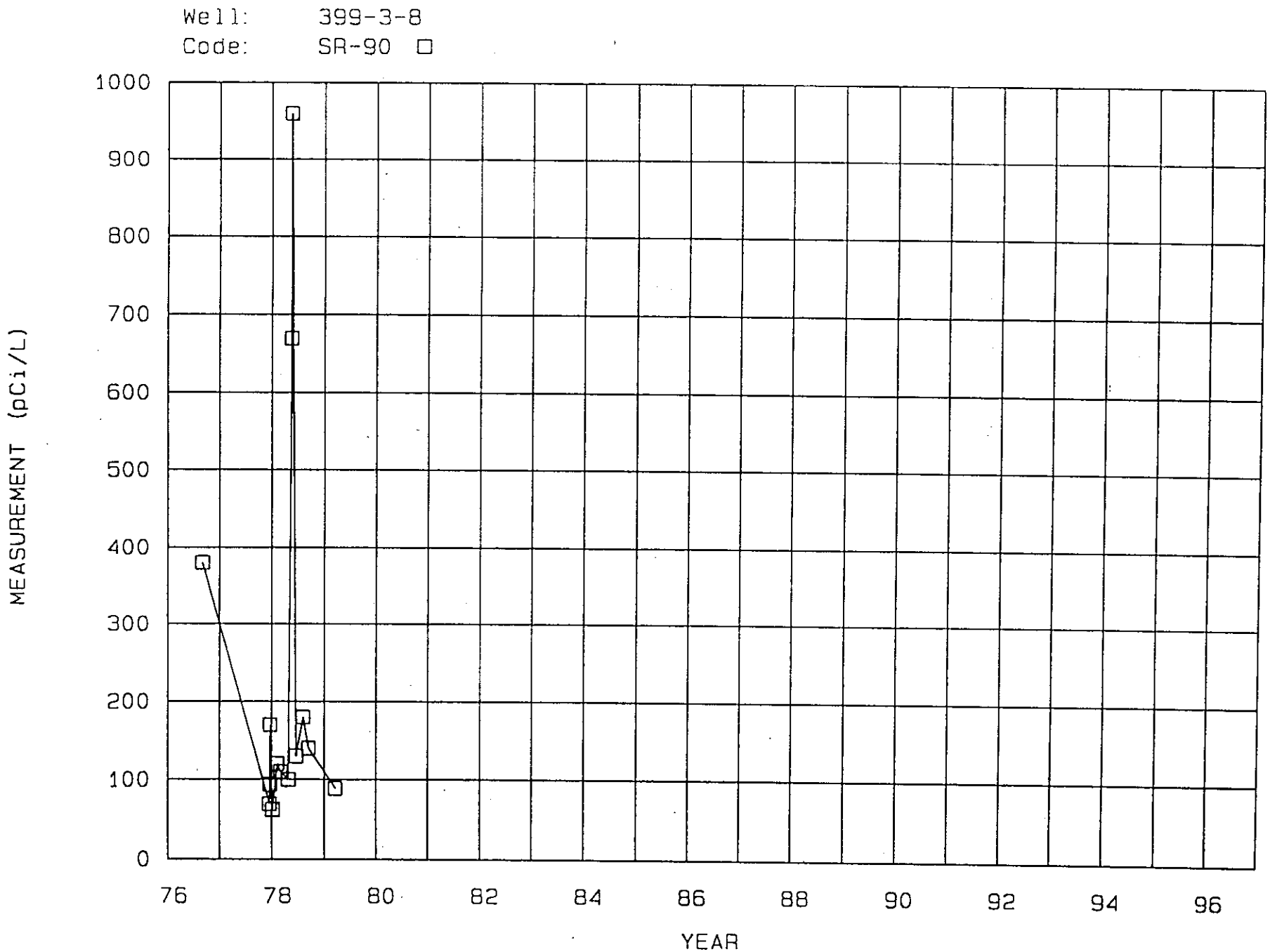
Sr-90 in 399-3-2



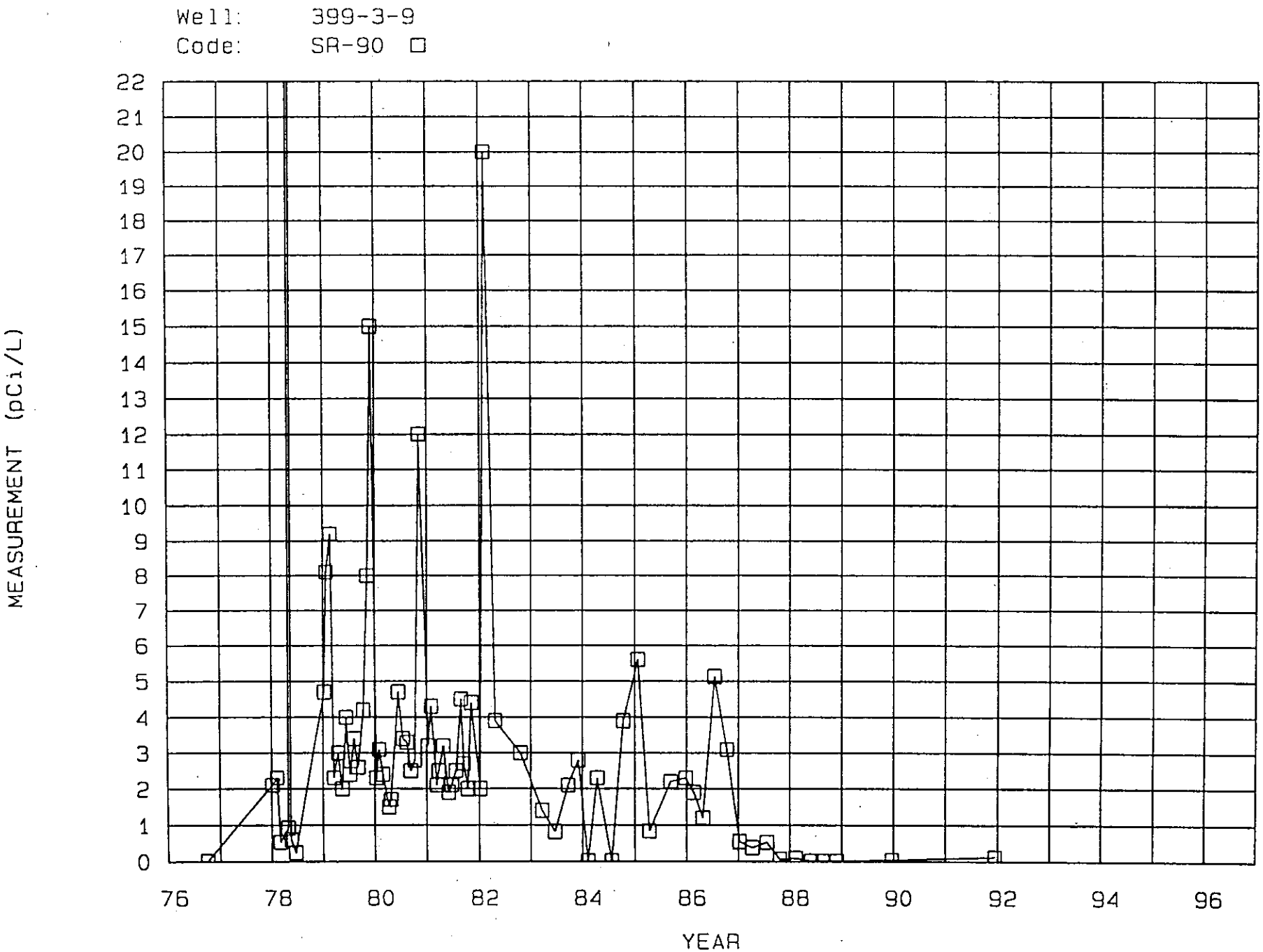
Sr-90 in 399-3-3



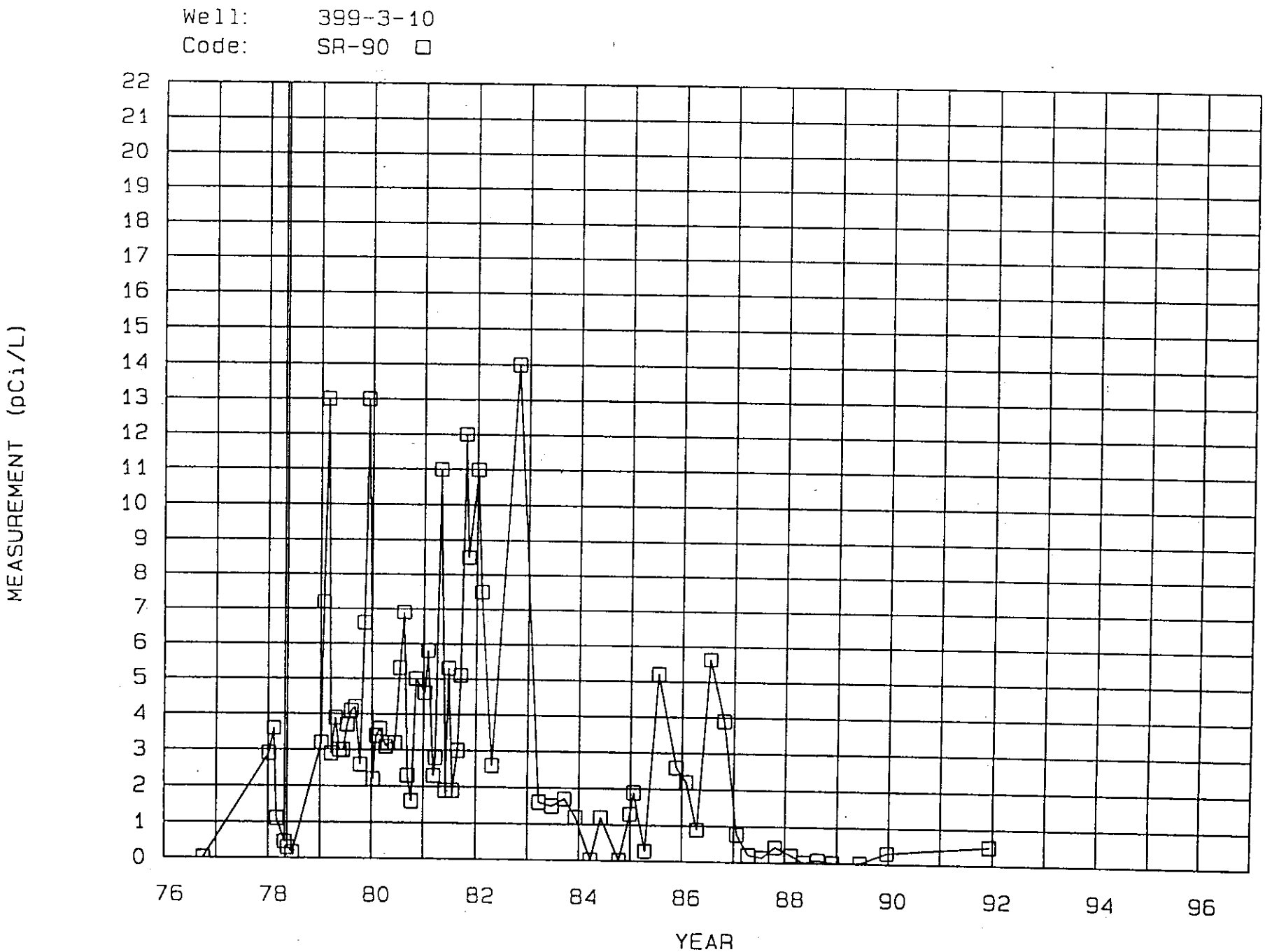
Sr-90 in Well 399-3-8



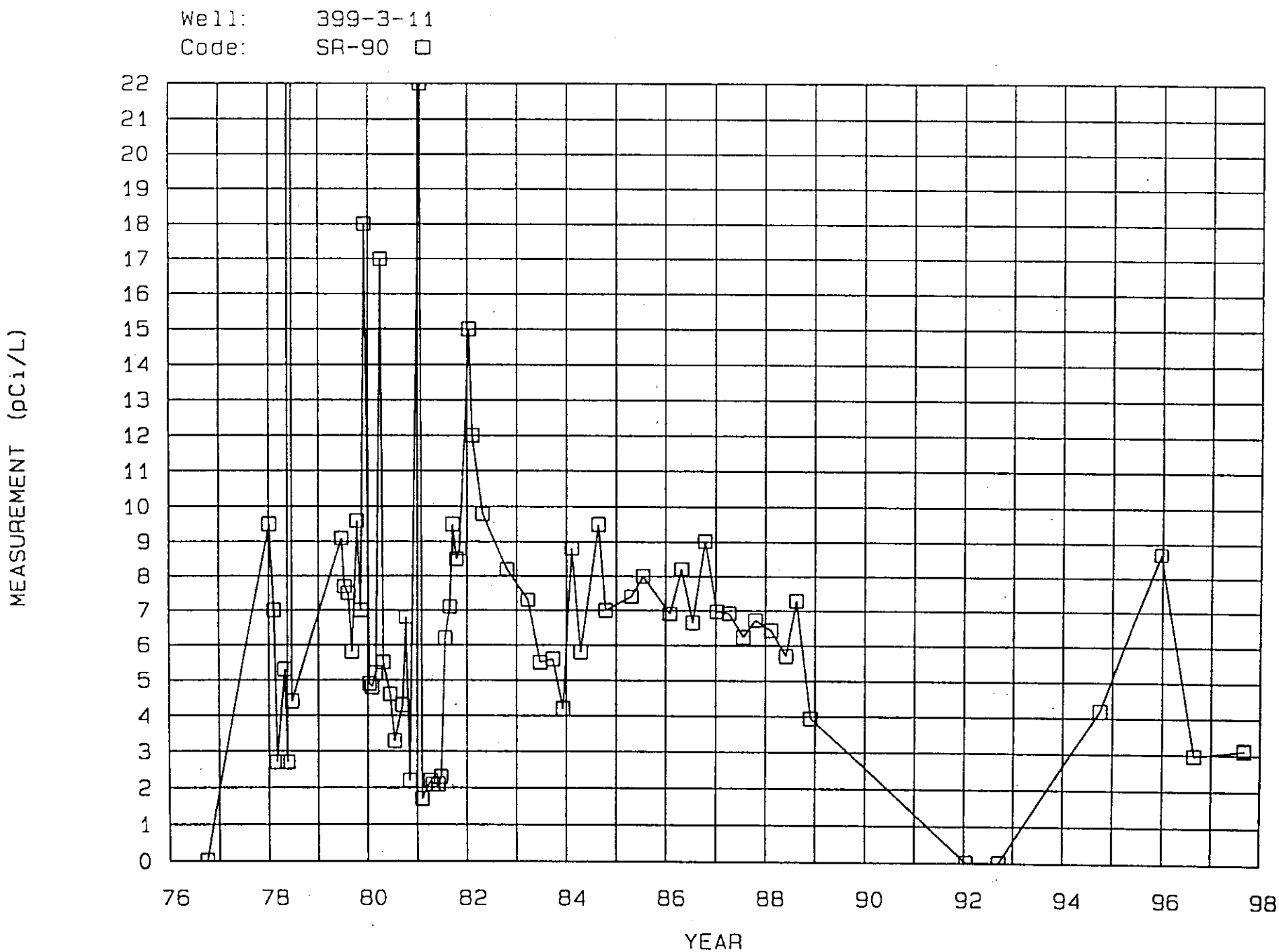
Sr-90 in Well 399-3-90



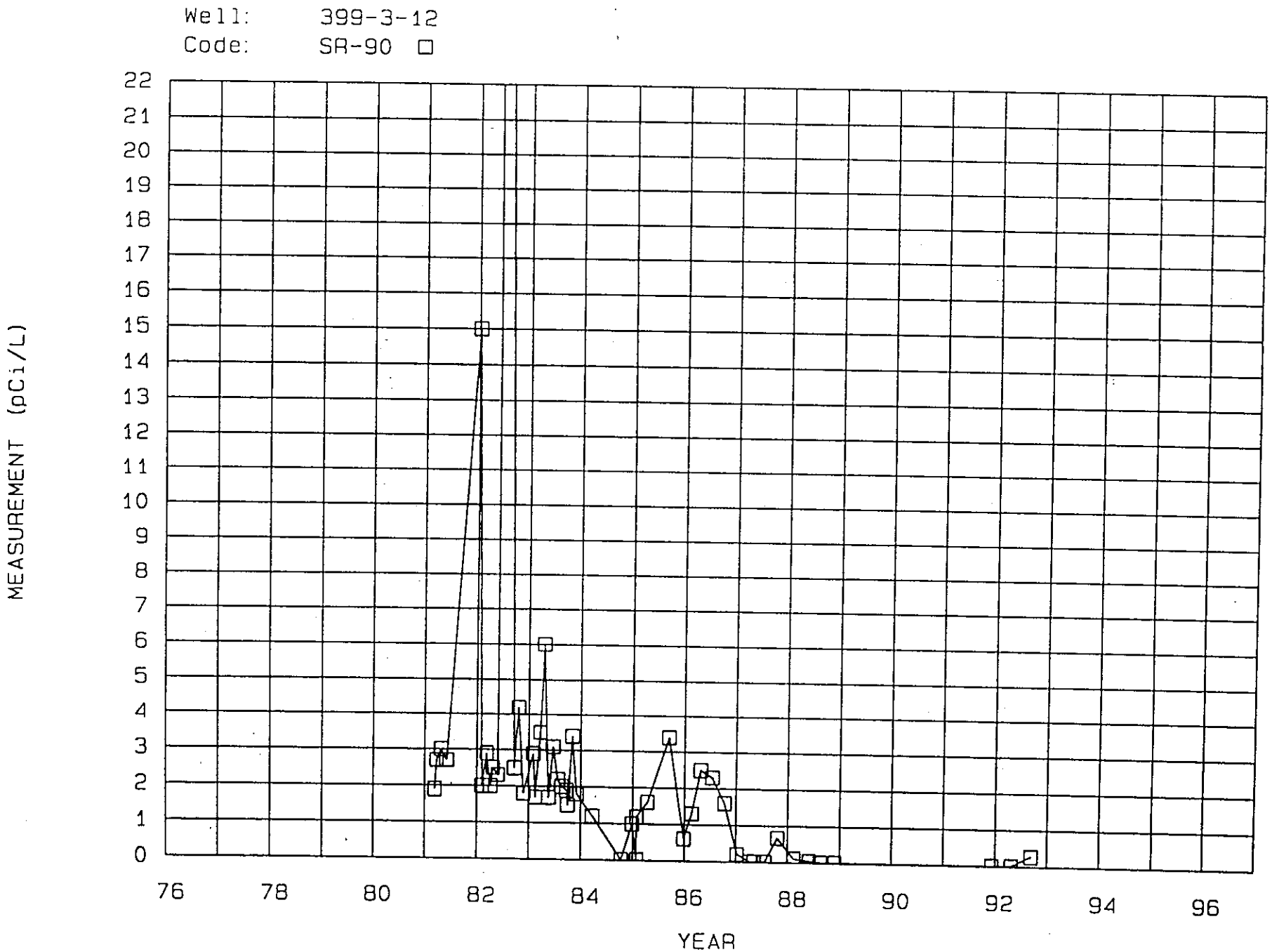
Sr-90 in Well 399-3-10



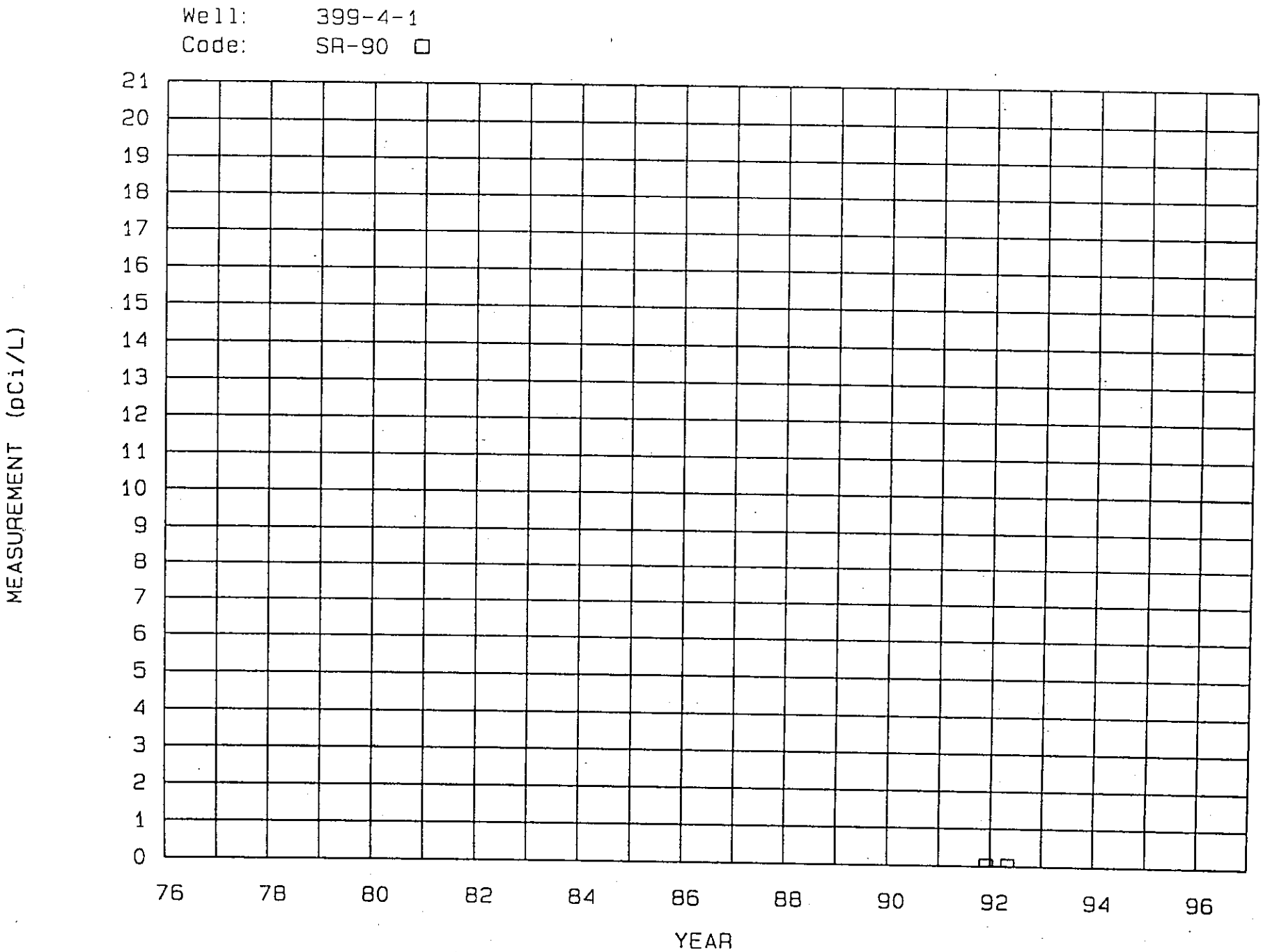
Sr-90 in Well 399-3-11



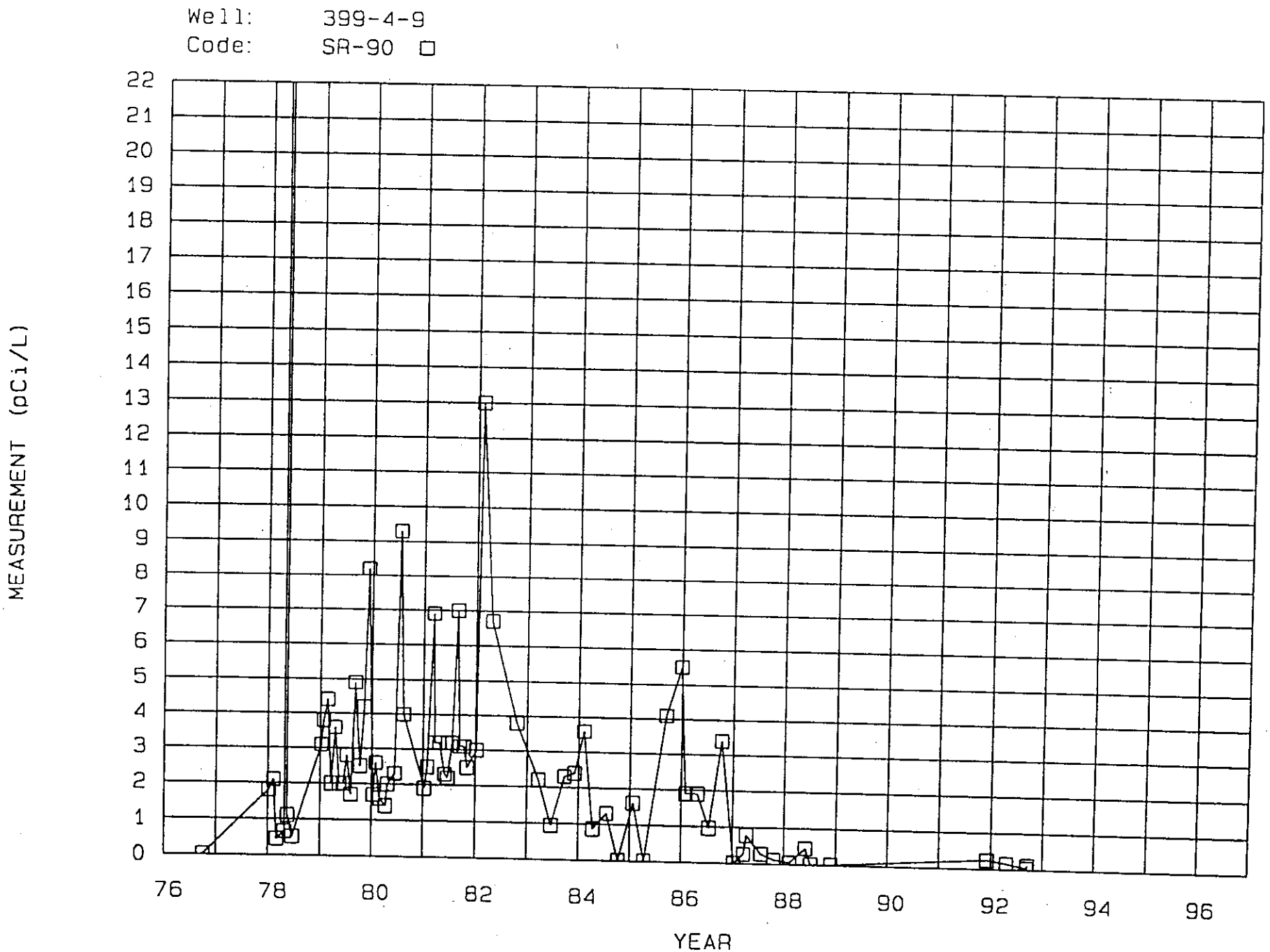
Sr-90 in Well 399-3-12



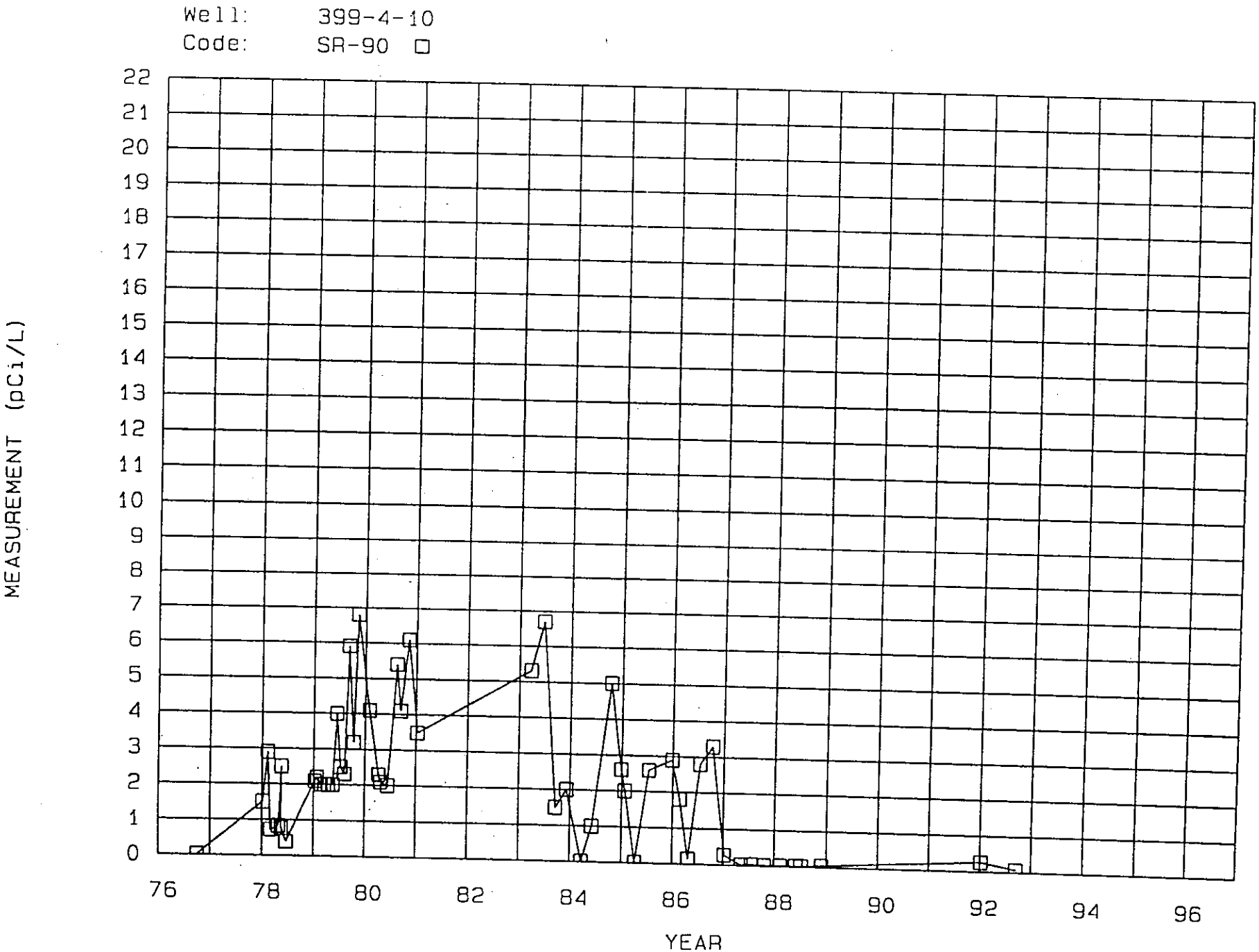
Sr-90 in Well 399-4-1



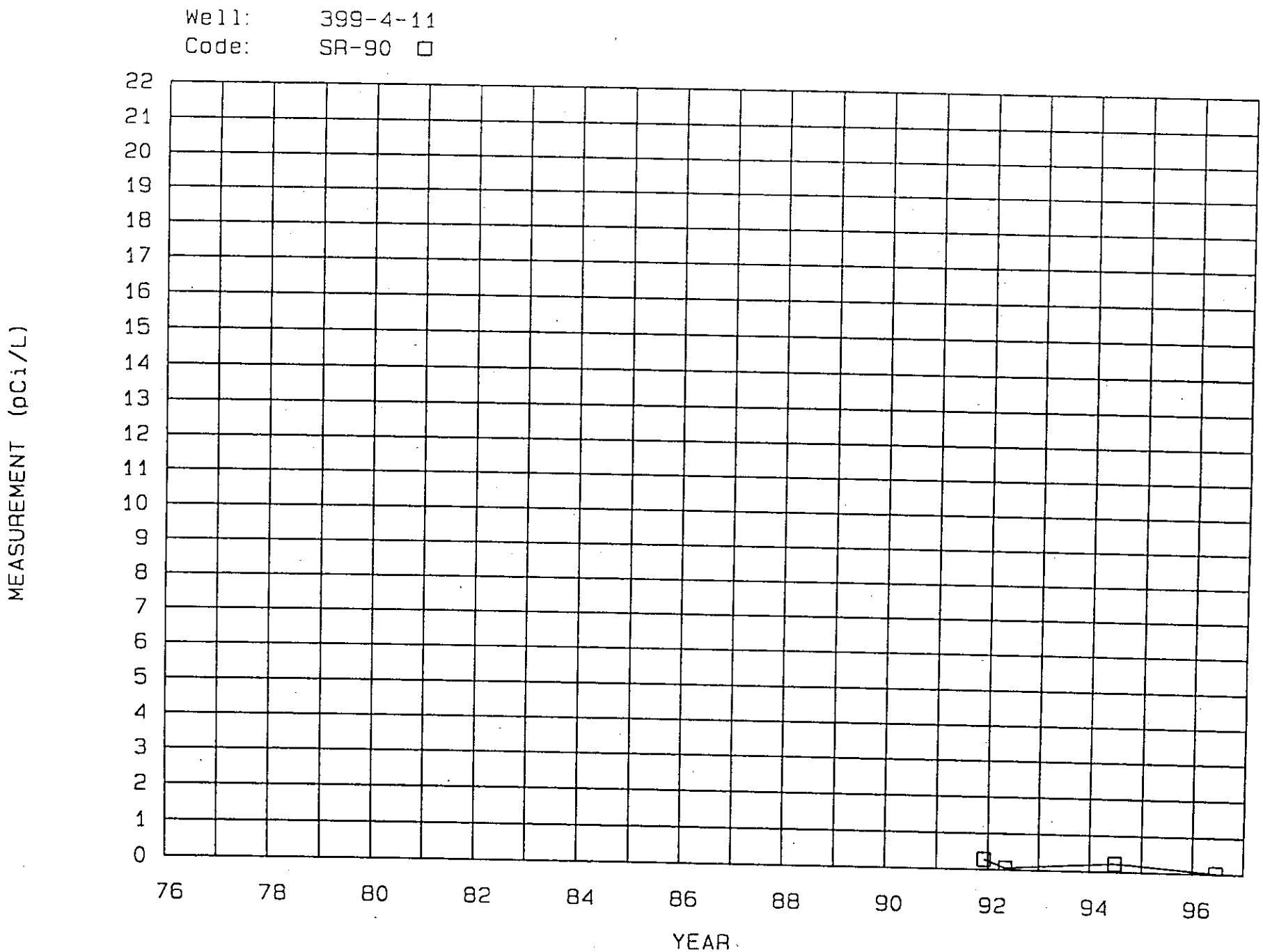
Sr-90 in Well 399-4-9



Sr-90 in Well 399-4-10



Sr-90 in Well 399-4-11



ATTACHMENT 6

Data Results for Wells 399-8-2 and 399-1-18A Upgradient and Greater Than 305m of the 324 Building

Results for upgradient well 399-8-2

GeoDAT Report - 2/05/98

Constituent Name	Well	Collect Date	Sample Number	Filtered	Method ID	Result	Error	Units	Analysis Date	Dilution	Lab	Comment
Barium	399-8-2	6/18/85	H000DMB4	N	34	42.00		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	45.00		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	36.00		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	38.00		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	38.00		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	37.00		ug/L	1/10/86		USTEST	
		1/20/86	H000DMC3	N	34	39.00		ug/L	2/05/86		USTEST	
		2/20/86	H000DMC5	N	34	38.00		ug/L	3/26/86		USTEST	
		3/20/86	H000DMC6	N	34	40.00		ug/L	4/11/86		USTEST	
		4/18/86	H000DMC8	N	34	38.00		ug/L	5/13/86		USTEST	
		5/20/86	H000DMC9	N	34	39.00		ug/L	6/20/86		USTEST	
		6/25/86	H000DMD0	N	34	38.00		ug/L	7/29/86		USTEST	
		7/16/86	H000DMD3	N	34	39.00		ug/L	8/20/86		USTEST	
		8/19/86	H000DMD4	N	34	39.00		ug/L	9/22/86		USTEST	
		9/22/86	H000DMD5	N	34	39.00		ug/L	10/28/86		USTEST	
			H000DMD5F	Y	34	36.00		ug/L	10/28/86		USTEST	
		10/22/86	H000DMD8	N	34	39.00		ug/L	11/04/86		USTEST	
			H000DMD8F	Y	34	37.00		ug/L	11/04/86		USTEST	
		11/13/86	H000DMD9	N	34	38.00		ug/L	11/20/86		USTEST	
			H000DMD9F	Y	34	38.00		ug/L	11/20/86		USTEST	
		12/08/86	H000DMF0	N	34	38.00		ug/L	12/16/86		USTEST	
			H000DMF0F	Y	34	38.00		ug/L	12/15/86		USTEST	
		1/16/87	H000DMF2	N	34	38.00		ug/L	1/28/87		USTEST	
			H000DMF2F	Y	34	38.00		ug/L	1/28/87		USTEST	
		2/20/87	H000DMF3	N	34	39.00		ug/L	2/27/87		USTEST	
			H000DMF3F	Y	34	39.00		ug/L	2/27/87		USTEST	
		3/29/87	H000DMF4	N	34	41.00		ug/L	4/23/87		USTEST	
			H000DMF4F	Y	34	41.00		ug/L	4/23/87		USTEST	
		4/15/87	H000DMF6	N	34	40.00		ug/L	5/11/87		USTEST	
			H000DMF6F	Y	34	40.00		ug/L	5/11/87		USTEST	
		6/19/87	H000DMF7	N	34	43.00		ug/L	7/22/87		USTEST	
			H000DMF7F	Y	34	39.00		ug/L	7/22/87		USTEST	
		8/18/87	H000DMF9	N	34	45.00		ug/L	9/18/87		USTEST	
			H000DMF9F	Y	34	42.00		ug/L	9/22/87		USTEST	
		11/13/87	H000DMG1	N	34	43.00		ug/L	12/03/87		USTEST	
			H000DMG1F	Y	34	43.00		ug/L	12/11/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Barium	399-8-2	5/10/88	H000DMG4	N	34	46.00		ug/L	5/13/88		USTEST	
			H000DMG4F	Y	34	45.00		ug/L	5/20/88		USTEST	
		8/18/88	H000DMG6	N	34	45.00		ug/L	9/14/88		USTEST	
			H000DMG6F	Y	34	46.00		ug/L	9/14/88		USTEST	
		12/09/88	H000DMG8	N	34	35.00		ug/L	12/22/88		USTEST	
			H000DMG8F	Y	34	38.00		ug/L	12/16/88		USTEST	
		6/13/89	H000DMG9	N	34	38.00	4.69	ug/L	6/26/89		USTEST	
			H000DMG9F	Y	34	37.00	4.60	ug/L	6/26/89		USTEST	
		12/18/91	B00KC6	N	34	34.00	4.69	ug/L	2/26/92	0	DATACH	
		1/07/92	B01DY2	N	4	41.40		ug/L			SKINER	
		5/06/92	B062Y4	N	4	41.20		ug/L			SKINER	
			B062Y5	Y	4	37.70		ug/L			SKINER	
		9/10/92	B07615	N	4	35.20		ug/L			SKINER	
			B07616	Y	4	37.10		ug/L			SKINER	
Cadmium	399-8-2	6/18/85	H000DMB4	N	34	2.00 U		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	2.00 U		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	3.00		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	2.00 U		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	2.00 U		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	2.00 U		ug/L	1/10/86		USTEST	
		1/20/86	H000DMC3	N	34	2.00 U		ug/L	2/05/86		USTEST	
		2/20/86	H000DMC5	N	34	2.00 U		ug/L	3/26/86		USTEST	
		3/20/86	H000DMC6	N	34	2.00 U		ug/L	4/11/86		USTEST	
		4/18/86	H000DMC8	N	34	2.00 U		ug/L	5/13/86		USTEST	
		5/20/86	H000DMC9	N	34	2.00 U		ug/L	6/20/86		USTEST	
		6/25/86	H000DMD0	N	34	2.00 U		ug/L	7/29/86		USTEST	
		7/16/86	H000DMD3	N	34	2.00 U		ug/L	8/20/86		USTEST	
		8/19/86	H000DMD4	N	34	2.00 U		ug/L	9/22/86		USTEST	
		9/22/86	H000DMD5	N	34	2.00 U		ug/L	10/28/86		USTEST	
			H000DMD5F	Y	34	2.00 U		ug/L	10/28/86		USTEST	
		10/22/86	H000DMD8	N	34	2.00 U		ug/L	11/04/86		USTEST	
			H000DMD8F	Y	34	2.00 U		ug/L	11/04/86		USTEST	
		11/13/86	H000DMD9	N	34	2.00 U		ug/L	11/20/86		USTEST	
			H000DMD9F	Y	34	2.00 U		ug/L	11/20/86		USTEST	
		12/08/86	H000DMF0	N	34	2.00 U		ug/L	12/16/86		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Filtered	Method ID	Result	Error	Units	Analysis Date	Dilution	Lab	Comment
Cadmium	399-8-2	12/08/86	H000DMF0F	Y	34	2.00 U		ug/L	12/15/86		USTEST	
		1/16/87	H000DMF2	N	34	2.00 U		ug/L	1/28/87		USTEST	
			H000DMF2F	Y	34	2.00 U		ug/L	1/28/87		USTEST	
		2/20/87	H000DMF3	N	34	2.00 U		ug/L	2/27/87		USTEST	
			H000DMF3F	Y	34	2.00 U		ug/L	2/27/87		USTEST	
		3/29/87	H000DMF4	N	34	2.00 U		ug/L	4/23/87		USTEST	
			H000DMF4F	Y	34	2.00 U		ug/L	4/23/87		USTEST	
		4/15/87	H000DMF6	N	34	2.00 U		ug/L	5/11/87		USTEST	
			H000DMF6F	Y	34	2.00 U		ug/L	5/11/87		USTEST	
		6/19/87	H000DMF7	N	34	2.00 U		ug/L	7/22/87		USTEST	
			H000DMF7F	Y	34	2.00 U		ug/L	7/22/87		USTEST	
		8/18/87	H000DMF9	N	34	2.00 U		ug/L	9/18/87		USTEST	
			H000DMF9F	Y	34	2.00		ug/L	9/22/87		USTEST	
		11/13/87	H000DMG1	N	34	2.00 U		ug/L	12/03/87		USTEST	
			H000DMG1F	Y	34	2.00 U		ug/L	12/11/87		USTEST	
		5/10/88	H000DMG4	N	34	2.00 U		ug/L	5/13/88		USTEST	
			H000DMG4F	Y	34	2.00 U		ug/L	5/20/88		USTEST	
		8/18/88	H000DMG6	N	34	2.00 U		ug/L	9/14/88		USTEST	
			H000DMG6F	Y	34	2.00 U		ug/L	9/14/88		USTEST	
		12/09/88	H000DMG8	N	34	2.00 U		ug/L	12/22/88		USTEST	
			H000DMG8F	Y	34	2.00 U		ug/L	12/16/88		USTEST	
		6/13/89	H000DMG9	N	34	2.00 U	1.38	ug/L	6/26/89		USTEST	
			H000DMG9F	Y	34	2.00 U	1.38	ug/L	6/26/89		USTEST	
		12/18/91	B00KC6	N	34	U			2/26/92	0	DATACH	
		1/07/92	B01DY2	N	4	1.00		ug/L			SKINER	
		5/06/92	B062Y4	N	4	2.00		ug/L			SKINER	
			B062Y5	Y	4	2.00		ug/L			SKINER	
		9/10/92	B07615	N	4	1.50		ug/L			SKINER	
			B07616	Y	4	1.50		ug/L			SKINER	
Cesium-137	399-8-2	8/02/76	H000DM57	N	77	11.00		pCi/L			USTEST	
		1/26/77	H000DM58	N	77	.53		pCi/L			USTEST	
		10/31/77	H000DM69	N	77	20.00		pCi/L			USTEST	
		1/11/78	H000DM72	N	77	10.00		pCi/L			USTEST	
		6/20/78	H000DM74	N	77	31.00		pCi/L			USTEST	
		1/16/87	H000DMF1	N	77	.35 U	4.67	pCi/L	2/12/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Cesium-137	399-8-2	4/15/87	H000DMF5	N	77	2.67 U	6.80	pCi/L	5/06/87		USTEST	
		7/22/87	H000DMF8	N	77	0.00 U	6.42	pCi/L	8/10/87		USTEST	
		10/19/87	H000DMG0	N	77	-3.79 U	6.40	pCi/L	10/30/87		USTEST	
		1/07/92	B01DY2	N	232	9.02 U		pCi/L			TMA	
		5/06/92	B062Y4	N	232	11.00 U		pCi/L			TMA	
		9/10/92	B07615	N	232	10.00 UJ		pCi/L			TMA	
Chromium	399-8-2	6/18/85	H000DMB4	N	34	10.00 U		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	10.00 U		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	10.00 U		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	10.00 U		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	10.00 U		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	10.00 U		ug/L	1/10/86		USTEST	
		1/20/86	H000DMC3	N	34	10.00 U		ug/L	2/05/86		USTEST	
		2/20/86	H000DMC5	N	34	10.00 U		ug/L	3/26/86		USTEST	
		3/20/86	H000DMC6	N	34	10.00 U		ug/L	4/11/86		USTEST	
		4/18/86	H000DMC8	N	34	10.00 U		ug/L	5/13/86		USTEST	
		5/20/86	H000DMC9	N	34	10.00 U		ug/L	6/20/86		USTEST	
		6/25/86	H000DMD0	N	34	10.00 U		ug/L	7/29/86		USTEST	
		7/16/86	H000DMD3	N	34	10.00 U		ug/L	8/20/86		USTEST	
		8/19/86	H000DMD4	N	34	10.00 U		ug/L	9/22/86		USTEST	
		9/22/86	H000DMD5	N	34	10.00 U		ug/L	10/28/86		USTEST	
			H000DMD5F	Y	34	10.00 U		ug/L	10/28/86		USTEST	
		10/22/86	H000DMD8	N	34	10.00 U		ug/L	11/04/86		USTEST	
			H000DMD8F	Y	34	10.00 U		ug/L	11/04/86		USTEST	
		11/13/86	H000DMD9	N	34	10.00 U		ug/L	11/20/86		USTEST	
			H000DMD9F	Y	34	10.00 U		ug/L	11/20/86		USTEST	
		12/08/86	H000DMF0	N	34	10.00 U		ug/L	12/16/86		USTEST	
			H000DMF0F	Y	34	10.00 U		ug/L	12/15/86		USTEST	
		1/16/87	H000DMF2	N	34	10.00 U		ug/L	1/28/87		USTEST	
			H000DMF2F	Y	34	10.00 U		ug/L	1/28/87		USTEST	
		2/20/87	H000DMF3	N	34	10.00 U		ug/L	2/27/87		USTEST	
			H000DMF3F	Y	34	10.00 U		ug/L	2/27/87		USTEST	
		3/29/87	H000DMF4	N	34	10.00 U		ug/L	4/23/87		USTEST	
			H000DMF4F	Y	34	10.00 U		ug/L	4/23/87		USTEST	
		4/15/87	H000DMF6	N	34	10.00 U		ug/L	5/11/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Chromium	399-8-2	4/15/87	H000DMF6F	Y	34	10.00 U		ug/L	5/11/87		USTEST	
		6/19/87	H000DMF7	N	34	10.00 U		ug/L	7/22/87		USTEST	
			H000DMF7F	Y	34	10.00 U		ug/L	7/22/87		USTEST	
		8/18/87	H000DMF9	N	34	10.00 U		ug/L	9/18/87		USTEST	
			H000DMF9F	Y	34	10.00 U		ug/L	9/22/87		USTEST	
		11/13/87	H000DMG1	N	34	10.00 U		ug/L	12/03/87		USTEST	
			H000DMG1F	Y	34	10.00 U		ug/L	12/11/87		USTEST	
		5/10/88	H000DMG4	N	34	10.00 U		ug/L	5/13/88		USTEST	
			H000DMG4F	Y	34	10.00 U		ug/L	5/20/88		USTEST	
		8/18/88	H000DMG6	N	34	10.00 U		ug/L	9/14/88		USTEST	
			H000DMG6F	Y	34	10.00 U		ug/L	9/14/88		USTEST	
		12/09/88	H000DMG8	N	34	10.00 U		ug/L	12/22/88		USTEST	
			H000DMG8F	Y	34	10.00 U		ug/L	12/16/88		USTEST	
		6/13/89	H000DMG9	N	34	10.00 U	5.13	ug/L	6/26/89		USTEST	
			H000DMG9F	Y	34	10.00 U	5.13	ug/L	6/26/89		USTEST	
		12/18/91	B00KC6	N	34	U			2/26/92	0	DATACH	
		1/07/92	B01DY2	N	4	26.40		ug/L			SKINER	
		5/06/92	B062Y4	N	4	11.90		ug/L			SKINER	
			B062Y5	Y	4	3.00		ug/L			SKINER	
		9/10/92	B07615	N	4	5.40		ug/L			SKINER	
			B07616	Y	4	2.60		ug/L			SKINER	
Lead	399-8-2	6/18/85	H000DMB4	N	34	45.00		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	168.00		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	30.00 U		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	30.00 U		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	30.00 U		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	30.00 U		ug/L	1/10/86		USTEST	
		9/22/86	H000DMD5	N	40	5.00 U		ug/L	10/17/86		USTEST	
		10/22/86	H000DMD8	N	40	5.00 U		ug/L	11/24/86		USTEST	
		11/13/86	H000DMD9	N	40	5.00 U		ug/L	12/12/86		USTEST	
		12/08/86	H000DMF0	N	40	5.00 U		ug/L	1/07/87		USTEST	
		1/16/87	H000DMF2	N	40	5.00 U		ug/L	1/22/87		USTEST	
		2/20/87	H000DMF3	N	40	5.00		ug/L	3/04/87		USTEST	
		3/29/87	H000DMF4	N	40	5.00 U		ug/L	4/27/87		USTEST	
		4/15/87	H000DMF6	N	40	5.00 U		ug/L	5/12/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Lead	399-8-2	6/19/87	H000DMF7	N	40	5.00 U		ug/L	8/11/87		USTEST	
		8/18/87	H000DMF9	N	40	5.00 U		ug/L	9/23/87		USTEST	
		11/13/87	H000DMG1	N	40	5.00 U		ug/L	11/27/87		USTEST	
		5/10/88	H000DMG4	N	40	5.00 U		ug/L	5/12/88		USTEST	
		8/18/88	H000DMG6	N	40	5.00 U		ug/L	9/06/88		USTEST	
		12/09/88	H000DMG8	N	40	5.00 U		ug/L	1/03/89		USTEST	
		6/13/89	H000DMG9	N	40	5.00 U	2.55	ug/L	7/06/89		USTEST	
		1/07/92	B01DY2	N	6	1.80		ug/L			SKINER	
		5/06/92	B062Y4	N	6	1.60		ug/L			SKINER	
			B062Y5	Y	6	2.30 *		ug/L			SKINER	
		9/10/92	B07615	N	6	2.30 *		ug/L			SKINER	
			B07616	Y	6	7.90		ug/L			SKINER	
Strontium-90	399-8-2	1/07/92	B01DY2	N	281	.06 UJ		pCi/L			TMA	
		5/06/92	B062Y4	N	281	-.09 U		pCi/L			TMA	
		9/10/92	B07615	N	281	-1.20 UJ		pCi/L			TMA	
Uranium	399-8-2	2/01/59	H000DM14	N	77	10.00		pCi/L			USTEST	
		3/01/59	H000DM15	N	77	4.00		pCi/L			USTEST	
		4/01/59	H000DM16	N	77	3.00		pCi/L			USTEST	
		1/19/67	H000DM20	N	77	140.00		pCi/L			USTEST	
		7/17/67	H000DM21	N	77	14.00		pCi/L			USTEST	
		1/17/68	H000DM22	N	77	19.00		pCi/L			USTEST	
		1/26/77	H000DM58	N	77	2.40		pCi/L			USTEST	
		2/01/77	H000DM59	N	77	3.40		pCi/L			USTEST	
		3/02/77	H000DM60	N	77	2.50		pCi/L			USTEST	
		3/30/77	H000DM61	N	77	2.70		pCi/L			USTEST	
		4/25/77	H000DM62	N	77	21.00		pCi/L			USTEST	
		6/30/77	H000DM64	N	77	2.40		pCi/L			USTEST	
		9/01/77	H000DM66	N	77	1.60		pCi/L			USTEST	
		3/27/78	H000DM73	N	77	6.90		pCi/L			USTEST	
		6/20/78	H000DM74	N	77	6.90		pCi/L			USTEST	
		9/12/78	H000DM75	N	77	6.80		pCi/L			USTEST	
		1/08/79	H000DM76	N	77	6.90		pCi/L			USTEST	
		3/19/79	H000DM77	N	77	6.90		pCi/L			USTEST	
		6/13/79	H000DM78	N	77	6.90		pCi/L			USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Uranium	399-8-2	9/04/79	H000DM79	N	77	6.90		pCi/L			USTEST	
		1/11/80	H000DM80	N	77	6.90		pCi/L			USTEST	
		4/09/80	H000DM81	N	77	6.90		pCi/L			USTEST	
		6/25/80	H000DM82	N	77	6.90		pCi/L			USTEST	
		1/09/81	H000DM83	N	77	6.90		pCi/L			USTEST	
		3/26/81	H000DM84	N	77	6.90		pCi/L			USTEST	
		6/25/81	H000DM85	N	77	6.00		pCi/L			USTEST	
		9/14/81	H000DM86	N	77	6.70		pCi/L			USTEST	
		1/07/82	H000DM87	N	77	6.70		pCi/L			USTEST	
		3/19/82	H000DM88	N	77	6.70		pCi/L			USTEST	
		6/15/82	H000DM89	N	77	6.70		pCi/L			USTEST	
		9/16/82	H000DM90	N	77	6.70		pCi/L			USTEST	
		11/24/82	H000DM91	N	77	6.70		pCi/L			USTEST	
		3/22/83	H000DM92	N	77	6.70		pCi/L			USTEST	
		6/21/83	H000DM93	N	77	6.70		pCi/L			USTEST	
		9/21/83	H000DM94	N	77	6.70		pCi/L			USTEST	
		12/02/83	H000DM95	N	77	6.70		pCi/L			USTEST	
		3/29/84	H000DM96	N	77	2.80		pCi/L			USTEST	
		6/29/84	H000DM97	N	77	4.00		pCi/L			USTEST	
		10/12/84	H000DM98	N	77	2.20		pCi/L			USTEST	
		12/28/84	H000DM99	N	77	2.70		pCi/L			USTEST	
		1/29/85	H000DMB0	N	77	14.00		pCi/L			USTEST	
		4/15/85	H000DMB2	N	77	4.00		pCi/L			USTEST	
		9/12/85	H000DMB7	N	77	2.20		pCi/L			USTEST	
		12/05/85	H000DMC0	N	77	4.70		pCi/L			USTEST	
		1/30/86	H000DMC4	N	77	4.00		pCi/L			PNL-KI	
		4/18/86	H000DMC7	N	77	3.90		pCi/L			PNL-KI	
		7/16/86	H000DMD2	N	77	1.80 U		pCi/L			PNL-KI	
		10/22/86	H000DMD7	N	77	21.00		pCi/L			PNL-KI	
		1/16/87	H000DMF1	N	77	4.49	1.48	pCi/L	2/13/87		USTEST	
		4/15/87	H000DMF5	N	77	2.97	.89	pCi/L	5/12/87		USTEST	
		7/22/87	H000DMF8	N	77	1.76	.56	pCi/L	11/06/87		USTEST	
		10/19/87	H000DMG0	N	77	1.86	.59	pCi/L	11/03/87		USTEST	
		11/13/87	H000DMG1	N	77	2.75	.82	ug/L	12/08/87		USTEST	
		2/04/88	H000DMG2	N	77	1.91	.63	pCi/L	3/24/88		USTEST	
		5/10/88	H000DMG3	N	77	1.84	.62	pCi/L	6/07/88		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Uranium	399-8-2	7/07/88	H000DMG5	N	77	1.92	.65	pCi/L	8/11/88		USTEST	
		12/02/88	H000DMG7	N	77	1.38	.46	pCi/L	12/21/88		USTEST	
		12/09/88	H000DMG8	N	77	1.89	.62	pCi/L	12/29/88		USTEST	
		6/13/89	H000DMG9	N	77	2.32	.73	pCi/L	7/06/89		USTEST	
		12/18/91	B00MH6	N	145	2.37	.77	ug/L	1/15/92	1	ITASRL	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Barium	399-8-2	6/18/85	H000DMB4	N	34	42.00		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	45.00		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	36.00		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	38.00		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	38.00		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	37.00		ug/L	1/10/86		USTEST	
		1/20/86	H000DMC3	N	34	39.00		ug/L	2/05/86		USTEST	
		2/20/86	H000DMC5	N	34	38.00		ug/L	3/26/86		USTEST	
		3/20/86	H000DMC6	N	34	40.00		ug/L	4/11/86		USTEST	
		4/18/86	H000DMC8	N	34	38.00		ug/L	5/13/86		USTEST	
		5/20/86	H000DMC9	N	34	39.00		ug/L	6/20/86		USTEST	
		6/25/86	H000DMD0	N	34	38.00		ug/L	7/29/86		USTEST	
		7/16/86	H000DMD3	N	34	39.00		ug/L	8/20/86		USTEST	
		8/19/86	H000DMD4	N	34	39.00		ug/L	9/22/86		USTEST	
		9/22/86	H000DMD5	N	34	39.00		ug/L	10/28/86		USTEST	
			H000DMD5F	Y	34	36.00		ug/L	10/28/86		USTEST	
		10/22/86	H000DMD8	N	34	39.00		ug/L	11/04/86		USTEST	
			H000DMD8F	Y	34	37.00		ug/L	11/04/86		USTEST	
		11/13/86	H000DMD9	N	34	38.00		ug/L	11/20/86		USTEST	
			H000DMD9F	Y	34	38.00		ug/L	11/20/86		USTEST	
		12/08/86	H000DMF0	N	34	38.00		ug/L	12/16/86		USTEST	
			H000DMF0F	Y	34	38.00		ug/L	12/15/86		USTEST	
		1/16/87	H000DMF2	N	34	38.00		ug/L	1/28/87		USTEST	
			H000DMF2F	Y	34	38.00		ug/L	1/28/87		USTEST	
		2/20/87	H000DMF3	N	34	39.00		ug/L	2/27/87		USTEST	
			H000DMF3F	Y	34	39.00		ug/L	2/27/87		USTEST	
		3/29/87	H000DMF4	N	34	41.00		ug/L	4/23/87		USTEST	
			H000DMF4F	Y	34	41.00		ug/L	4/23/87		USTEST	
		4/15/87	H000DMF6	N	34	40.00		ug/L	5/11/87		USTEST	
			H000DMF6F	Y	34	40.00		ug/L	5/11/87		USTEST	
		6/19/87	H000DMF7	N	34	43.00		ug/L	7/22/87		USTEST	
			H000DMF7F	Y	34	39.00		ug/L	7/22/87		USTEST	
		8/18/87	H000DMF9	N	34	45.00		ug/L	9/18/87		USTEST	
			H000DMF9F	Y	34	42.00		ug/L	9/22/87		USTEST	
		11/13/87	H000DMG1	N	34	43.00		ug/L	12/03/87		USTEST	
			H000DMG1F	Y	34	43.00		ug/L	12/11/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Barium	399-8-2	5/10/88	H000DMG4	N	34	46.00		ug/L	5/13/88		USTEST	
			H000DMG4F	Y	34	45.00		ug/L	5/20/88		USTEST	
		8/18/88	H000DMG6	N	34	45.00		ug/L	9/14/88		USTEST	
			H000DMG6F	Y	34	46.00		ug/L	9/14/88		USTEST	
		12/09/88	H000DMG8	N	34	35.00		ug/L	12/22/88		USTEST	
			H000DMG8F	Y	34	38.00		ug/L	12/16/88		USTEST	
		6/13/89	H000DMG9	N	34	38.00	4.69	ug/L	6/26/89		USTEST	
			H000DMG9F	Y	34	37.00	4.60	ug/L	6/26/89		USTEST	
		12/18/91	B00KC6	N	34	34.00	4.69	ug/L	2/26/92	0	DATACH	
		1/07/92	B01DY2	N	4	41.40		ug/L			SKINER	
		5/06/92	B062Y4	N	4	41.20		ug/L			SKINER	
			B062Y5	Y	4	37.70		ug/L			SKINER	
		9/10/92	B07615	N	4	35.20		ug/L			SKINER	
			B07616	Y	4	37.10		ug/L			SKINER	
Cadmium	399-8-2	6/18/85	H000DMB4	N	34	2.00 U		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	2.00 U		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	3.00		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	2.00 U		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	2.00 U		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	2.00 U		ug/L	1/10/86		USTEST	
		1/20/86	H000DMC3	N	34	2.00 U		ug/L	2/05/86		USTEST	
		2/20/86	H000DMC5	N	34	2.00 U		ug/L	3/26/86		USTEST	
		3/20/86	H000DMC6	N	34	2.00 U		ug/L	4/11/86		USTEST	
		4/18/86	H000DMC8	N	34	2.00 U		ug/L	5/13/86		USTEST	
		5/20/86	H000DMC9	N	34	2.00 U		ug/L	6/20/86		USTEST	
		6/25/86	H000DMD0	N	34	2.00 U		ug/L	7/29/86		USTEST	
		7/16/86	H000DMD3	N	34	2.00 U		ug/L	8/20/86		USTEST	
		8/19/86	H000DMD4	N	34	2.00 U		ug/L	9/22/86		USTEST	
		9/22/86	H000DMD5	N	34	2.00 U		ug/L	10/28/86		USTEST	
			H000DMD5F	Y	34	2.00 U		ug/L	10/28/86		USTEST	
		10/22/86	H000DMD8	N	34	2.00 U		ug/L	11/04/86		USTEST	
			H000DMD8F	Y	34	2.00 U		ug/L	11/04/86		USTEST	
		11/13/86	H000DMD9	N	34	2.00 U		ug/L	11/20/86		USTEST	
			H000DMD9F	Y	34	2.00 U		ug/L	11/20/86		USTEST	
		12/08/86	H000DMF0	N	34	2.00 U		ug/L	12/16/86		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Cadmium	399-8-2	12/08/86	H000DMF0F	Y	34	2.00 U		ug/L	12/15/86		USTEST	
		1/16/87	H000DMF2	N	34	2.00 U		ug/L	1/28/87		USTEST	
			H000DMF2F	Y	34	2.00 U		ug/L	1/28/87		USTEST	
		2/20/87	H000DMF3	N	34	2.00 U		ug/L	2/27/87		USTEST	
			H000DMF3F	Y	34	2.00 U		ug/L	2/27/87		USTEST	
		3/29/87	H000DMF4	N	34	2.00 U		ug/L	4/23/87		USTEST	
			H000DMF4F	Y	34	2.00 U		ug/L	4/23/87		USTEST	
		4/15/87	H000DMF6	N	34	2.00 U		ug/L	5/11/87		USTEST	
			H000DMF6F	Y	34	2.00 U		ug/L	5/11/87		USTEST	
		6/19/87	H000DMF7	N	34	2.00 U		ug/L	7/22/87		USTEST	
			H000DMF7F	Y	34	2.00 U		ug/L	7/22/87		USTEST	
		8/18/87	H000DMF9	N	34	2.00 U		ug/L	9/18/87		USTEST	
			H000DMF9F	Y	34	2.00		ug/L	9/22/87		USTEST	
		11/13/87	H000DMG1	N	34	2.00 U		ug/L	12/03/87		USTEST	
			H000DMG1F	Y	34	2.00 U		ug/L	12/11/87		USTEST	
		5/10/88	H000DMG4	N	34	2.00 U		ug/L	5/13/88		USTEST	
			H000DMG4F	Y	34	2.00 U		ug/L	5/20/88		USTEST	
		8/18/88	H000DMG6	N	34	2.00 U		ug/L	9/14/88		USTEST	
			H000DMG6F	Y	34	2.00 U		ug/L	9/14/88		USTEST	
		12/09/88	H000DMG8	N	34	2.00 U		ug/L	12/22/88		USTEST	
			H000DMG8F	Y	34	2.00 U		ug/L	12/16/88		USTEST	
		6/13/89	H000DMG9	N	34	2.00 U	1.38	ug/L	6/26/89		USTEST	
			H000DMG9F	Y	34	2.00 U	1.38	ug/L	6/26/89		USTEST	
		12/18/91	B00KC6	N	34	U			2/26/92	0	DATACH	
		1/07/92	B01DY2	N	4	1.00		ug/L			SKINER	
		5/06/92	B062Y4	N	4	2.00		ug/L			SKINER	
			B062Y5	Y	4	2.00		ug/L			SKINER	
		9/10/92	B07615	N	4	1.50		ug/L			SKINER	
			B07616	Y	4	1.50		ug/L			SKINER	
Cesium-137	399-8-2	8/02/76	H000DM57	N	77	11.00		pCi/L			USTEST	
		1/26/77	H000DM58	N	77	.53		pCi/L			USTEST	
		10/31/77	H000DM69	N	77	20.00		pCi/L			USTEST	
		1/11/78	H000DM72	N	77	10.00		pCi/L			USTEST	
		6/20/78	H000DM74	N	77	31.00		pCi/L			USTEST	
		1/16/87	H000DMF1	N	77	.35 U	4.67	pCi/L	2/12/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Cesium-137	399-8-2	4/15/87	H000DMF5	N	77	2.67 U	6.80	pCi/L	5/06/87		USTEST	
		7/22/87	H000DMF8	N	77	0.00 U	6.42	pCi/L	8/10/87		USTEST	
		10/19/87	H000DMG0	N	77	-3.79 U	6.40	pCi/L	10/30/87		USTEST	
		1/07/92	B01DY2	N	232	9.02 U		pCi/L			TMA	
		5/06/92	B062Y4	N	232	11.00 U		pCi/L			TMA	
		9/10/92	B07615	N	232	10.00 UJ		pCi/L			TMA	
Chromium	399-8-2	6/18/85	H000DMB4	N	34	10.00 U		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	10.00 U		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	10.00 U		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	10.00 U		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	10.00 U		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	10.00 U		ug/L	1/10/86		USTEST	
		1/20/86	H000DMC3	N	34	10.00 U		ug/L	2/05/86		USTEST	
		2/20/86	H000DMC5	N	34	10.00 U		ug/L	3/26/86		USTEST	
		3/20/86	H000DMC6	N	34	10.00 U		ug/L	4/11/86		USTEST	
		4/18/86	H000DMC8	N	34	10.00 U		ug/L	5/13/86		USTEST	
		5/20/86	H000DMC9	N	34	10.00 U		ug/L	6/20/86		USTEST	
		6/25/86	H000DMD0	N	34	10.00 U		ug/L	7/29/86		USTEST	
		7/16/86	H000DMD3	N	34	10.00 U		ug/L	8/20/86		USTEST	
		8/19/86	H000DMD4	N	34	10.00 U		ug/L	9/22/86		USTEST	
		9/22/86	H000DMD5	N	34	10.00 U		ug/L	10/28/86		USTEST	
			H000DMD5F	Y	34	10.00 U		ug/L	10/28/86		USTEST	
		10/22/86	H000DMD8	N	34	10.00 U		ug/L	11/04/86		USTEST	
			H000DMD8F	Y	34	10.00 U		ug/L	11/04/86		USTEST	
		11/13/86	H000DMD9	N	34	10.00 U		ug/L	11/20/86		USTEST	
			H000DMD9F	Y	34	10.00 U		ug/L	11/20/86		USTEST	
		12/08/86	H000DMF0	N	34	10.00 U		ug/L	12/16/86		USTEST	
			H000DMF0F	Y	34	10.00 U		ug/L	12/15/86		USTEST	
		1/16/87	H000DMF2	N	34	10.00 U		ug/L	1/28/87		USTEST	
			H000DMF2F	Y	34	10.00 U		ug/L	1/28/87		USTEST	
		2/20/87	H000DMF3	N	34	10.00 U		ug/L	2/27/87		USTEST	
			H000DMF3F	Y	34	10.00 U		ug/L	2/27/87		USTEST	
		3/29/87	H000DMF4	N	34	10.00 U		ug/L	4/23/87		USTEST	
			H000DMF4F	Y	34	10.00 U		ug/L	4/23/87		USTEST	
		4/15/87	H000DMF6	N	34	10.00 U		ug/L	5/11/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Chromium	399-8-2	4/15/87	H000DMF6F	Y	34	10.00 U		ug/L	5/11/87		USTEST	
		6/19/87	H000DMF7	N	34	10.00 U		ug/L	7/22/87		USTEST	
			H000DMF7F	Y	34	10.00 U		ug/L	7/22/87		USTEST	
		8/18/87	H000DMF9	N	34	10.00 U		ug/L	9/18/87		USTEST	
			H000DMF9F	Y	34	10.00 U		ug/L	9/22/87		USTEST	
		11/13/87	H000DMG1	N	34	10.00 U		ug/L	12/03/87		USTEST	
			H000DMG1F	Y	34	10.00 U		ug/L	12/11/87		USTEST	
		5/10/88	H000DMG4	N	34	10.00 U		ug/L	5/13/88		USTEST	
			H000DMG4F	Y	34	10.00 U		ug/L	5/20/88		USTEST	
		8/18/88	H000DMG6	N	34	10.00 U		ug/L	9/14/88		USTEST	
			H000DMG6F	Y	34	10.00 U		ug/L	9/14/88		USTEST	
		12/09/88	H000DMG8	N	34	10.00 U		ug/L	12/22/88		USTEST	
			H000DMG8F	Y	34	10.00 U		ug/L	12/16/88		USTEST	
		6/13/89	H000DMG9	N	34	10.00 U	5.13	ug/L	6/26/89		USTEST	
			H000DMG9F	Y	34	10.00 U	5.13	ug/L	6/26/89		USTEST	
		12/18/91	B00KC6	N	34	U			2/26/92	0	DATACH	
		1/07/92	B01DY2	N	4	26.40		ug/L			SKINER	
		5/06/92	B062Y4	N	4	11.90		ug/L			SKINER	
			B062Y5	Y	4	3.00		ug/L			SKINER	
		9/10/92	B07615	N	4	5.40		ug/L			SKINER	
			B07616	Y	4	2.60		ug/L			SKINER	
Lead	399-8-2	6/18/85	H000DMB4	N	34	45.00		ug/L	7/15/85		USTEST	
		7/22/85	H000DMB5	N	34	168.00		ug/L	9/04/85		USTEST	
		8/19/85	H000DMB6	N	34	30.00 U		ug/L	9/30/85		USTEST	
		9/25/85	H000DMB8	N	34	30.00 U		ug/L	10/29/85		USTEST	
		10/23/85	H000DMB9	N	34	30.00 U		ug/L	11/21/85		USTEST	
		12/05/85	H000DMC2	N	34	30.00 U		ug/L	1/10/86		USTEST	
		9/22/86	H000DMD5	N	40	5.00 U		ug/L	10/17/86		USTEST	
		10/22/86	H000DMD8	N	40	5.00 U		ug/L	11/24/86		USTEST	
		11/13/86	H000DMD9	N	40	5.00 U		ug/L	12/12/86		USTEST	
		12/08/86	H000DMF0	N	40	5.00 U		ug/L	1/07/87		USTEST	
		1/16/87	H000DMF2	N	40	5.00 U		ug/L	1/22/87		USTEST	
		2/20/87	H000DMF3	N	40	5.00		ug/L	3/04/87		USTEST	
		3/29/87	H000DMF4	N	40	5.00 U		ug/L	4/27/87		USTEST	
		4/15/87	H000DMF6	N	40	5.00 U		ug/L	5/12/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Lead	399-8-2	6/19/87	H000DMF7	N	40	5.00 U		ug/L	8/11/87		USTEST	
		8/18/87	H000DMF9	N	40	5.00 U		ug/L	9/23/87		USTEST	
		11/13/87	H000DMG1	N	40	5.00 U		ug/L	11/27/87		USTEST	
		5/10/88	H000DMG4	N	40	5.00 U		ug/L	5/12/88		USTEST	
		8/18/88	H000DMG6	N	40	5.00 U		ug/L	9/06/88		USTEST	
		12/09/88	H000DMG8	N	40	5.00 U		ug/L	1/03/89		USTEST	
		6/13/89	H000DMG9	N	40	5.00 U	2.55	ug/L	7/06/89		USTEST	
		1/07/92	B01DY2	N	6	1.80		ug/L			SKINER	
		5/06/92	B062Y4	N	6	1.60		ug/L			SKINER	
			B062Y5	Y	6	2.30 *		ug/L			SKINER	
		9/10/92	B07615	N	6	2.30 *		ug/L			SKINER	
			B07616	Y	6	7.90		ug/L			SKINER	
Strontium-90	399-8-2	1/07/92	B01DY2	N	281	.06 UJ		pCi/L			TMA	
		5/06/92	B062Y4	N	281	-.09 U		pCi/L			TMA	
		9/10/92	B07615	N	281	-1.20 UJ		pCi/L			TMA	
Uranium	399-8-2	2/01/59	H000DM14	N	77	10.00		pCi/L			USTEST	
		3/01/59	H000DM15	N	77	4.00		pCi/L			USTEST	
		4/01/59	H000DM16	N	77	3.00		pCi/L			USTEST	
		1/19/67	H000DM20	N	77	140.00		pCi/L			USTEST	
		7/17/67	H000DM21	N	77	14.00		pCi/L			USTEST	
		1/17/68	H000DM22	N	77	19.00		pCi/L			USTEST	
		1/26/77	H000DM58	N	77	2.40		pCi/L			USTEST	
		2/01/77	H000DM59	N	77	3.40		pCi/L			USTEST	
		3/02/77	H000DM60	N	77	2.50		pCi/L			USTEST	
		3/30/77	H000DM61	N	77	2.70		pCi/L			USTEST	
		4/25/77	H000DM62	N	77	21.00		pCi/L			USTEST	
		6/30/77	H000DM64	N	77	2.40		pCi/L			USTEST	
		9/01/77	H000DM66	N	77	1.60		pCi/L			USTEST	
		3/27/78	H000DM73	N	77	6.90		pCi/L			USTEST	
		6/20/78	H000DM74	N	77	6.90		pCi/L			USTEST	
		9/12/78	H000DM75	N	77	6.80		pCi/L			USTEST	
		1/08/79	H000DM76	N	77	6.90		pCi/L			USTEST	
		3/19/79	H000DM77	N	77	6.90		pCi/L			USTEST	
		6/13/79	H000DM78	N	77	6.90		pCi/L			USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Uranium	399-8-2	9/04/79	H000DM79	N	77	6.90		pCi/L			USTEST	
		1/11/80	H000DM80	N	77	6.90		pCi/L			USTEST	
		4/09/80	H000DM81	N	77	6.90		pCi/L			USTEST	
		6/25/80	H000DM82	N	77	6.90		pCi/L			USTEST	
		1/09/81	H000DM83	N	77	6.90		pCi/L			USTEST	
		3/26/81	H000DM84	N	77	6.90		pCi/L			USTEST	
		6/25/81	H000DM85	N	77	6.00		pCi/L			USTEST	
		9/14/81	H000DM86	N	77	6.70		pCi/L			USTEST	
		1/07/82	H000DM87	N	77	6.70		pCi/L			USTEST	
		3/19/82	H000DM88	N	77	6.70		pCi/L			USTEST	
		6/15/82	H000DM89	N	77	6.70		pCi/L			USTEST	
		9/16/82	H000DM90	N	77	6.70		pCi/L			USTEST	
		11/24/82	H000DM91	N	77	6.70		pCi/L			USTEST	
		3/22/83	H000DM92	N	77	6.70		pCi/L			USTEST	
		6/21/83	H000DM93	N	77	6.70		pCi/L			USTEST	
		9/21/83	H000DM94	N	77	6.70		pCi/L			USTEST	
		12/02/83	H000DM95	N	77	6.70		pCi/L			USTEST	
		3/29/84	H000DM96	N	77	2.80		pCi/L			USTEST	
		6/29/84	H000DM97	N	77	4.00		pCi/L			USTEST	
		10/12/84	H000DM98	N	77	2.20		pCi/L			USTEST	
		12/28/84	H000DM99	N	77	2.70		pCi/L			USTEST	
		1/29/85	H000DMB0	N	77	14.00		pCi/L			USTEST	
		4/15/85	H000DMB2	N	77	4.00		pCi/L			USTEST	
		9/12/85	H000DMB7	N	77	2.20		pCi/L			USTEST	
		12/05/85	H000DMC0	N	77	4.70		pCi/L			USTEST	
		1/30/86	H000DMC4	N	77	4.00		pCi/L			PNL-KI	
		4/18/86	H000DMC7	N	77	3.90		pCi/L			PNL-KI	
		7/16/86	H000DMD2	N	77	1.80 U		pCi/L			PNL-KI	
		10/22/86	H000DMD7	N	77	21.00		pCi/L			PNL-KI	
		1/16/87	H000DMF1	N	77	4.49	1.48	pCi/L	2/13/87		USTEST	
		4/15/87	H000DMF5	N	77	2.97	.89	pCi/L	5/12/87		USTEST	
		7/22/87	H000DMF8	N	77	1.76	.56	pCi/L	11/06/87		USTEST	
		10/19/87	H000DMG0	N	77	1.86	.59	pCi/L	11/03/87		USTEST	
		11/13/87	H000DMG1	N	77	2.75	.82	ug/L	12/08/87		USTEST	
		2/04/88	H000DMG2	N	77	1.91	.63	pCi/L	3/24/88		USTEST	
		5/10/88	H000DMG3	N	77	1.84	.62	pCi/L	6/07/88		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Uranium	399-8-2	7/07/88	H000DMG5	N	77	1.92	.65	pCi/L	8/11/88		USTEST	
		12/02/88	H000DMG7	N	77	1.38	.46	pCi/L	12/21/88		USTEST	
		12/09/88	H000DMG8	N	77	1.89	.62	pCi/L	12/29/88		USTEST	
		6/13/89	H000DMG9	N	77	2.32	.73	pCi/L	7/06/89		USTEST	
		12/18/91	B00MH6	N	145	2.37	.77	ug/L	1/15/92	1	ITASRL	

Results for upgradient well 399-1-18A

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Constituent Name	Well	Collect Date	Sample Number	Filtered	Method ID	Result	Error	Units	Analysis Date	Dilution	Lab	Comment
Barium	399-1-18A	2/27/87	H000BSS7	N	34	45.00		ug/L	3/20/87		USTEST	
			H000BSS7F	Y	34	45.00		ug/L	3/20/87		USTEST	
		3/31/87	H000BSS8	N	34	45.00		ug/L	4/27/87		USTEST	
			H000BSS8F	Y	34	44.00		ug/L	4/27/87		USTEST	
		4/22/87	H000BSS9	N	34	46.00		ug/L	5/13/87		USTEST	
			H000BSS9F	Y	34	46.00		ug/L	5/13/87		USTEST	
		6/18/87	H000BST0	N	34	50.00		ug/L	7/22/87		USTEST	
			H000BST0F	Y	34	48.00		ug/L	7/22/87		USTEST	
		8/24/87	H000BST1	N	34	48.00		ug/L	9/23/87		USTEST	
			H000BST1F	Y	34	48.00		ug/L	9/23/87		USTEST	
		11/17/87	H000BST2	N	34	46.00		ug/L	12/11/87		USTEST	
			H000BST2F	Y	34	49.00		ug/L	12/11/87		USTEST	
		5/23/88	H000BST3	N	34	50.00		ug/L	6/07/88		USTEST	
			H000BST3F	Y	34	48.00		ug/L	6/09/88		USTEST	
		8/16/88	H000BST4	N	34	56.00		ug/L	8/31/88		USTEST	
			H000BST4F	Y	34	52.00		ug/L	8/31/88		USTEST	
		12/07/88	H000BST9	N	34	46.00		ug/L	12/15/88		USTEST	
			H000BST9F	Y	34	43.00		ug/L	12/16/88		USTEST	
		6/08/89	H000BSV8	N	34	42.00	5.06	ug/L	6/21/89		USTEST	
			H000BSV8F	Y	34	43.00	5.15	ug/L	6/21/89		USTEST	
		12/18/89	H000BSW6	N	34	46.00	5.43	ug/L	1/15/90		USTEST	
			H000BSW6F	Y	34	46.00	5.43	ug/L	1/15/90		USTEST	
		12/18/90	H0007091	N	34	.04		mg/L	5/14/91		PNL2	
		7/15/91	H00071V8	N	34	47.00 Y	6.49	ug/L	2/05/92	0	DATACH	
			H00071V8F	Y	34	46.00	6.35	ug/L	2/05/92	0	DATACH	
		12/06/91	B01F01	N	4	44.10 E		ug/L			SKINER	
			B01F02	Y	4	45.70		ug/L			SKINER	
		12/13/91	B01FR8	N	34	44.00 P	6.07	ug/L	3/02/92	0	DATACH	
			B01FR9	N	34	44.00	6.07	ug/L	3/02/92	0	DATACH	
		4/30/92	B062S9	N	4	46.70		ug/L			SKINER	
			B062T0	Y	4	45.30		ug/L			SKINER	
		7/16/92	B07052	N	34	47.00	6.49	ug/L	8/07/92	0	DATACH	
			B07054	N	34	46.00	6.35	ug/L	8/07/92	0	DATACH	
			B07056	Y	34	47.00	6.49	ug/L	8/07/92	0	DATACH	
			B07057	Y	34	46.00	6.35	ug/L	8/07/92	0	DATACH	
		2/12/93	B085G6	N	34	50.00	6.90	ug/L	3/09/93		DATACH	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Barium	399-1-18A	2/12/93	B085G7	Y	34	50.00	6.90	ug/L	3/09/93		DATACH	
		9/07/93	B09657	N	34	47.00	.14	ug/L	10/11/93		DATACH	
			B09658	Y	34	46.00	.14	ug/L	10/11/93		DATACH	
		6/22/94	B0BYL8	N	34	46.00	11.00	ug/L	7/20/94		DATACH	
			B0BYL9	Y	34	46.00	11.00	ug/L	7/20/94		DATACH	
		10/05/94	B0D378	N	34	44.00	21.10	ug/L	10/17/94		DATACH	
			B0D379	Y	34	44.00	21.10	ug/L	10/17/94		DATACH	
		6/01/95	B0FLS5	N	34	49.00	23.50	ug/L	7/08/95		DATACH	
			B0FLS6	Y	34	49.00	23.50	ug/L	7/08/95		DATACH	
		10/03/95	B0GM90	Y	34	47.00	22.60	ug/L	10/20/95	1	DATACH	
		6/04/96	B0HV83	Y	34	49.00	23.50	ug/L	6/25/96	1	DATACH	
		12/10/96	B0JSL2	Y	1139	64.50 Q		ug/L	12/31/96	1	QTESSL	
		6/19/97	B0L5R1	Y	1139	47.00 Q		ug/L	7/11/97	1	QTESSL	Added
Cadmium	399-1-18A	2/27/87	H000BSS7	N	34	2.00 U		ug/L	3/20/87		USTEST	
			H000BSS7F	Y	34	2.00 U		ug/L	3/20/87		USTEST	
		3/31/87	H000BSS8	N	34	2.00 U		ug/L	4/27/87		USTEST	
			H000BSS8F	Y	34	2.00 U		ug/L	4/27/87		USTEST	
		4/22/87	H000BSS9	N	34	2.00 U		ug/L	5/13/87		USTEST	
			H000BSS9F	Y	34	2.00 U		ug/L	5/13/87		USTEST	
		6/18/87	H000BST0	N	34	2.00 U		ug/L	7/22/87		USTEST	
			H000BST0F	Y	34	2.00 U		ug/L	7/22/87		USTEST	
		8/24/87	H000BST1	N	34	2.00 U		ug/L	9/23/87		USTEST	
			H000BST1F	Y	34	2.00 U		ug/L	9/23/87		USTEST	
		11/17/87	H000BST2	N	34	2.00 U		ug/L	12/11/87		USTEST	
			H000BST2F	Y	34	2.00 U		ug/L	12/11/87		USTEST	
		5/23/88	H000BST3	N	34	2.00 U		ug/L	6/07/88		USTEST	
			H000BST3F	Y	34	2.00 U		ug/L	6/09/88		USTEST	
		8/16/88	H000BST4	N	34	2.00 U		ug/L	8/31/88		USTEST	
			H000BST4F	Y	34	2.00 U		ug/L	8/31/88		USTEST	
		12/07/88	H000BST9	N	34	2.00 U		ug/L	12/15/88		USTEST	
			H000BST9F	Y	34	2.00 U		ug/L	12/16/88		USTEST	
		6/08/89	H000BSV8	N	34	2.00 U	1.38	ug/L	6/21/89		USTEST	
			H000BSV8F	Y	34	2.00 U	1.38	ug/L	6/21/89		USTEST	
		12/18/89	H000BSW6	N	34	2.00 U	1.38	ug/L	1/15/90		USTEST	
			H000BSW6F	Y	34	2.00 U	1.38	ug/L	1/15/90		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Cadmium	399-1-18A	12/18/90	H0007091	N	34	U			5/14/91		PNL2	
		7/15/91	H00071V8	N	34	10.00 UY		ug/L	2/05/92	1	DATACH	
			H00071V8F	Y	34	10.00 U		ug/L	2/05/92	1	DATACH	
		12/06/91	B01F01	N	4	1.00		ug/L			SKINER	
			B01F02	Y	4	1.00		ug/L			SKINER	
		12/13/91	B01FR8	N	34	10.00 UP		ug/L	3/02/92	1	DATACH	
			B01FR9	N	34	10.00 U		ug/L	3/02/92	1	DATACH	
		4/30/92	B062S9	N	4	2.00		ug/L			SKINER	
			B062T0	Y	4	2.00		ug/L			SKINER	
		7/16/92	B07052	N	34	10.00 U		ug/L	8/07/92	1	DATACH	
			B07054	N	34	10.00 U		ug/L	8/07/92	1	DATACH	
			B07056	Y	34	10.00 U		ug/L	8/07/92	1	DATACH	
			B07057	Y	34	10.00 U		ug/L	8/07/92	1	DATACH	
		2/12/93	B085G6	N	34	10.00 U		ug/L	3/09/93		DATACH	
			B085G7	Y	34	10.00 U		ug/L	3/09/93		DATACH	
		9/07/93	B09657	N	34	4.70 U		ug/L	10/11/93		DATACH	
			B09658	Y	34	4.70 U		ug/L	10/11/93		DATACH	
		6/22/94	B0BYL8	N	34	3.00 U		ug/L	7/20/94		DATACH	
			B0BYL9	Y	34	3.00 U		ug/L	7/20/94		DATACH	
		10/05/94	B0D378	N	34	3.30 U		ug/L	10/17/94		DATACH	
			B0D379	Y	34	3.30 U		ug/L	10/17/94		DATACH	
		6/01/95	B0FLS5	N	34	1.60 L	.53	ug/L	7/08/95		DATACH	
			B0FLS6	Y	34	1.50 L	.50	ug/L	7/08/95		DATACH	
		10/03/95	B0GM90	Y	34	.98 U		ug/L	10/20/95	1	DATACH	
		6/04/96	B0HV83	Y	34	3.20 U		ug/L	6/25/96	1	DATACH	MOL
		12/10/96	B0JSL2	Y	1139	3.00 U		ug/L	12/31/96	1	QTESSL	
		6/19/97	B0L5R1	Y	1139	2.90 U		ug/L	7/11/97	1	QTESSL	
Cesium-137	399-1-18A	12/06/91	B01F01	N	232	10.69 U		pCi/L			TMA	
		4/30/92	B062S9	N	232	12.00 UJ		pCi/L			TMA	
Chromium	399-1-18A	2/27/87	H000BSS7	N	34	10.00 U		ug/L	3/20/87		USTEST	
			H000BSS7F	Y	34	10.00 U		ug/L	3/20/87		USTEST	
		3/31/87	H000BSS8	N	34	10.00 U		ug/L	4/27/87		USTEST	
			H000BSS8F	Y	34	10.00 U		ug/L	4/27/87		USTEST	
		4/22/87	H000BSS9	N	34	10.00 U		ug/L	5/13/87		USTEST	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Chromium	399-1-18A	4/22/87	H000BSS9F	Y	34	10.00 U		ug/L	5/13/87		USTEST	
		6/18/87	H000BST0	N	34	10.00 U		ug/L	7/22/87		USTEST	
			H000BST0F	Y	34	10.00 U		ug/L	7/22/87		USTEST	
		8/24/87	H000BST1	N	34	10.00 U		ug/L	9/23/87		USTEST	
			H000BST1F	Y	34	10.00 U		ug/L	9/23/87		USTEST	
		11/17/87	H000BST2	N	34	17.00		ug/L	12/11/87		USTEST	
			H000BST2F	Y	34	10.00 U		ug/L	12/11/87		USTEST	
		5/23/88	H000BST3	N	34	10.00		ug/L	6/07/88		USTEST	
			H000BST3F	Y	34	10.00 U		ug/L	6/09/88		USTEST	
		8/16/88	H000BST4	N	34	10.00 U		ug/L	8/31/88		USTEST	
			H000BST4F	Y	34	10.00 U		ug/L	8/31/88		USTEST	
		12/07/88	H000BST9	N	34	10.00 U		ug/L	12/15/88		USTEST	
			H000BST9F	Y	34	10.00 U		ug/L	12/16/88		USTEST	
		6/08/89	H000BSV8	N	34	10.00 U	5.13	ug/L	6/21/89		USTEST	
			H000BSV8F	Y	34	10.00 U	5.13	ug/L	6/21/89		USTEST	
		12/18/89	H000BSW6	N	34	10.00 U	5.13	ug/L	1/15/90		USTEST	
			H000BSW6F	Y	34	10.00 U	5.13	ug/L	1/15/90		USTEST	
		12/18/90	H0007091	N	34	U			5/14/91		PNL2	
		7/15/91	H00071V8	N	34	43.00 Y	25.70	ug/L	2/05/92	0	DATACH	
			H00071V8F	Y	34	20.00 U		ug/L	2/05/92	1	DATACH	
		12/06/91	B01F01	N	4	13.20		ug/L			SKINER	
			B01F02	Y	4	4.50		ug/L			SKINER	
		12/13/91	B01FR8	N	34	30.00 P	17.90	ug/L	3/02/92	0	DATACH	
			B01FR9	N	34	20.00 U		ug/L	3/02/92	1	DATACH	
		4/30/92	B062S9	N	4	24.30		ug/L			SKINER	
			B062T0	Y	4	3.00		ug/L			SKINER	
		7/16/92	B07052	N	34	20.00 U		ug/L	8/07/92	1	DATACH	
			B07054	N	34	20.00 U		ug/L	8/07/92	1	DATACH	
			B07056	Y	34	20.00 U		ug/L	8/07/92	1	DATACH	
			B07057	Y	34	20.00 U		ug/L	8/07/92	1	DATACH	
		2/12/93	B085G6	N	34	20.00 U		ug/L	3/09/93		DATACH	
			B085G7	Y	34	20.00 U		ug/L	3/09/93		DATACH	
		9/07/93	B09657	N	34	81.00	21.10	ug/L	10/11/93		DATACH	
			B09658	Y	34	5.42 U		ug/L	10/11/93		DATACH	
		6/22/94	B0BYL8	N	34	120.00	57.60	ug/L	7/20/94		DATACH	
			B0BYL9	Y	34	11.00 U		ug/L	7/20/94		DATACH	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Chromium	399-1-18A	10/05/94	B0D378	N	34	65.00 B	27.30	ug/L	10/17/94		DATACH	
			B0D379	Y	34	19.00 LB	7.98	ug/L	10/17/94		DATACH	
		6/01/95	B0FLS5	N	34	16.00 L	6.72	ug/L	7/08/95		DATACH	
			B0FLS6	Y	34	7.60 L	3.19	ug/L	7/08/95		DATACH	
		10/03/95	B0GM90	Y	34	3.70 U		ug/L	10/20/95	1	DATACH	
		6/04/96	B0HV83	Y	34	3.40 L	1.43	ug/L	6/25/96	1	DATACH	
		12/10/96	B0JSL2	Y	1139	6.00 B		ug/L	12/31/96	1	QTESSL	
		6/19/97	B0L5R1	Y	1139	2.70 U		ug/L	7/11/97	1	QTESSL	
Lead	399-1-18A	2/27/87	H000BSS7	N	40	5.00 U		ug/L	3/24/87		USTEST	
		3/31/87	H000BSS8	N	40	5.00 U		ug/L	4/27/87		USTEST	
		4/22/87	H000BSS9	N	40	5.00 U		ug/L	5/19/87		USTEST	
		6/18/87	H000BST0	N	40	5.00 U		ug/L	8/10/87		USTEST	
		8/24/87	H000BST1	N	40	5.00 U		ug/L	10/05/87		USTEST	
		11/17/87	H000BST2	N	40	5.00 U		ug/L	11/27/87		USTEST	
		5/23/88	H000BST3	N	40	5.00 U		ug/L	5/27/88		USTEST	
		8/16/88	H000BST4	N	40	5.00 U		ug/L	9/06/88		USTEST	
		12/07/88	H000BST9	N	40	5.00 U		ug/L	1/03/89		USTEST	
		6/08/89	H000BSV8	N	40	5.00 U	2.55	ug/L	6/27/89		USTEST	
		12/18/89	H000BSW6	N	40	5.00 U	2.55	ug/L	1/04/90		USTEST	
		12/18/90	H0007091	N	34	U			5/14/91		PNL2	
		7/15/91	H00071V8	N	40	5.00 U		ug/L	8/14/91	1	ITASSJ	MOL
			H00071V8F	Y	40	5.00 U		ug/L	8/14/91	1	ITASSJ	MOL
		12/06/91	B01F01	N	6	4.90		ug/L			SKINER	
			B01F02	Y	6	1.00		ug/L			SKINER	
		12/13/91	B01FR8	N	40	5.30 P	2.23	ug/L	2/12/92	0	DATACH	
			B01FR9	N	40	5.00 U		ug/L	2/12/92	1	DATACH	
		4/30/92	B062S9	N	6	2.00		ug/L			SKINER	
			B062T0	Y	6	2.00		ug/L			SKINER	
		7/16/92	B07052	N	40	5.00 U		ug/L	7/31/92	1	DATACH	
			B07054	N	40	5.00 U		ug/L	7/31/92	1	DATACH	
			B07056	Y	40	5.00 U		ug/L	7/31/92	1	DATACH	
			B07057	Y	40	5.00 U		ug/L	7/31/92	1	DATACH	
		2/12/93	B085G6	N	40	5.00 U		ug/L	3/09/93		DATACH	
			B085G7	Y	40	5.00 U		ug/L	3/09/93		DATACH	
		9/07/93	B09657	N	40	10.00 B	2.09	ug/L	9/22/93		DATACH	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Lead	399-1-18A	9/07/93	B09658	Y	40	.51 U		ug/L	9/22/93		DATACH	
		6/22/94	B0BYL8	N	40	.60 L	.18	ug/L	7/19/94		DATACH	
			B0BYL9	Y	40	.86 U		ug/L	7/19/94		DATACH	
		10/05/94	B0D378	N	40	3.50 L	1.05	ug/L	10/18/94		DATACH	
			B0D379	Y	40	1.70 L	.51	ug/L	10/18/94		DATACH	
		6/01/95	B0FLS5	N	40	2.60 BL	.78	ug/L	7/02/95		DATACH	
			B0FLS6	Y	40	1.50 U		ug/L	7/02/95		DATACH	
		10/03/95	B0GM90	Y	40	.88 U		ug/L	10/18/95	1	DATACH	
		6/04/96	B0HV83	Y	34	1.70 U		ug/L	7/31/96	1	DATACH	
Strontium-90	399-1-18A	12/06/91	B01F01	N	281	.20 U		pCi/L			TMA	
		4/30/92	B062S9	N	281	-.73 UJ		pCi/L			TMA	
Uranium	399-1-18A	11/17/87	H000BST2	N	77	4.28	1.20	ug/L	12/15/87		USTEST	
		10/14/88	H000BST5	N	77	5.29	1.54	ug/L	11/07/88		USTEST	
		10/25/88	H000BST6	N	77	3.32	1.03	ug/L	11/07/88		USTEST	
		11/09/88	H000BST7	N	77	5.20	2.40	pCi/L	11/22/88		USTEST	
		11/23/88	H000BST8	N	77	3.82	1.88	pCi/L	12/06/88		USTEST	
		12/07/88	H000BST9	N	77	3.59	1.79	pCi/L	12/29/88		USTEST	
		12/22/88	H000BSV0	N	77	4.69	2.05	pCi/L	1/11/89		USTEST	
		1/05/89	H000BSV1	N	77	3.02	1.77	pCi/L	1/25/89		USTEST	
		1/19/89	H000BSV2	N	77	3.22	1.64	pCi/L	2/01/89		USTEST	
		2/01/89	H000BSV3	N	77	3.57	1.91	pCi/L	3/14/89		USTEST	
		2/17/89	H000BSV4	N	77	3.20	1.64	pCi/L	3/14/89		USTEST	
		3/01/89	H000BSV5	N	77	3.59	1.70	pCi/L	3/21/89		USTEST	
		3/16/89	H000BSV6	N	77	3.82	2.00	pCi/L	3/29/89		USTEST	
		5/10/89	H000BSV7	N	77	2.58	1.40	pCi/L	5/23/89		USTEST	
		6/08/89	H000BSV8	N	77	3.74	1.13	pCi/L	6/20/89		USTEST	
		8/03/89	H000BSW2	N	77	2.86	1.35	pCi/L	8/18/89		USTEST	
		8/17/89	H000BSW3	N	77	3.27	1.00	pCi/L	9/08/89		USTEST	
		8/28/89	H000BSW4	N	77	4.05	1.21	pCi/L	9/12/89		USTEST	
		9/27/89	H000BSW5	N	77	4.03	1.21	pCi/L	10/09/89		USTEST	
		12/18/89	H000BSW6	N	77	3.40	1.03	pCi/L	1/24/90		USTEST	
		12/18/90	H0007091	N	145	4.49	1.37	ug/L	6/18/91	1	ITASRL	
		7/15/91	H00071V8	N	145	5.29	1.59	ug/L	9/12/91	1	ITASRL	
		12/13/91	B01FR8	N	145	4.30 P	1.32	ug/L	1/15/92	1	ITASRL	

Constituent Name	Well	Collect Date	Sample Number	Fil-tered	Method ID	Result	Error	Units	Analysis Date	Dilu-tion	Lab	Comment
Uranium	399-1-18A	7/16/92	B07052	N	145	3.85	1.18	ug/L	8/04/92	1	ITASRL	
			B07054	N	145	4.73	1.45	ug/L	8/04/92	1	ITASRL	
		2/12/93	B085G6	N	145	4.24	1.28	ug/L	3/09/93	1	ITASRL	
		9/07/93	B09657	N	145	5.04	1.51	ug/L	9/29/93	1	ITASRL	
		6/22/94	B0BYL8	N	145	5.60	1.74	ug/L	7/15/94	1	ITASRL	
		10/05/94	B0D378	N	145	3.97	1.25	ug/L	10/24/94	1	ITASRL	
		6/01/95	B0FLS5	N	145	5.40	1.66	ug/L	6/27/95	1	ITASRL	
		10/03/95	B0GM88	N	145	4.99	1.58	ug/L	10/30/95	1	ITASRL	
		6/04/96	B0HV82	N	145	5.43	1.69	ug/L	6/24/96	1	ITASRL	
		12/10/96	B0JSL1	N	1289	5.53	.74	ug/L	12/30/96	1	QTESRL	Incorr
		1/08/97	B0JTJ9	N	1289	5.60 B	1.23	ug/L	1/29/97	1	QTESRL	/Samp_
		2/10/97	B0K1Q3	N	1289	5.46	.73	ug/L	3/07/97	1	QTESRL	Incorr
		3/13/97	B0K334	N	1289	5.27	1.16	ug/L	4/18/97	1	QTESRL	Incorr
		6/19/97	B0L5R0	N	1289	7.28	.98	ug/L	7/25/97	1	QTESRL	
		7/17/97	B0LBC3	N	1289	6.92	.93	ug/L	8/24/97	1	QTESRL	
		8/18/97	B0LMX6	N	1289	5.68	1.25	ug/L	9/22/97	1	QTESRL	
		9/09/97	B0LX55	N	1289	5.81	.78	ug/L	9/22/97	1	QTESRL	
		12/11/97	B0MDX7	N	1289	5.61	1.23	ug/L	1/13/98	1	QTESRL	

ATTACHMENT 7

Data Results for the 18 Wells Within 305m of the 324 Building

GeoDAT Report - 2/05/98

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-1	2/01/59	H000BYY7	N	Uranium	440.00		pCi/L
	3/01/59	H000BYY8	N	Uranium	590.00		pCi/L
	4/01/59	H000BYY9	N	Uranium	440.00		pCi/L
	1/19/67	H000BYZ7	N	Uranium	4300.00		pCi/L
	7/17/67	H000BYZ8	N	Uranium	83.00		pCi/L
	1/17/69	H000BZ09	N	Uranium	440.00		pCi/L
	7/28/71	H000BZ35	N	Uranium	130.00		pCi/L
	12/12/74	H000BZ57	N	Uranium	22.00		pCi/L
	2/19/75	H000BZ59	N	Uranium	33.00		pCi/L
	4/18/75	H000BZ61	N	Uranium	110.00		pCi/L
	6/12/75	H000BZ63	N	Uranium	53.00		pCi/L
	12/11/75	H000BZ69	N	Uranium	23.00		pCi/L
	2/12/76	H000BZ72	N	Uranium	11.00		pCi/L
	4/05/76	H000BZ74	N	Uranium	19.00		pCi/L
	5/11/76	H000BZ75	N	Uranium	29.00		pCi/L
	6/09/76	H000BZ76	N	Uranium	33.00		pCi/L
	8/16/76	H000BZ78	N	Uranium	54.00		pCi/L
	9/02/76	H000BZ79	N	Uranium	64.00		pCi/L
	9/09/76	H000BZ80	N	Uranium	49.00		pCi/L
	9/15/76	H000BZ81	N	Cesium-137	17.00		pCi/L
				Uranium	82.00		pCi/L
	9/23/76	H000BZ82	N	Cesium-137	15.00		pCi/L
				Uranium	75.00		pCi/L
	10/14/76	H000BZ83	N	Uranium	50.00		pCi/L
	10/21/76	H000BZ84	N	Uranium	59.00		pCi/L
	10/26/76	H000BZ85	N	Uranium	52.00		pCi/L
	11/06/76	H000BZ86	N	Uranium	53.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-1	11/11/76	H000BZ87	N	Uranium	62.00		pCi/L
	11/18/76	H000BZ88	N	Uranium	53.00		pCi/L
	11/23/76	H000BZ89	N	Uranium	64.00		pCi/L
	12/02/76	H000BZ90	N	Uranium	52.00		pCi/L
	12/28/76	H000BZ91	N	Uranium	19.00		pCi/L
	1/05/77	H000BZ92	N	Uranium	41.00		pCi/L
	1/26/77	H000BZ93	N	Cesium-137	.01		pCi/L
				Uranium	45.00		pCi/L
	2/01/77	H000BZ94	N	Uranium	19.00		pCi/L
	3/01/77	H000BZ95	N	Uranium	36.00		pCi/L
	3/04/77	H000BZ96	N	Uranium	24.00		pCi/L
	3/30/77	H000BZ97	N	Uranium	35.00		pCi/L
		H000BZ98	N	Uranium	6900.00		pCi/L
	4/29/77	H000BZ99	N	Uranium	42.00		pCi/L
	6/02/77	H000BZB1	N	Uranium	41.00		pCi/L
	3/01/78	H000BZC8	N	Cesium-137	15.00		pCi/L
				Uranium	34.00		pCi/L
	3/24/78	H000BZC9	N	Uranium	41.00		pCi/L
	4/26/78	H000BZD0	N	Uranium	43.00		pCi/L
	5/16/78	H000BZD2	N	Uranium	28.00		pCi/L
	6/20/78	H000BZD3	N	Uranium	24.00		pCi/L
	7/11/78	H000BZD4	N	Uranium	26.00		pCi/L
	8/07/78	H000BZD5	N	Uranium	22.00		pCi/L
	9/12/78	H000BZD6	N	Uranium	10.00		pCi/L
	10/13/78	H000BZD7	N	Uranium	17.00		pCi/L
	11/08/78	H000BZD8	N	Uranium	20.00		pCi/L
	11/28/78	H000BZD9	N	Uranium	14.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-1	1/08/79	H000BZF0	N	Uranium	12.00		pCi/L
	1/24/79	H000BZF1	N	Uranium	14.00		pCi/L
	2/22/79	H000BZF2	N	Uranium	14.00		pCi/L
	3/19/79	H000BZF3	N	Uranium	14.00		pCi/L
	4/18/79	H000BZF4	N	Uranium	23.00		pCi/L
	5/16/79	H000BZF5	N	Uranium	11.00		pCi/L
	6/15/79	H000BZF6	N	Uranium	27.00		pCi/L
	7/10/79	H000BZF7	N	Uranium	22.00		pCi/L
	8/07/79	H000BZF8	N	Uranium	10.00		pCi/L
	9/05/79	H000BZF9	N	Uranium	14.00		pCi/L
	10/11/79	H000BZG0	N	Uranium	6.90		pCi/L
	11/07/79	H000BZG1	N	Uranium	6.90		pCi/L
	12/03/79	H000BZG2	N	Uranium	6.90		pCi/L
	1/11/80	H000BZG3	N	Uranium	6.90		pCi/L
	1/30/80	H000BZG4	N	Uranium	11.00		pCi/L
	4/09/80	H000BZG6	N	Uranium	11.00		pCi/L
	4/23/80	H000BZG7	N	Uranium	16.00		pCi/L
	5/19/80	H000BZG8	N	Uranium	17.00		pCi/L
	6/13/80	H000BZG9	N	Uranium	6.90		pCi/L
	7/16/80	H000BZH0	N	Uranium	6.90		pCi/L
	8/13/80	H000BZH1	N	Uranium	6.90		pCi/L
	9/10/80	H000BZH2	N	Uranium	6.90		pCi/L
	10/07/80	H000BZH3	N	Uranium	18.00		pCi/L
	11/05/80	H000BZH4	N	Uranium	15.00		pCi/L
	1/09/81	H000BZH5	N	Uranium	6.90		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-1	4/08/81	H000BZH6	N	Uranium	6.90		pCi/L
	6/24/81	H000BZH7	N	Uranium	6.00		pCi/L
	9/16/81	H000BZH8	N	Uranium	13.00		pCi/L
	1/13/82	H000BZH9	N	Uranium	6.70		pCi/L
	4/06/82	H000BZJ0	N	Uranium	6.70		pCi/L
	6/14/82	H000BZJ1	N	Uranium	6.70		pCi/L
	9/20/82	H000BZJ2	N	Uranium	10.00		pCi/L
	11/29/82	H000BZJ3	N	Uranium	6.70		pCi/L
	3/21/83	H000BZJ4	N	Uranium	6.70		pCi/L
	6/20/83	H000BZJ5	N	Cesium-137	-12.00		pCi/L
				Uranium	17.00		pCi/L
	9/19/83	H000BZJ6	N	Uranium	6.70		pCi/L
	12/05/83	H000BZJ7	N	Uranium	6.70		pCi/L
	3/23/84	H000BZJ8	N	Uranium	14.00		pCi/L
	6/04/84	H000BZJ9	N	Uranium	11.00		pCi/L
	9/24/84	H000BZK0	N	Uranium	10.00		pCi/L
	1/03/85	H000BZK1	N	Uranium	2.50		pCi/L
	1/28/85	H000BZK3	N	Uranium	120.00		pCi/L
	4/08/85	H000BZK5	N	Uranium	9.60		pCi/L
	7/15/85	H000BZK7	N	Uranium	15.00		pCi/L
	12/27/85	H000BZK8	N	Uranium	13.00		pCi/L
	1/29/86	H000BZK9	N	Uranium	8.90		pCi/L
	4/28/86	H000BZL0	N	Uranium	11.00		pCi/L
	7/14/86	H000BZL2	N	Uranium	5.30		pCi/L
	10/10/86	H000BZL4	N	Uranium	8.30		pCi/L
	1/08/87	H000BZL5	N	Cesium-137	.32 U	4.33	pCi/L
				Uranium	6.80	2.06	pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-1	4/02/87	H000BZL6	N	Cesium-137	4.54 U	7.42	pCi/L
				Uranium	6.91	1.87	pCi/L
	7/21/87	H000BZL7	N	Cesium-137	-2.56 U	5.43	pCi/L
				Uranium	7.00	1.89	pCi/L
	10/15/87	H000BZL8	N	Cesium-137	-3.79 U	6.40	pCi/L
				Uranium	8.41	2.29	pCi/L
	7/22/94	B0C1X8	N	Uranium	53.30	16.34	ug/L
	10/26/95	B0GGB5	N	Uranium	81.04	24.88	ug/L
	6/18/96	B0HX33	N	Uranium	55.72	15.75	ug/L
	8/12/97	B0LN31	N	Uranium	189.00	25.40	ug/L
399-3-10	10/01/76	H000BZL9	N	Strontium-90	.00		pCi/L
	10/27/76	H000BZM0	N	Uranium	140.00		pCi/L
	12/02/76	H000BZM1	N	Uranium	36.00		pCi/L
	1/05/77	H000BZM2	N	Uranium	40.00		pCi/L
	1/25/77	H000BZM3	N	Cesium-137	.35		pCi/L
				Uranium	37.00		pCi/L
	2/09/77	H000BZM4	N	Uranium	16.00		pCi/L
	3/04/77	H000BZM5	N	Uranium	14.00		pCi/L
	3/30/77	H000BZM6	N	Uranium	13.00		pCi/L
	4/29/77	H000BZM7	N	Uranium	28.00		pCi/L
	11/02/77	H000BZN7	N	Cesium-137	14.00		pCi/L
	1/04/78	H000BZP1	N	Strontium-90	2.90		pCi/L
	2/07/78	H000BZP2	N	Strontium-90	3.60		pCi/L
	3/01/78	H000BZP3	N	Cesium-137	15.00		pCi/L
				Strontium-90	1.10		pCi/L
				Uranium	24.00		pCi/L
	3/24/78	H000BZP4	N	Uranium	23.00		pCi/L
	4/26/78	H000BZP5	N	Strontium-90	.45		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	4/26/78	H000BZP5	N	Uranium	26.00		pCi/L
	5/16/78	H000BZP6	N	Strontium-90	2300.00		pCi/L
				Uranium	26.00		pCi/L
		H000BZP7	N	Strontium-90	.29		pCi/L
	6/19/78	H000BZP8	N	Strontium-90	.15		pCi/L
				Uranium	27.00		pCi/L
	7/11/78	H000BZP9	N	Uranium	32.00		pCi/L
	8/07/78	H000BZQ0	N	Uranium	32.00		pCi/L
	9/14/78	H000BZQ1	N	Uranium	41.00		pCi/L
	10/13/78	H000BZQ2	N	Uranium	6.90		pCi/L
	11/08/78	H000BZQ3	N	Uranium	38.00		pCi/L
	11/28/78	H000BZQ4	N	Uranium	46.00		pCi/L
	1/08/79	H000BZQ5	N	Strontium-90	3.20		pCi/L
				Uranium	38.00		pCi/L
	1/24/79	H000BZQ6	N	Strontium-90	7.20		pCi/L
				Uranium	16.00		pCi/L
	2/22/79	H000BZQ7	N	Strontium-90	13.00		pCi/L
				Uranium	20.00		pCi/L
	3/19/79	H000BZQ8	N	Strontium-90	2.90		pCi/L
				Uranium	17.00		pCi/L
	4/17/79	H000BZQ9	N	Strontium-90	3.90		pCi/L
				Uranium	21.00		pCi/L
	5/16/79	H000BZR0	N	Strontium-90	3.00		pCi/L
				Uranium	38.00		pCi/L
	6/13/79	H000BZR1	N	Strontium-90	3.00		pCi/L
				Uranium	25.00		pCi/L
	7/10/79	H000BZR2	N	Strontium-90	3.70		pCi/L
				Uranium	28.00		pCi/L
	8/07/79	H000BZR3	N	Strontium-90	4.10		pCi/L
				Uranium	47.00		pCi/L
	9/04/79	H000BZR4	N	Strontium-90	4.20		pCi/L
				Uranium	40.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	10/11/79	H000BZR5	N	Strontium-90	2.60		pCi/L
				Uranium	41.00		pCi/L
	11/07/79	H000BZR6	N	Strontium-90	6.60		pCi/L
				Uranium	29.00		pCi/L
	12/03/79	H000BZR7	N	Strontium-90	13.00		pCi/L
				Uranium	31.00		pCi/L
	1/11/80	H000BZR8	N	Strontium-90	2.20		pCi/L
				Uranium	14.00		pCi/L
	1/30/80	H000BZR9	N	Strontium-90	3.40		pCi/L
				Uranium	21.00		pCi/L
	2/27/80	H000BZS0	N	Strontium-90	3.60		pCi/L
	4/09/80	H000BZS1	N	Strontium-90	3.10		pCi/L
				Uranium	16.00		pCi/L
	4/23/80	H000BZS2	N	Strontium-90	3.20		pCi/L
				Uranium	12.00		pCi/L
	6/13/80	H000BZS3	N	Strontium-90	3.20		pCi/L
				Uranium	19.00		pCi/L
	7/16/80	H000BZS4	N	Strontium-90	5.30		pCi/L
				Uranium	18.00		pCi/L
	8/13/80	H000BZS5	N	Strontium-90	6.90		pCi/L
				Uranium	14.00		pCi/L
	9/10/80	H000BZS6	N	Strontium-90	2.30		pCi/L
				Uranium	31.00		pCi/L
	10/07/80	H000BZS7	N	Strontium-90	1.60		pCi/L
				Uranium	40.00		pCi/L
	11/05/80	H000BZS8	N	Strontium-90	5.00		pCi/L
				Uranium	40.00		pCi/L
	1/09/81	H000BZT0	N	Strontium-90	4.60		pCi/L
				Uranium	19.00		pCi/L
	1/29/81	H000BZT1	N	Strontium-90	5.80		pCi/L
				Uranium	16.00		pCi/L
	3/11/81	H000BZT2	N	Strontium-90	2.30		pCi/L
				Uranium	15.00		pCi/L
	3/24/81	H000BZT3	N	Strontium-90	2.80		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-10	3/24/81	H000BZT3	N	Uranium	19.00		pCi/L
	4/24/81	H000BZT4	N	Strontium-90	11.00		pCi/L
				Uranium	12.00		pCi/L
	6/03/81	H000BZT5	N	Strontium-90	1.90		pCi/L
				Uranium	11.00		pCi/L
	6/22/81	H000BZT6	N	Strontium-90	5.30		pCi/L
				Uranium	17.00		pCi/L
	7/22/81	H000BZT7	N	Strontium-90	1.90		pCi/L
				Uranium	20.00		pCi/L
	8/25/81	H000BZT8	N	Strontium-90	3.00		pCi/L
				Uranium	24.00		pCi/L
	9/14/81	H000BZT9	N	Strontium-90	5.10		pCi/L
				Uranium	23.00		pCi/L
	10/14/81	H000BZV0	N	Strontium-90	12.00		pCi/L
				Uranium	30.00		pCi/L
	11/04/81	H000BZV1	N	Strontium-90	8.50		pCi/L
				Uranium	31.00		pCi/L
	1/07/82	H000BZV2	N	Strontium-90	11.00		pCi/L
				Uranium	16.00		pCi/L
	2/05/82	H000BZV3	N	Strontium-90	7.50		pCi/L
				Uranium	16.00		pCi/L
	4/23/82	H000BZV4	N	Strontium-90	2.60		pCi/L
				Uranium	6.70		pCi/L
	10/19/82	H000BZV5	N	Strontium-90	14.00		pCi/L
				Uranium	26.00		pCi/L
	3/21/83	H000BZV6	N	Strontium-90	1.60		pCi/L
				Uranium	6.70		pCi/L
	6/20/83	H000BZV7	N	Cesium-137	-11.00		pCi/L
				Strontium-90	1.50		pCi/L
				Uranium	13.00		pCi/L
	9/19/83	H000BZV8	N	Strontium-90	1.70		pCi/L
				Uranium	12.00		pCi/L
	12/05/83	H000BZV9	N	Strontium-90	1.20		pCi/L
				Uranium	20.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	3/23/84	H000BZW0	N	Strontium-90	-.28		pCi/L
				Uranium	17.00		pCi/L
	6/04/84	H000BZW1	N	Strontium-90	1.20		pCi/L
				Uranium	12.00		pCi/L
	10/12/84	H000BZW2	N	Strontium-90	-3.60		pCi/L
				Uranium	22.00		pCi/L
	12/28/84	H000BZW3	N	Strontium-90	1.30		pCi/L
				Uranium	16.00		pCi/L
	1/24/85	H000BZW4	N	Uranium	31.00		pCi/L
		H000BZW5	N	Strontium-90	1.90		pCi/L
	4/15/85	H000BZW6	N	Strontium-90	.27		pCi/L
				Uranium	18.00		pCi/L
	7/01/85	H000BZW8	N	Barium	37.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	77.00		ug/L
		H000BZW9	N	Barium	81.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	72.00		ug/L
		H000BZX0	N	Barium	48.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00		ug/L
				Lead	72.00		ug/L
		H000BZX1	N	Barium	54.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	89.00		ug/L
	7/15/85	H000BZX2	N	Strontium-90	5.20		pCi/L
				Uranium	21.00		pCi/L
	7/30/85	H000BZX3	N	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	38.00		ug/L
				Lead	71.00		ug/L
		H000BZX4	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	97.00		ug/L
		H000BZX5	N	Barium	183.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	71.00		ug/L
		H000BZX6	N	Barium	50.00		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	7/30/85	H000BZX6	N	Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	55.00		ug/L
	8/22/85	H000BZX7	N	Barium	40.00		ug/L
				Cadmium	3.00		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
		H000BZX8	N	Barium	39.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
		H000BZX9	N	Barium	40.00		ug/L
				Cadmium	2.00		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
		H000BZY0	N	Barium	39.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	9/30/85	H000BZY1	N	Barium	41.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	10/23/85	H000BZY2	N	Barium	44.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
		H000BZY3	N	Barium	46.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	11/21/85	H000BZY4	N	Strontium-90	2.60		pCi/L
				Uranium	39.00		pCi/L
		H000BZY6	N	Barium	47.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	1/16/86	H000BZY7	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	1/30/86	H000BZY8	N	Strontium-90	2.20		pCi/L
				Uranium	27.00		pCi/L
	2/19/86	H000BZY9	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	3/14/86	H000BZZ0	N	Barium	56.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/17/86	H000BZZ1	N	Strontium-90	.89 U		pCi/L
				Uranium	17.00		pCi/L
		H000BZZ2	N	Barium	51.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	5/22/86	H000BZZ3	N	Barium	51.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	6/23/86	H000BZZ4	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/14/86	H000BZZ6	N	Strontium-90	5.63		pCi/L
				Uranium	.42 U		pCi/L
	7/22/86	H000BZZ7	N	Barium	51.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/29/86	H000BZZ8	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	9/19/86	H000BZZ9	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000BZZ9F	Y	Barium	44.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	10/22/86	H000C001	N	Strontium-90	3.90		pCi/L
				Uranium	19.00		pCi/L
		H000C002	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C002F	Y	Barium	41.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	11/11/86	H000C003	N	Barium	44.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	11/11/86	H000C003	N	Lead	5.00 U		ug/L
		H000C003F	Y	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	12/09/86	H000C004	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C004F	Y	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	1/22/87	H000C005	N	Cesium-137	6.20	4.18	pCi/L
				Strontium-90	.77 U	.88	pCi/L
				Uranium	27.30	7.22	pCi/L
		H000C006	N	Barium	53.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C006F	Y	Barium	53.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/03/87	H000C007	N	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C007F	Y	Barium	39.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	3/29/87	H000C008	N	Barium	44.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C008F	Y	Barium	48.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/14/87	H000C009	N	Cesium-137	-4.48 U	7.10	pCi/L
				Strontium-90	.20 U	.66	pCi/L
				Uranium	13.90	3.57	pCi/L
		H000C010	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C010F	Y	Barium	46.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-10	6/25/87	H000C011	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C011F	Y	Barium	45.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/21/87	H000C012	N	Cesium-137	-2.66 U	4.99	pCi/L
				Strontium-90	.13 U	65	pCi/L
				Uranium	17.40	4.58	pCi/L
	8/13/87	H000C013	N	Barium	44.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C013F	Y	Barium	49.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	10/19/87	H000C014	N	Cesium-137	-1.92 U	5.57	pCi/L
				Strontium-90	.43 U	.70	pCi/L
				Uranium	44.10	11.50	pCi/L
	11/20/87	H000C015	N	Barium	54.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	76.70	18.80	ug/L
		H000C015F	Y	Barium	60.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/08/88	H000C016	N	Strontium-90	.21 U	.77	pCi/L
				Uranium	27.80	7.76	pCi/L
	5/09/88	H000C017	N	Strontium-90	-.07 U	.62	pCi/L
				Uranium	12.70	3.63	pCi/L
		H000C018	N	Barium	35.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C018F	Y	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/17/88	H000C019	N	Strontium-90	.08 U	.70	pCi/L
				Uranium	20.50	5.90	pCi/L
		H000C020	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	8/17/88	H000C020	N	Lead	5.00 U		ug/L
		H000C020F	Y	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	12/02/88	H000C021	N	Strontium-90	-.43 U	.53	pCi/L
				Uranium	25.70	6.91	pCi/L
	12/09/88	H000C022	N	Barium	46.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	27.70	7.61	pCi/L
		H000C022F	Y	Barium	50.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	6/02/89	H000C023	N	Barium	34.00	4.32	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	8.58	2.47	pCi/L
		H000C023F	Y	Barium	36.00	4.50	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	6/12/89	H000C027	N	Strontium-90	-.28 U	.56	pCi/L
	12/19/89	H000C028	N	Strontium-90	.30 U	.66	pCi/L
		H000C029	N	Barium	39.00	4.78	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	17.60	4.80	pCi/L
		H000C029F	Y	Barium	38.00	4.69	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	7/12/91	H00071W2	N	Barium	46.00 Y	6.35	ug/L
				Cadmium	10.00 UY		ug/L
				Chromium	20.00 UY		ug/L
				Lead	5.00 U		ug/L
				Uranium	17.10	5.96	ug/L
		H00071W2F	Y	Barium	44.00	6.07	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	12/09/91	B01F07	N	Barium	43.00		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	12.14 U		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	12/09/91	B01F07	N	Chromium	6.00		ug/L
				Lead	4.20		ug/L
				Strontium-90	.51 UJ		pCi/L
		B01F08	Y	Barium	45.10		ug/L
				Cadmium	1.00		ug/L
				Chromium	8.40		ug/L
				Lead	2.00		ug/L
	12/18/91	B01FS4	N	Barium	47.00	6.49	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	20.10	5.57	ug/L
		B01FS5	N	Barium	48.00	6.62	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	5/13/92	B062W8	N	Barium	52.60 E		ug/L
				Cadmium	2.00		ug/L
				Chromium	20.60		ug/L
				Lead	1.00		ug/L
		B062W9	Y	Barium	46.60		ug/L
				Cadmium	1.00		ug/L
				Chromium	5.00		ug/L
				Lead	1.80 W		ug/L
	7/14/92	B07070	N	Barium	42.00 G	5.80	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 U		ug/L
				Uranium	14.40	4.13	ug/L
		B07071	Y	Barium	43.00 G	5.93	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
	12/11/92	B07P90	N	Uranium	24.00 U		ug/L
					24.00 U	60.00	ug/L
	2/16/93	B085H0	N	Barium	50.00	6.90	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	9.68	2.71	ug/L
		B085H1	Y	Barium	50.00	6.90	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	9/03/93	B09659	N	Barium	52.00	.16	ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	9/03/93	B09659	N	Cadmium	4.70 U		ug/L
				Chromium	6 40 L	1 66	ug/L
				Lead	51 UQ		ug/L
				Uranium	25.90	7.08	ug/L
		B09660	N	Barium	53.00	.16	ug/L
				Cadmium	4.70 U		ug/L
				Chromium	9.40 L	2.44	ug/L
				Lead	.68 LQ	.14	ug/L
				Uranium	23.20	6.35	ug/L
		B09661	Y	Barium	53.00	.16	ug/L
				Cadmium	4.70 U		ug/L
				Chromium	5.42 U		ug/L
				Lead	.51 UQ		ug/L
		B09662	Y	Barium	51.00	.15	ug/L
				Cadmium	4.70 U		ug/L
				Chromium	5.42 U		ug/L
				Lead	.73 LQ	.15	ug/L
	6/23/94	B0BYM2	N	Barium	67.00	16.10	ug/L
				Cadmium	3.00 U		ug/L
				Chromium	21.00	10.10	ug/L
				Lead	4.70 BL	1.41	ug/L
				Uranium	20.30	5.81	ug/L
		B0BYM3	Y	Barium	61.00	14.60	ug/L
				Cadmium	3.00 U		ug/L
				Chromium	11.00 U		ug/L
				Lead	2.60 BL	78	ug/L
	10/10/94	B0D384	N	Barium	62.00	29.80	ug/L
				Cadmium	3.30 U		ug/L
				Chromium	17.00 L	7.14	ug/L
				Lead	2.70 LQ	.81	ug/L
				Uranium	17.60	4.98	ug/L
		B0D385	Y	Barium	59.00	28.30	ug/L
				Cadmium	3.30 U		ug/L
				Chromium	4.50 U		ug/L
				Lead	1.70 LQ	.51	ug/L
	6/05/95	B0FLT9	N	Barium	57.00	27.40	ug/L
				Cadmium	3.30 U		ug/L
				Chromium	9.70 L	4.07	ug/L
				Lead	1.50 U		ug/L
				Uranium	27.80	7.83	ug/L
		B0FLV0	Y	Barium	58.00	27.80	ug/L
				Cadmium	1.00 BL	.33	ug/L
				Chromium	4.50 U		ug/L
				Lead	1.50 U		ug/L
	10/04/95	B0GMB1	N	Uranium	62.53	17.89	ug/L
		B0GMB2	Y	Barium	56.00	26.90	ug/L
				Cadmium	.98 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-10	10/04/95	B0GMB2	Y	Chromium	3.70 U		ug/L
				Lead	.88 U		ug/L
	6/05/96	B0HV88	N	Uranium	36.29	10.46	ug/L
		B0HV89	Y	Barium	33.00	15.80	ug/L
				Cadmium	3.20 U		ug/L
				Chromium	1.80 U		ug/L
				Lead	1.70 U		ug/L
	8/08/97	B0LN32	N	Uranium	74.20	16.30	ug/L
399-3-11	10/01/76	H000C031	N	Strontium-90	.01		pCi/L
	10/27/76	H000C032	N	Uranium	39.00		pCi/L
	12/02/76	H000C033	N	Uranium	48.00		pCi/L
	1/05/77	H000C034	N	Uranium	35.00		pCi/L
	1/25/77	H000C035	N	Cesium-137	.18		pCi/L
				Uranium	44.00		pCi/L
	2/09/77	H000C036	N	Uranium	36.00		pCi/L
	3/04/77	H000C038	N	Uranium	34.00		pCi/L
	3/30/77	H000C039	N	Uranium	18.00		pCi/L
	4/29/77	H000C041	N	Uranium	39.00		pCi/L
	11/02/77	H000C054	N	Cesium-137	15.00		pCi/L
	1/04/78	H000C058	N	Strontium-90	9.50		pCi/L
	2/07/78	H000C059	N	Strontium-90	7.00		pCi/L
	3/01/78	H000C060	N	Cesium-137	15.00		pCi/L
				Strontium-90	2.70		pCi/L
				Uranium	23.00		pCi/L
	3/24/78	H000C061	N	Uranium	26.00		pCi/L
	4/26/78	H000C062	N	Strontium-90	5.30		pCi/L
				Uranium	26.00		pCi/L
	5/16/78	H000C063	N	Strontium-90	2.70		pCi/L
				Uranium	26.00		pCi/L
		H000C064	N	Strontium-90	4700.00		pCi/L
	6/19/78	H000C065	N	Strontium-90	4.40		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-11	6/19/78	H000C065	N	Uranium	19.00		pCi/L
	8/07/78	H000C066	N	Uranium	15.00		pCi/L
	6/19/79	H000C067	N	Strontium-90	9.10		pCi/L
	7/11/79	H000C068	N	Strontium-90	7.70		pCi/L
				Uranium	14.00		pCi/L
	8/07/79	H000C069	N	Strontium-90	7.50		pCi/L
				Uranium	22.00		pCi/L
	9/04/79	H000C070	N	Strontium-90	5.80		pCi/L
				Uranium	16.00		pCi/L
	10/11/79	H000C071	N	Strontium-90	9.60		pCi/L
				Uranium	17.00		pCi/L
	11/07/79	H000C072	N	Strontium-90	7.00		pCi/L
				Uranium	19.00		pCi/L
	12/03/79	H000C073	N	Strontium-90	18.00		pCi/L
				Uranium	21.00		pCi/L
	1/11/80	H000C074	N	Strontium-90	4.90		pCi/L
				Uranium	12.00		pCi/L
	1/30/80	H000C075	N	Strontium-90	4.80		pCi/L
				Uranium	19.00		pCi/L
	2/27/80	H000C076	N	Strontium-90	5.20		pCi/L
	3/31/80	H000C077	N	Strontium-90	17.00		pCi/L
				Uranium	190.00		pCi/L
	4/23/80	H000C078	N	Strontium-90	5.50		pCi/L
				Uranium	23.00		pCi/L
	5/19/80	H000C079	N	Uranium	41.00		pCi/L
	6/13/80	H000C080	N	Strontium-90	4.60		pCi/L
				Uranium	21.00		pCi/L
	7/16/80	H000C081	N	Strontium-90	3.30		pCi/L
				Uranium	19.00		pCi/L
	9/11/80	H000C082	N	Strontium-90	4.30		pCi/L
				Uranium	23.00		pCi/L
	10/07/80	H000C083	N	Strontium-90	6.80		pCi/L
				Uranium	27.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-11	11/05/80	H000C084	N	Strontium-90	2.20		pCi/L
				Uranium	28.00		pCi/L
	1/14/81	H000C085	N	Strontium-90	22.00		pCi/L
				Uranium	37.00		pCi/L
	2/04/81	H000C086	N	Strontium-90	1.70		pCi/L
				Uranium	25.00		pCi/L
	3/11/81	H000C087	N	Uranium	18.00		pCi/L
	4/08/81	H000C088	N	Strontium-90	2.20		pCi/L
				Uranium	20.00		pCi/L
	4/24/81	H000C089	N	Strontium-90	2.10		pCi/L
				Uranium	25.00		pCi/L
	6/02/81	H000C090	N	Strontium-90	2.10		pCi/L
				Uranium	27.00		pCi/L
	6/22/81	H000C091	N	Strontium-90	2.30		pCi/L
				Uranium	28.00		pCi/L
	7/22/81	H000C092	N	Strontium-90	6.20		pCi/L
				Uranium	35.00		pCi/L
	8/25/81	H000C093	N	Strontium-90	7.10		pCi/L
				Uranium	20.00		pCi/L
	9/14/81	H000C094	N	Strontium-90	9.50		pCi/L
				Uranium	27.00		pCi/L
	10/14/81	H000C095	N	Strontium-90	8.50		pCi/L
				Uranium	34.00		pCi/L
	11/04/81	H000C096	N	Strontium-90	8.80		pCi/L
				Uranium	28.00		pCi/L
	1/13/82	H000C097	N	Strontium-90	15.00		pCi/L
				Uranium	32.00		pCi/L
	2/05/82	H000C098	N	Strontium-90	12.00		pCi/L
				Uranium	29.00		pCi/L
	4/23/82	H000C099	N	Strontium-90	9.80		pCi/L
				Uranium	15.00		pCi/L
	10/19/82	H000C0B0	N	Strontium-90	8.20		pCi/L
				Uranium	24.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-11	3/22/83	H000C0B1	N	Strontium-90	7.30		pCi/L
				Uranium	20.00		pCi/L
	6/20/83	H000C0B2	N	Cesium-137	-7.50		pCi/L
				Strontium-90	5.50		pCi/L
				Uranium	19.00		pCi/L
	9/21/83	H000C0B3	N	Strontium-90	5.60		pCi/L
				Uranium	18.00		pCi/L
	12/05/83	H000C0B4	N	Strontium-90	4.20		pCi/L
				Uranium	29.00		pCi/L
	2/06/84	H000C0B5	N	Strontium-90	8.80		pCi/L
				Uranium	23.00		pCi/L
	4/13/84	H000C0B6	N	Strontium-90	5.80		pCi/L
				Uranium	16.00		pCi/L
	8/21/84	H000C0B7	N	Strontium-90	9.50		pCi/L
				Uranium	19.00		pCi/L
	10/12/84	H000C0B8	N	Strontium-90	7.00		pCi/L
				Uranium	18.00		pCi/L
	4/19/85	H000C0B9	N	Strontium-90	7.40		pCi/L
		H000C0C0	N	Uranium	48.00		pCi/L
	7/15/85	H000C0C1	N	Strontium-90	8.00		pCi/L
				Uranium	7.30		pCi/L
	1/29/86	H000C0C2	N	Strontium-90	6.90		pCi/L
				Uranium	18.00		pCi/L
	4/24/86	H000C0C3	N	Strontium-90	8.21		pCi/L
				Uranium	64.00		pCi/L
	7/14/86	H000C0C5	N	Strontium-90	6.65		pCi/L
				Uranium	27.00		pCi/L
	10/13/86	H000C0C7	N	Strontium-90	9.03		pCi/L
				Uranium	12.00		pCi/L
	1/08/87	H000C0C8	N	Cesium-137	1.13 U	8.88	pCi/L
				Strontium-90	6.97	2.28	pCi/L
				Uranium	28.90	7.78	pCi/L
	4/07/87	H000C0C9	N	Cesium-137	-8.26 U	7.83	pCi/L
				Strontium-90	6.92	2.70	pCi/L
				Uranium	20.50	5.34	pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-11	7/23/87	H000C0D0	N	Cesium-137	2.56 U	7.84	pCi/L
				Strontium-90	6.24	2.15	pCi/L
				Uranium	26.30	6.96	pCi/L
	10/20/87	H000C0D1	N	Cesium-137	-3.89 U	7.43	pCi/L
				Strontium-90	6.72	2.20	pCi/L
				Uranium	22.10	5.71	pCi/L
	2/12/88	H000C0D2	N	Cesium-137	.32 U	4.31	pCi/L
				Strontium-90	6.43	2.22	pCi/L
				Uranium	22.40	6.27	pCi/L
	6/01/88	H000C0D3	N	Cesium-137	.85 U	3.74	pCi/L
				Strontium-90	5.70	1.76	pCi/L
				Uranium	32.50	9.05	pCi/L
	8/17/88	H000C0D4	N	Cesium-137	2.54 U	6.49	pCi/L
				Strontium-90	7.29	2.06	pCi/L
				Uranium	20.30	5.63	pCi/L
	11/29/88	H000C0D5	N	Cesium-137	1.06 U	4.58	pCi/L
				Strontium-90	3.95	1.38	pCi/L
				Uranium	16.00	4.45	pCi/L
	1/16/92	B01DL4	N	Barium	43.30		ug/L
				Cadmium	1.00		ug/L
				Cesium-137	12.04 U		pCi/L
				Chromium	2.00		ug/L
				Lead	5.80		ug/L
				Strontium-90	-.25 U		pCi/L
		B01DL5	Y	Barium	43.30		ug/L
				Cadmium	1.00		ug/L
				Chromium	2.00		ug/L
				Lead	2.00		ug/L
	6/11/92	B062D6	N	Barium	43.40		ug/L
				Cadmium	1.40		ug/L
				Chromium	3.70		ug/L
				Lead	1.40 W		ug/L
		B062D7	Y	Barium	51.00		ug/L
				Cadmium	1.50		ug/L
				Chromium	4.90		ug/L
				Lead	1.00		ug/L
	9/16/92	B075Y7	N	Barium	41.60		ug/L
				Cadmium	1.50		ug/L
				Cesium-137	15.00 UJ		pCi/L
				Chromium	22.20		ug/L
				Lead	4.00		ug/L
				Strontium-90	-.12 UJ		pCi/L
		B075Y8	Y	Barium	40.90		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-11	9/16/92	B075Y8	Y	Cadmium	1.50		ug/L
				Chromium	2.60		ug/L
				Lead	1.90		ug/L
	11/12/92	B07P92	N	Uranium	24.00		ug/L
					24.00	4.40	ug/L
	3/03/93	B086Q8	N	Uranium	34.00		ug/L
					34.00	6.30	ug/L
		B086S3	N	Uranium	38.00		ug/L
					38.00	7.10	ug/L
	9/22/93	B095K7	N	Uranium	24.00		ug/L
					24.00	4.30	ug/L
		B095K8	N	Uranium	27.00		ug/L
					27.00	4.70	ug/L
	6/22/94	B0BZL0	N	Barium	44.20		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	7.20		ug/L
				Uranium	96.50	14.50	ug/L
		B0BZL1	Y	Barium	45.60		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	3.40		ug/L
		B0BZL2	N	Barium	44.20		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	7.10		ug/L
				Uranium	95.70	14.40	ug/L
		B0BZL3	Y	Barium	45.10		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	3.00		ug/L
	9/30/94	B0C1Y5	N	Cesium-137	-.96 G	6.42	pCi/L
				Strontium-90	4.20 Y	1.02	pCi/L
				Uranium	25.20	7.11	ug/L
	10/06/94	B0D4W8	N	Uranium	27.00		ug/L
					27.00	4.10	ug/L
		B0D4X1	N	Uranium	30.00		ug/L
					30.00	4.60	ug/L
	12/20/95	B0GHX4	N	Cesium-137	.39 U	1.65	pCi/L
				Strontium-90	8.70 G	1.95	pCi/L
				Uranium	129.70 G	38.12	ug/L
	8/26/96	B0HX35	N	Cesium-137	-.11 U	1.36	pCi/L
				Strontium-90	2.97	.80	pCi/L
	9/02/97	B0LN33	N	Barium	46.80		ug/L
				Cadmium	3.00 U		ug/L
				Chromium	6.50 B		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-11	9/02/97	B0LN33	N	Strontium-90	3.11	.78	pCi/L
				Uranium	65.90	14.50	ug/L
		B0LN34	Y	Barium	45.80 E		ug/L
				Cadmium	2.90 U		ug/L
				Chromium	6.00 B		ug/L
				Strontium-90	3.14	.80	pCi/L
		B0LN35	N	Cesium-137	.46 UJ	2.36	pCi/L
399-3-12	2/04/81	H000C0D7	N	Uranium	25.00		pCi/L
	3/11/81	H000C0D8	N	Strontium-90	1.90		pCi/L
				Uranium	30.00		pCi/L
	3/24/81	H000C0D9	N	Strontium-90	2.70		pCi/L
				Uranium	18.00		pCi/L
	4/24/81	H000C0F0	N	Cesium-137	2.10		pCi/L
				Strontium-90	3.00		pCi/L
				Uranium	43.00		pCi/L
	6/03/81	H000C0F1	N	Strontium-90	2.70		pCi/L
				Uranium	50.00		pCi/L
	1/07/82	H000C0F2	N	Strontium-90	15.00		pCi/L
				Uranium	36.00		pCi/L
	2/05/82	H000C0F3	N	Strontium-90	2.00		pCi/L
				Uranium	26.00		pCi/L
	3/10/82	H000C0F4	N	Strontium-90	2.90		pCi/L
				Uranium	34.00		pCi/L
	4/06/82	H000C0F5	N	Strontium-90	2.00		pCi/L
				Uranium	25.00		pCi/L
	4/23/82	H000C0F6	N	Strontium-90	2.50		pCi/L
				Uranium	14.00		pCi/L
	5/28/82	H000C0F7	N	Strontium-90	2.30		pCi/L
				Uranium	15.00		pCi/L
	6/15/82	H000C0F8	N	Strontium-90	63.00		pCi/L
				Uranium	16.00		pCi/L
	7/16/82	H000C0F9	N	Uranium	13.00		pCi/L
	9/20/82	H000C0G0	N	Strontium-90	2.50		pCi/L
				Uranium	49.00		pCi/L
	10/19/82	H000C0G1	N	Strontium-90	4.20		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-12	10/19/82	H000C0G1	N	Uranium	44.00		pCi/L
	11/24/82	H000C0G2	N	Strontium-90	1.80		pCi/L
				Uranium	38.00		pCi/L
	1/31/83	H000C0G3	N	Strontium-90	2.90		pCi/L
				Uranium	27.00		pCi/L
	2/15/83	H000C0G4	N	Strontium-90	1.70		pCi/L
				Uranium	24.00		pCi/L
	3/21/83	H000C0G5	N	Strontium-90	3.50		pCi/L
				Uranium	23.00		pCi/L
	4/18/83	H000C0G6	N	Strontium-90	6.00		pCi/L
				Uranium	15.00		pCi/L
	5/19/83	H000C0G7	N	Strontium-90	1.70		pCi/L
				Uranium	14.00		pCi/L
	6/20/83	H000C0G8	N	Cesium-137	-3.80		pCi/L
				Strontium-90	3.10		pCi/L
				Uranium	17.00		pCi/L
	7/21/83	H000C0G9	N	Strontium-90	2.20		pCi/L
				Uranium	25.00		pCi/L
	8/17/83	H000C0H0	N	Strontium-90	2.00		pCi/L
				Uranium	34.00		pCi/L
	9/21/83	H000C0H1	N	Strontium-90	1.90		pCi/L
				Uranium	34.00		pCi/L
	9/30/83	H000C0H2	N	Strontium-90	1.50		pCi/L
				Uranium	32.00		pCi/L
	10/31/83	H000C0H3	N	Strontium-90	3.40		pCi/L
				Uranium	27.00		pCi/L
	12/02/83	H000C0H4	N	Strontium-90	1.80		pCi/L
				Uranium	30.00		pCi/L
	3/23/84	H000C0H5	N	Strontium-90	1.20		pCi/L
				Uranium	21.00		pCi/L
	10/12/84	H000C0H6	N	Strontium-90	-2.00		pCi/L
				Uranium	34.00		pCi/L
	12/28/84	H000C0H7	N	Strontium-90	1.00		pCi/L
				Uranium	66.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-12	1/28/85	H000C0H8	N	Strontium-90	-1.20		pCi/L
				Uranium	66.00		pCi/L
		H000C0H9	N	Strontium-90	1.20 U		pCi/L
	4/15/85	H000C0J1	N	Strontium-90	1.60		pCi/L
				Uranium	47.00		pCi/L
	9/12/85	H000C0J3	N	Strontium-90	3.40		pCi/L
				Uranium	36.00		pCi/L
	12/27/85	H000C0J4	N	Strontium-90	.61		pCi/L
				Uranium	21.00		pCi/L
	2/20/86	H000C0J5	N	Strontium-90	1.30		pCi/L
				Uranium	30.00		pCi/L
	4/24/86	H000C0J6	N	Strontium-90	2.50		pCi/L
				Uranium	27.00		pCi/L
	7/15/86	H000C0J9	N	Strontium-90	2.30		pCi/L
				Uranium	22.00		pCi/L
	10/10/86	H000C0K1	N	Strontium-90	1.60		pCi/L
				Uranium	44.00		pCi/L
	1/08/87	H000C0K2	N	Cesium-137	0.00 U	6.25	pCi/L
				Strontium-90	.21 U	.66	pCi/L
				Uranium	27.60	7.35	pCi/L
	4/07/87	H000C0K3	N	Cesium-137			
				Strontium-90			
				Uranium			
	5/07/87	H000C0K4	N	Cesium-137	1.72 U	5.06	pCi/L
				Strontium-90	-.06 U	.64	pCi/L
				Uranium	41.00	10.60	pCi/L
	7/21/87	H000C0K5	N	Cesium-137	-1.51 U	8.82	pCi/L
				Strontium-90	-.04 U	.70	pCi/L
				Uranium	26.50	6.82	pCi/L
	10/19/87	H000C0K6	N	Cesium-137	0.00 U	6.00	pCi/L
				Strontium-90	.67 U	.84	pCi/L
				Uranium	29.20	7.63	pCi/L
	2/11/88	H000C0K7	N	Strontium-90	.11 U	.72	pCi/L
				Uranium	18.30	6.15	pCi/L
	6/01/88	H000C0K8	N	Strontium-90	.05 U	.66	pCi/L
				Uranium	25.60	8.23	pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-12	8/18/88	H000C0K9	N	Strontium-90	-.34 U	.67	pCi/L
				Uranium	24.90	6.86	pCi/L
	11/29/88	H000C0L0	N	Strontium-90	-.24 U	.62	pCi/L
				Uranium	15.30	5.30	pCi/L
	12/09/91	B01DN5	N	Barium	45.00		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	15.10 U		pCi/L
				Chromium	6.00		ug/L
				Lead	2.50 W		ug/L
				Strontium-90	-.11 UJ		pCi/L
		B01DN6	Y	Barium	50.20		ug/L
				Cadmium	1.00		ug/L
				Chromium	9.50		ug/L
				Lead	2.00		ug/L
	4/23/92	B062D9	N	Barium	45.80		ug/L
				Cadmium	2.00		ug/L
				Cesium-137	11.00 UJ		pCi/L
				Chromium	3.70		ug/L
				Lead	1.60		ug/L
				Strontium-90	-1.70 UJ		pCi/L
				Uranium	32.00		ug/L
					32.00	6.10	ug/L
		B062F0	Y	Barium	45.20		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.00		ug/L
				Lead	1.00		ug/L
	9/10/92	B075Z1	N	Barium	45.40		ug/L
				Cadmium	1.50		ug/L
				Cesium-137	13.00 UJ		pCi/L
				Chromium	2.60		ug/L
				Lead	7.30 *		ug/L
				Strontium-90	.28 UJ		pCi/L
		B075Z2	Y	Barium	45.90		ug/L
				Cadmium	1.50		ug/L
				Chromium	2.60		ug/L
				Lead	1.90		ug/L
	11/14/92	B07P94	N	Uranium	29.00		ug/L
					29.00	5.40	ug/L
	2/25/93	B086Q9	N	Uranium	37.00		ug/L
					37.00	7.00	ug/L
	8/27/93	B08ZT1	N	Uranium	3.32	1.04	ug/L
	9/24/93	B095K9	N	Uranium	31.00		ug/L
					31.00	5.50	ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-12	6/22/94	B0BZL4	N	Barium	46.20		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	5.30		ug/L
				Uranium	38.90	5.84	ug/L
		B0BZL5	Y	Barium	45.90		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	3.00		ug/L
	9/30/94	B0C1Y0	N	Uranium	24.50	6.92	ug/L
	8/14/96	B0HYZ8	N	Uranium	76.00	16.70	ug/L
	8/20/97	B0LJR7	N	Uranium	77.60	17.00	ug/L
399-3-2	2/01/59	H000FZQ7	N	Uranium	160.00		pCi/L
	3/01/59	H000FZQ8	N	Uranium	170.00		pCi/L
	4/01/59	H000FZQ9	N	Uranium	120.00		pCi/L
	10/07/76	H000FZR2	N	Cesium-137	4.80		pCi/L
				Strontium-90	1.60		pCi/L
	10/26/76	H000FZR3	N	Uranium	14.00		pCi/L
	12/02/76	H000FZR4	N	Uranium	5.50		pCi/L
	1/26/77	H000FZR6	N	Cesium-137	.45		pCi/L
				Uranium	25.00		pCi/L
	2/09/77	H000FZR7	N	Uranium	10.00		pCi/L
	3/04/77	H000FZR9	N	Uranium	8.20		pCi/L
	3/30/77	H000FZS0	N	Uranium	3.40		pCi/L
	4/29/77	H000FZS2	N	Uranium	14.00		pCi/L
	3/01/78	H000FZT5	N	Cesium-137	20.00		pCi/L
				Uranium	15.00		pCi/L
	3/22/78	H000FZT7	N	Uranium	15.00		pCi/L
	4/26/78	H000FZT8	N	Uranium	16.00		pCi/L
	5/16/78	H000FZT9	N	Uranium	17.00		pCi/L
	6/20/78	H000FZV0	N	Uranium	18.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-2	7/11/78	H000FZV1	N	Uranium	12.00		pCi/L
	8/07/78	H000FZV2	N	Uranium	12.00		pCi/L
	9/14/78	H000FZV3	N	Uranium	10.00		pCi/L
	11/08/78	H000FZV4	N	Uranium	6.90		pCi/L
	11/28/78	H000FZV5	N	Uranium	6.90		pCi/L
	1/08/79	H000FZV6	N	Uranium	6.90		pCi/L
	1/24/79	H000FZV7	N	Uranium	6.90		pCi/L
	2/22/79	H000FZV8	N	Uranium	10.00		pCi/L
	3/19/79	H000FZV9	N	Uranium	10.00		pCi/L
	4/17/79	H000FZW0	N	Uranium	6.90		pCi/L
	5/16/79	H000FZW1	N	Uranium	10.00		pCi/L
	6/19/79	H000FZW2	N	Uranium	6.90		pCi/L
	7/10/79	H000FZW3	N	Uranium	14.00		pCi/L
	8/07/79	H000FZW4	N	Uranium	10.00		pCi/L
	9/04/79	H000FZW5	N	Uranium	6.90		pCi/L
	10/11/79	H000FZW6	N	Uranium	6.90		pCi/L
	11/07/79	H000FZW7	N	Uranium	9.60		pCi/L
	12/03/79	H000FZW8	N	Uranium	6.90		pCi/L
	1/11/80	H000FZW9	N	Uranium	6.90		pCi/L
	1/30/80	H000FZX0	N	Uranium	16.00		pCi/L
	4/09/80	H000FZX2	N	Uranium	11.00		pCi/L
	4/23/80	H000FZX3	N	Uranium	6.90		pCi/L
	5/19/80	H000FZX4	N	Uranium	14.00		pCi/L
	6/25/80	H000FZX5	N	Uranium	22.00		pCi/L
	7/16/80	H000FZX6	N	Uranium	9.60		pCi/L
	9/10/80	H000FZX7	N	Uranium	6.90		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-2	10/07/80	H000FZX8	N	Uranium	6.90		pCi/L
	11/05/80	H000FZX9	N	Uranium	11.00		pCi/L
	1/08/81	H000FZY0	N	Uranium	13.00		pCi/L
	1/29/81	H000FZY1	N	Uranium	18.00		pCi/L
	3/11/81	H000FZY2	N	Uranium	6.90		pCi/L
	4/08/81	H000FZY3	N	Uranium	11.00		pCi/L
	4/24/81	H000FZY4	N	Uranium	6.70		pCi/L
	6/03/81	H000FZY5	N	Uranium	17.00		pCi/L
	6/22/81	H000FZY6	N	Uranium	15.00		pCi/L
	7/22/81	H000FZY7	N	Uranium	26.00		pCi/L
	8/25/81	H000FZY8	N	Uranium	17.00		pCi/L
	9/14/81	H000FZY9	N	Uranium	12.00		pCi/L
	10/14/81	H000FZZ0	N	Uranium	6.70		pCi/L
	11/04/81	H000FZZ1	N	Uranium	6.70		pCi/L
	1/13/82	H000FZZ2	N	Uranium	15.00		pCi/L
	2/05/82	H000FZZ3	N	Uranium	16.00		pCi/L
	4/23/82	H000FZZ4	N	Uranium	14.00		pCi/L
	10/19/82	H000FZZ5	N	Uranium	6.70		pCi/L
	3/22/83	H000FZZ6	N	Uranium	6.70		pCi/L
	6/21/83	H000FZZ7	N	Uranium	11.00		pCi/L
	9/21/83	H000FZZ8	N	Uranium	6.70		pCi/L
	12/06/83	H000FZZ9	N	Uranium	6.70		pCi/L
	3/29/84	H000G000	N	Uranium	10.00		pCi/L
	6/04/84	H000G001	N	Uranium	12.00		pCi/L
	9/26/84	H000G002	N	Uranium	14.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-2	12/21/84	H000G003	N	Uranium	11.00		pCi/L
	1/28/85	H000G004	N	Uranium	15.00		pCi/L
	4/19/85	H000G006	N	Uranium	14.00		pCi/L
	9/12/85	H000G008	N	Uranium	7.10		pCi/L
	12/27/85	H000G009	N	Uranium	15.00		pCi/L
	1/30/86	H000G011	N	Uranium	9.00		pCi/L
	4/28/86	H000G012	N	Uranium	14.00		pCi/L
	7/15/86	H000G014	N	Uranium	13.00		pCi/L
	10/13/86	H000G016	N	Uranium	4.00		pCi/L
	1/08/87	H000G017	N	Cesium-137	1.28 U	5.54	pCi/L
				Uranium	7.04	2.09	pCi/L
	4/02/87	H000G018	N	Cesium-137	4.79 U	5.52	pCi/L
				Uranium	.96	.33	pCi/L
	7/21/87	H000G019	N	Cesium-137	-2.65 U	7.33	pCi/L
				Uranium	8.94	2.39	pCi/L
	10/20/87	H000G020	N	Cesium-137	.32 U	4.31	pCi/L
				Uranium	7.25	1.96	pCi/L
	12/09/91	B01DM9	N	Barium	43.00		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	93.87 U		pCi/L
				Chromium	6.00		ug/L
				Lead	2.20		ug/L
				Strontium-90	-.05 UJ		pCi/L
		B01DN0	Y	Barium	36.80		ug/L
				Cadmium	1.00		ug/L
				Chromium	9.90		ug/L
				Lead	2.90		ug/L
	3/10/92	B06200	N	Barium	35.30		ug/L
				Cadmium	1.00		ug/L
				Cesium-137	15.00 UJ		pCi/L
				Chromium	5.40		ug/L
				Lead	3.10		ug/L
				Strontium-90	-.12 UJ		pCi/L
				Uranium	14.00		ug/L
		B06201	N	Barium	51.80		ug/L
				Cadmium	1.00		ug/L
				Chromium	5.00		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-2	3/10/92	B06201	N	Lead	2.40		ug/L
	9/02/92	B075X9	N	Barium	37.40		ug/L
				Cadmium	1.50		ug/L
				Cesium-137	11.00 UJ		pCi/L
				Chromium	2.60		ug/L
				Lead	3.60 *		ug/L
				Strontium-90	.19 UJ		pCi/L
		B075Y0	Y	Barium	36.70		ug/L
				Cadmium	1.50		ug/L
				Chromium	2.60		ug/L
				Lead	1.90		ug/L
	11/14/92	B07P82	N	Uranium	15.00		ug/L
					15.00	2.70	ug/L
	3/08/93	B086Q7	N	Uranium	21.00		ug/L
					21.00	6.60	ug/L
	9/13/93	B095K6	N	Uranium	26.00		ug/L
					26.00	4.60	ug/L
	6/22/94	B0BZK8	N	Barium	42.00		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	4.80		ug/L
				Uranium	22.30	3.34	ug/L
		B0BZK9	Y	Barium	40.50		ug/L
				Cadmium	2.20 N		ug/L
				Chromium	4.50		ug/L
	6/24/94	B0C1W1	N	Uranium	19.00	6.43	ug/L
	9/17/95	B0GHX2	N	Uranium	25.00	7.14	ug/L
399-3-3	10/05/76	H000C0X7	N	Cesium-137	4.90		pCi/L
				Strontium-90	2.30		pCi/L
	10/26/76	H000C0X8	N	Uranium	19.00		pCi/L
	12/02/76	H000C0X9	N	Uranium	14.00		pCi/L
	1/05/77	H000C0Y0	N	Uranium	23.00		pCi/L
	1/26/77	H000C0Y1	N	Cesium-137	.08		pCi/L
				Uranium	16.00		pCi/L
	2/09/77	H000C0Y2	N	Uranium	12.00		pCi/L
	3/04/77	H000C0Y3	N	Uranium	7.50		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-3	3/30/77	H000C0Y4	N	Uranium	5.50		pCi/L
	4/29/77	H000C0Y5	N	Uranium	22.00		pCi/L
	7/01/77	H000C0Y8	N	Uranium	15.00		pCi/L
	3/01/78	H000C0Z9	N	Cesium-137	15.00		pCi/L
				Uranium	6.90		pCi/L
	3/23/78	H000C100	N	Uranium	8.90		pCi/L
	4/26/78	H000C101	N	Uranium	12.00		pCi/L
	5/16/78	H000C102	N	Uranium	9.60		pCi/L
	6/20/78	H000C103	N	Uranium	10.00		pCi/L
	7/11/78	H000C104	N	Uranium	11.00		pCi/L
	8/07/78	H000C105	N	Uranium	10.00		pCi/L
	9/14/78	H000C106	N	Uranium	6.80		pCi/L
	11/08/78	H000C107	N	Uranium	6.90		pCi/L
	11/28/78	H000C108	N	Uranium	8.90		pCi/L
	1/08/79	H000C109	N	Uranium	6.90		pCi/L
	1/24/79	H000C116	N	Uranium	9.60		pCi/L
	2/22/79	H000C122	N	Uranium	9.60		pCi/L
	3/19/79	H000C126	N	Uranium	6.90		pCi/L
	6/21/79	H000C141	N	Uranium	6.90		pCi/L
	7/10/79	H000C146	N	Uranium	10.00		pCi/L
	8/09/79	H000C155	N	Uranium	6.90		pCi/L
	9/04/79	H000C161	N	Uranium	6.90		pCi/L
	10/11/79	H000C166	N	Uranium	6.90		pCi/L
	11/07/79	H000C167	N	Uranium	6.90		pCi/L
	1/30/80	H000C168	N	Uranium	8.20		pCi/L
	5/19/80	H000C169	N	Uranium	6.90		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-3	6/13/80	H000C170	N	Uranium	6.90		pCi/L
	7/16/80	H000C171	N	Uranium	9.60		pCi/L
	9/11/80	H000C172	N	Uranium	12.00		pCi/L
	10/07/80	H000C173	N	Strontium-90	20.00		pCi/L
				Uranium	11.00		pCi/L
	11/05/80	H000C174	N	Uranium	11.00		pCi/L
	1/14/81	H000C175	N	Uranium	11.00		pCi/L
	2/04/81	H000C176	N	Strontium-90	4.00		pCi/L
				Uranium	6.90		pCi/L
	3/11/81	H000C177	N	Uranium	12.00		pCi/L
	4/08/81	H000C178	N	Uranium	6.90		pCi/L
	4/24/81	H000C179	N	Uranium	6.70		pCi/L
	6/02/81	H000C180	N	Uranium	12.00		pCi/L
	6/22/81	H000C181	N	Uranium	6.00		pCi/L
	7/22/81	H000C182	N	Uranium	12.00		pCi/L
	8/25/81	H000C183	N	Uranium	17.00		pCi/L
	9/14/81	H000C184	N	Uranium	15.00		pCi/L
	10/14/81	H000C185	N	Uranium	12.00		pCi/L
	11/04/81	H000C186	N	Uranium	6.70		pCi/L
	1/13/82	H000C187	N	Uranium	6.70		pCi/L
	2/05/82	H000C188	N	Uranium	6.70		pCi/L
	4/23/82	H000C189	N	Uranium	6.70		pCi/L
	10/19/82	H000C190	N	Uranium	6.70		pCi/L
	3/21/83	H000C191	N	Uranium	6.70		pCi/L
	6/20/83	H000C192	N	Cesium-137	-9.80		pCi/L
				Uranium	11.00		pCi/L
	9/19/83	H000C193	N	Uranium	6.70		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-3	12/05/83	H000C194	N	Uranium	6.70		pCi/L
	4/05/84	H000C195	N	Uranium	12.00		pCi/L
	6/04/84	H000C196	N	Uranium	15.00		pCi/L
	10/12/84	H000C197	N	Uranium	12.00		pCi/L
	12/28/84	H000C198	N	Uranium	10.00		pCi/L
	1/29/85	H000C199	N	Uranium	26.00		pCi/L
	4/19/85	H000C1B1	N	Uranium	11.00		pCi/L
	7/15/85	H000C1B3	N	Uranium	12.00		pCi/L
	1/29/86	H000C1B4	N	Uranium	12.00		pCi/L
	4/28/86	H000C1B5	N	Uranium	17.00		pCi/L
	7/14/86	H000C1B8	N	Uranium	4.80		pCi/L
	10/13/86	H000C1C0	N	Uranium	10.00		pCi/L
	1/08/87	H000C1C1	N	Cesium-137	6.80	4.58	pCi/L
				Uranium	8.70	2.56	pCi/L
	4/07/87	H000C1C2	N	Cesium-137	-1.28 U	5.72	pCi/L
				Uranium	7.72	2.09	pCi/L
	7/23/87	H000C1C3	N	Cesium-137	5.13	4.22	pCi/L
				Uranium	9.94	2.65	pCi/L
	10/20/87	H000C1C4	N	Cesium-137	0.00 U	5.81	pCi/L
				Uranium	8.48	2.28	pCi/L
	2/12/88	H000C1C5	N	Uranium	7.15	2.09	pCi/L
	6/01/88	H000C1C6	N	Uranium	5.31	1.58	pCi/L
	8/17/88	H000C1C7	N	Uranium	6.01	1.80	pCi/L
	11/29/88	H000C1C8	N	Uranium	5.94	1.73	pCi/L
	12/12/91	B01F12	Y	Barium	24.30		ug/L
				Cadmium	1.00		ug/L
				Chromium	4.00		ug/L
				Lead	1.60		ug/L
	1/16/92	B01DN2	N	Barium	27.50		ug/L
				Cadmium	1.00		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-3	1/16/92	B01DN2	N	Cesium-137	12.41 U		pCi/L
				Chromium	2.00		ug/L
				Lead	7.50 M		ug/L
				Strontium-90	4.57		pCi/L
		B01DN3	Y	Barium	28.00		ug/L
				Cadmium	1.00		ug/L
				Chromium	2.00		ug/L
				Lead	3.60		ug/L
	5/13/92	B062D3	N	Barium	28.20 E		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.00		ug/L
				Lead	2.70		ug/L
		B062D4	Y	Barium	27.80		ug/L
				Cadmium	1.00		ug/L
				Chromium	5.00		ug/L
				Lead	1.30 W		ug/L
	9/10/92	B075Y3	N	Barium	33.20		ug/L
				Cadmium	1.50		ug/L
				Cesium-137	10.00 UJ		pCi/L
				Chromium	2.60		ug/L
				Lead	2.00 *		ug/L
				Strontium-90	-1.10 UJ		pCi/L
		B075Y4	Y	Barium	31.90		ug/L
				Cadmium	1.50		ug/L
				Chromium	2.60		ug/L
				Lead	5.10		ug/L
	11/13/92	B07P84	N	Uranium	10.00		ug/L
					10.00	1.90	ug/L
	6/27/94	B0C1Y1	N	Uranium	16.10	5.58	ug/L
	10/29/96	B0JJN9	N	Uranium	17.80	2.40	ug/L
	10/30/97	B0M3F1	N	Uranium	26.50	5.84	ug/L
		B0M3F2	N	Uranium	24.40	3.30	ug/L
399-3-6	1/26/77	H000C1D1	N	Cesium-137	.01		pCi/L
				Uranium	2.70		pCi/L
	3/30/78	H000C1D2	N	Uranium	6.90		pCi/L
	1/29/81	H000C1D3	N	Uranium	6.90		pCi/L
	3/11/81	H000C1D4	N	Uranium	6.90		pCi/L
	4/08/81	H000C1D5	N	Uranium	6.90		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-6	4/24/81	H000C1D6	N	Uranium	12.00		pCi/L
	6/03/81	H000C1D7	N	Uranium	6.70		pCi/L
	6/22/81	H000C1D8	N	Uranium	6.00		pCi/L
	7/22/81	H000C1D9	N	Uranium	6.70		pCi/L
	8/25/81	H000C1F0	N	Uranium	22.00		pCi/L
	9/14/81	H000C1F1	N	Uranium	16.00		pCi/L
	10/14/81	H000C1F2	N	Uranium	10.00		pCi/L
	11/04/81	H000C1F3	N	Uranium	6.70		pCi/L
	1/13/82	H000C1F4	N	Uranium	6.70		pCi/L
	2/05/82	H000C1F5	N	Uranium	6.70		pCi/L
	3/10/82	H000C1F6	N	Uranium	13.00		pCi/L
	4/06/82	H000C1F7	N	Uranium	6.70		pCi/L
	4/23/82	H000C1F8	N	Uranium	6.70		pCi/L
	5/28/82	H000C1F9	N	Uranium	14.00		pCi/L
	6/14/82	H000C1G0	N	Uranium	17.00		pCi/L
	7/16/82	H000C1G1	N	Uranium	10.00		pCi/L
	9/20/82	H000C1G3	N	Uranium	11.00		pCi/L
	10/19/82	H000C1G4	N	Uranium	11.00		pCi/L
	11/24/82	H000C1G5	N	Uranium	11.00		pCi/L
	1/31/83	H000C1G6	N	Uranium	12.00		pCi/L
	2/15/83	H000C1G7	N	Uranium	6.70		pCi/L
	3/21/83	H000C1G8	N	Uranium	6.70		pCi/L
	4/18/83	H000C1G9	N	Uranium	12.00		pCi/L
	5/19/83	H000C1H0	N	Uranium	12.00		pCi/L
	6/20/83	H000C1H1	N	Cesium-137	-7.90		pCi/L
				Uranium	12.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-6	7/21/83	H000C1H2	N	Uranium	6.70		pCi/L
	8/17/83	H000C1H3	N	Uranium	6.70		pCi/L
	9/19/83	H000C1H4	N	Uranium	6.70		pCi/L
	10/08/83	H000C1H5	N	Uranium	6.70		pCi/L
	11/14/83	H000C1H6	N	Uranium	6.70		pCi/L
	12/05/83	H000C1H7	N	Uranium	13.00		pCi/L
	3/29/84	H000C1H8	N	Uranium	10.00		pCi/L
	6/04/84	H000C1H9	N	Uranium	11.00		pCi/L
	10/12/84	H000C1J0	N	Uranium	14.00		pCi/L
	12/21/84	H000C1J1	N	Uranium	11.00		pCi/L
	1/28/85	H000C1J2	N	Uranium	32.00		pCi/L
	4/19/85	H000C1J4	N	Uranium	15.00		pCi/L
	7/15/85	H000C1J6	N	Uranium	20.00		pCi/L
	12/27/85	H000C1J7	N	Uranium	-1.60		pCi/L
	1/30/86	H000C1J9	N	Uranium	15.00		pCi/L
	4/28/86	H000C1K0	N	Uranium	13.00		pCi/L
	7/14/86	H000C1K3	N	Uranium	5.60		pCi/L
	10/13/86	H000C1K5	N	Uranium	17.00		pCi/L
	1/08/87	H000C1K6	N	Cesium-137	-11.20 U	7.90	pCi/L
				Uranium	10.80	3.09	pCi/L
	4/02/87	H000C1K7	N	Cesium-137	-4.13 U	5.52	pCi/L
				Uranium	12.60	3.30	pCi/L
	7/21/87	H000C1K8	N	Cesium-137	3.42 U	3.44	pCi/L
				Uranium	13.80	3.59	pCi/L
	10/20/87	H000C1K9	N	Cesium-137	8.27	5.06	pCi/L
				Uranium	9.98	2.65	pCi/L
	2/08/88	H000C1L0	N	Cesium-137	.74 U	6.58	pCi/L
				Uranium	11.40	3.24	pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-6	5/31/88	H000C1L1	N	Cesium-137	1.53 U	7.46	pCi/L
				Uranium	8.08	2.33	pCi/L
	7/07/88	H000C1L2	N	Cesium-137	1.59 U	4.68	pCi/L
				Uranium	10.80	3.13	pCi/L
	12/21/88	H000C1L3	N	Cesium-137	8.25	6.43	pCi/L
				Uranium	6.63	1.90	pCi/L
	9/29/94	B0D0B8	N	Uranium	16.60	4.75	ug/L
	7/19/95	B0G798	N	Uranium	32.90	10.60	ug/L
	5/31/96	B0HTR6	N	Uranium	45.60	13.13	ug/L
	8/27/97	B0LN40	N	Uranium	33.50 B	7.35	ug/L
		B0LN41	N	Uranium	33.50 B	7.36	ug/L
399-3-7	1/29/81	H000C1L6	N	Uranium	11.00		pCi/L
	3/11/81	H000C1L7	N	Uranium	6.90		pCi/L
	4/08/81	H000C1L8	N	Uranium	6.90		pCi/L
	4/24/81	H000C1L9	N	Cesium-137	24.00		pCi/L
				Uranium	6.70		pCi/L
	6/03/81	H000C1M0	N	Uranium	13.00		pCi/L
	6/22/81	H000C1M1	N	Uranium	6.00		pCi/L
	7/22/81	H000C1M2	N	Uranium	17.00		pCi/L
	8/25/81	H000C1M3	N	Uranium	21.00		pCi/L
	9/14/81	H000C1M4	N	Uranium	21.00		pCi/L
	10/14/81	H000C1M5	N	Uranium	19.00		pCi/L
	11/04/81	H000C1M6	N	Uranium	6.70		pCi/L
	1/13/82	H000C1M7	N	Uranium	10.00		pCi/L
	2/05/82	H000C1M8	N	Uranium	6.70		pCi/L
	3/10/82	H000C1M9	N	Uranium	6.70		pCi/L
	4/06/82	H000C1N0	N	Uranium	14.00		pCi/L
	4/23/82	H000C1N1	N	Uranium	6.70		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-7	5/28/82	H000C1N2	N	Uranium	11.00		pCi/L
	6/14/82	H000C1N3	N	Uranium	17.00		pCi/L
	7/16/82	H000C1N4	N	Uranium	13.00		pCi/L
	9/20/82	H000C1N6	N	Uranium	14.00		pCi/L
	10/19/82	H000C1N7	N	Uranium	11.00		pCi/L
	11/24/82	H000C1N8	N	Uranium	16.00		pCi/L
	1/31/83	H000C1N9	N	Uranium	10.00		pCi/L
	2/15/83	H000C1P0	N	Uranium	6.70		pCi/L
	3/22/83	H000C1P1	N	Uranium	23.00		pCi/L
	4/18/83	H000C1P2	N	Uranium	6.90		pCi/L
	5/19/83	H000C1P3	N	Uranium	12.00		pCi/L
	6/21/83	H000C1P4	N	Uranium	6.70		pCi/L
	7/21/83	H000C1P5	N	Uranium	19.00		pCi/L
	8/17/83	H000C1P6	N	Uranium	17.00		pCi/L
	9/21/83	H000C1P7	N	Uranium	11.00		pCi/L
	10/08/83	H000C1P8	N	Uranium	12.00		pCi/L
	11/14/83	H000C1P9	N	Uranium	6.70		pCi/L
	12/06/83	H000C1Q0	N	Uranium	14.00		pCi/L
	4/05/84	H000C1Q1	N	Uranium	10.00		pCi/L
	7/23/84	H000C1Q2	N	Uranium	.50		pCi/L
	10/12/84	H000C1Q3	N	Uranium	12.00		pCi/L
	12/21/84	H000C1Q4	N	Uranium	.50		pCi/L
	1/28/85	H000C1Q5	N	Uranium	19.00		pCi/L
	4/19/85	H000C1Q7	N	Uranium	4.50		pCi/L
	6/25/85	H000C1Q9	N	Barium	50.00		ug/L
				Cadmium	2.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-7	6/25/85	H000C1Q9	N	Chromium	10.00 U		ug/L
				Lead	140.00		ug/L
	7/24/85	H000C1R0	N	Barium	48.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	31.00		ug/L
	8/20/85	H000C1R1	N	Barium	36.00		ug/L
				Cadmium	5.00		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	9/12/85	H000C1R2	N	Uranium	19.00		pCi/L
	9/25/85	H000C1R3	N	Barium	78.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	10/28/85	H000C1R4	N	Uranium	14.00		pCi/L
		H000C1R6	N	Barium	37.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	11/25/85	H000C1R7	N	Barium	35.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	1/17/86	H000C1R8	N	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	1/30/86	H000C1R9	N	Uranium	7.20		pCi/L
	2/19/86	H000C1S0	N	Barium	29.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	3/14/86	H000C1S1	N	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/17/86	H000C1S2	N	Uranium	16.00		pCi/L
		H000C1S3	N	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	5/19/86	H000C1S4	N	Barium	34.00		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-7	5/19/86	H000C1S4	N	Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	6/20/86	H000C1S5	N	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/17/86	H000C1S7	N	Uranium	1.60 U		pCi/L
		H000C1S8	N	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/19/86	H000C1S9	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	9/19/86	H000C1T1	N	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1T1F	Y	Barium	16.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	10/20/86	H000C1T3	N	Uranium	12.00		pCi/L
		H000C1T4	N	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1T4F	Y	Barium	16.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	11/10/86	H000C1T5	N	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1T5F	Y	Barium	20.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	12/04/86	H000C1T6	N	Barium	37.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1T6F	Y	Barium	36.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	1/19/87	H000C1T7	N	Cesium-137	-2.56 U	5.43	pCi/L
				Uranium	10.30	2.77	pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-7	1/19/87	H000C1T8	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1T8F	Y	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/04/87	H000C1T9	N	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1T9F	Y	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	3/18/87	H000C1V0	N	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1V0F	Y	Barium	29.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/28/87	H000C1V1	N	Cesium-137	-2.41 U	7.48	pCi/L
				Uranium	7.36	2.09	pCi/L
		H000C1V2	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1V2F	Y	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	6/24/87	H000C1V3	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1V3F	Y	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/21/87	H000C1V4	N	Cesium-137	-6.54 U	6.71	pCi/L
				Uranium	10.40	2.73	pCi/L
	8/13/87	H000C1V5	N	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1V5F	Y	Barium	20.00		ug/L
				Cadmium	2.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-7	8/13/87	H000C1V5F	Y	Chromium	10.00 U		ug/L
	10/20/87	H000C1V6	N	Cesium-137	10.30	5.40	pCi/L
				Uranium	10.70	2.82	pCi/L
	11/09/87	H000C1V7	N	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	12.10	3.06	ug/L
		H000C1V7F	Y	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/08/88	H000C1V8	N	Uranium	6.54	1.90	pCi/L
	5/27/88	H000C1V9	N	Uranium	14.70	4.15	pCi/L
		H000C1W0	N	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1W0F	Y	Barium	36.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/07/88	H000C1W1	N	Uranium	9.65	2.77	pCi/L
	8/19/88	H000C1W2	N	Barium	44.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000C1W2F	Y	Barium	16.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	11/29/88	H000C1W3	N	Uranium	9.75	2.93	pCi/L
	12/08/88	H000C1W4	N	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	8.67	2.46	pCi/L
		H000C1W4F	Y	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/16/89	H000C1W5	N	Barium	37.00	4.60	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	10.20	2.90	pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-7	8/16/89	H000C1W5F	Y	Barium	44.00	5.24	ug/L
				Cadmium	2.00	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
		H000C1W6	N	Barium	37.00	4.60	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	8.33	2.37	pCi/L
		H000C1W6F	Y	Barium	39.00	4.78	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	12/19/89	H000C1W8	N	Barium	30.00	3.97	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	5.55	1.59	pCi/L
		H000C1W8F	Y	Barium	32.00	4.15	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	7/12/91	H00071W0	N	Barium	42.00 Y	5.80	ug/L
				Cadmium	10.00 UY		ug/L
				Chromium	40.00 Y	23.90	ug/L
				Lead	5.00 U		ug/L
				Uranium	27.70	8.97	ug/L
		H00071W0F	Y	Barium	42.00	5.80	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	12/09/91	B01DL1	N	Barium	38.90		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	13.41 U		pCi/L
				Chromium	6.00		ug/L
				Lead	1.70		ug/L
				Strontium-90	-.10 UJ		pCi/L
		B01DL2	Y	Barium	39.70		ug/L
				Cadmium	1.00		ug/L
				Chromium	10.20		ug/L
				Lead	2.00		ug/L
	12/17/91	B01FS6	N	Barium	36.00	4.97	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	8.87	2.57	ug/L
		B01FS7	N	Barium	33.00	4.55	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-7	5/06/92	B062W1	N	Barium	37.80		ug/L
				Cadmium	2.00		ug/L
				Cesium-137	6.40 U		pCi/L
				Chromium	3.00		ug/L
				Lead	1.80		ug/L
				Strontium-90	-.15 U		pCi/L
		B062W2	Y	Barium	37.50		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.00		ug/L
				Lead	2.00 *		ug/L
	7/14/92	B07074	N	Barium	40.00 G	5.52	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
				Uranium	13.20	3.76	ug/L
		B07075	Y	Barium	41.00 G	5.66	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 U		ug/L
	11/14/92	B07P86	N	Uranium	13.00		ug/L
					13.00	2.50	ug/L
399-3-8	9/01/76	H000FXF1	N	Cesium-137	20.00		pCi/L
				Strontium-90	380.00		pCi/L
				Uranium	47.00		pCi/L
	9/09/76	H000FXF2	N	Uranium	38.00		pCi/L
	9/15/76	H000FXF3	N	Cesium-137	17.00		pCi/L
				Uranium	45.00		pCi/L
	9/23/76	H000FXF4	N	Cesium-137	13.00		pCi/L
				Uranium	40.00		pCi/L
	10/14/76	H000FXF5	N	Cesium-137	27.00		pCi/L
				Uranium	50.00		pCi/L
	10/21/76	H000FXF6	N	Uranium	52.00		pCi/L
	10/26/76	H000FXF7	N	Uranium	56.00		pCi/L
	11/06/76	H000FXF8	N	Uranium	33.00		pCi/L
	11/11/76	H000FXF9	N	Uranium	57.00		pCi/L
	11/18/76	H000FXG0	N	Uranium	38.00		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-8	11/23/76	H000FXG1	N	Uranium	39.00		pCi/L
	12/02/76	H000FXG2	N	Uranium	48.00		pCi/L
	12/09/76	H000FXG3	N	Uranium	41.00		pCi/L
	12/15/76	H000FXG4	N	Uranium	36.00		pCi/L
	12/21/76	H000FXG5	N	Uranium	34.00		pCi/L
	12/28/76	H000FXG6	N	Uranium	25.00		pCi/L
	1/05/77	H000FXG7	N	Uranium	36.00		pCi/L
	1/17/77	H000FXG8	N	Uranium	50.00		pCi/L
	1/19/77	H000FXG9	N	Uranium	41.00		pCi/L
	1/25/77	H000FXH0	N	Uranium	51.00		pCi/L
	1/28/77	H000FXH1	N	Cesium-137	2.40		pCi/L
				Uranium	34.00		pCi/L
	3/01/77	H000FXH3	N	Uranium	35.00		pCi/L
	3/30/77	H000FXH4	N	Uranium	33.00		pCi/L
	4/29/77	H000FXH5	N	Uranium	29.00		pCi/L
	6/02/77	H000FXH6	N	Uranium	34.00		pCi/L
	7/01/77	H000FXH7	N	Uranium	37.00		pCi/L
	7/28/77	H000FXH8	N	Uranium	38.00		pCi/L
	9/01/77	H000FXJ0	N	Uranium	44.00		pCi/L
	12/14/77	H000FXJ4	N	Cesium-137	19.00		pCi/L
				Strontium-90	69.00		pCi/L
	12/16/77	H000FXJ5	N	Strontium-90	94.00		pCi/L
	12/19/77	H000FXJ6	N	Strontium-90	170.00		pCi/L
	1/04/78	H000FXJ8	N	Cesium-137	15.00		pCi/L
				Strontium-90	62.00		pCi/L
	2/07/78	H000FXJ9	N	Strontium-90	120.00		pCi/L
	3/01/78	H000FXK0	N	Cesium-137	15.00		pCi/L
				Strontium-90	110.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-8	3/01/78	H000FXK0	N	Uranium	21.00		pCi/L
	4/05/78	H000FXK1	N	Uranium	15.00		pCi/L
	4/26/78	H000FXK2	N	Strontium-90	100.00		pCi/L
				Uranium	22.00		pCi/L
	5/16/78	H000FXL2	N	Strontium-90	670.00		pCi/L
				Uranium	19.00		pCi/L
		H000FXL3	N	Strontium-90	960.00		pCi/L
	6/12/78	H000FXL9	N	Uranium	17.00		pCi/L
	6/19/78	H000FXM1	N	Strontium-90	130.00		pCi/L
	7/11/78	H000FXM5	N	Uranium	15.00		pCi/L
	8/07/78	H000FXM6	N	Strontium-90	180.00		pCi/L
				Uranium	17.00		pCi/L
	9/14/78	H000FXM7	N	Strontium-90	140.00		pCi/L
				Uranium	2.50		pCi/L
	11/15/78	H000FXM8	N	Uranium	23.00		pCi/L
	11/28/78	H000FXM9	N	Uranium	16.00		pCi/L
	1/08/79	H000FXN0	N	Uranium	26.00		pCi/L
	1/24/79	H000FXN2	N	Uranium	25.00		pCi/L
	2/22/79	H000FXN3	N	Uranium	6.90		pCi/L
	3/20/79	H000FXN4	N	Strontium-90	89.00		pCi/L
				Uranium	19.00		pCi/L
399-3-9	10/01/76	H000FXN5	N	Strontium-90	.00		pCi/L
	10/27/76	H000FXN6	N	Uranium	170.00		pCi/L
	12/02/76	H000FXN7	N	Uranium	120.00		pCi/L
	1/05/77	H000FXN8	N	Uranium	140.00		pCi/L
	1/19/77	H000FXN9	N	Uranium	40.00		pCi/L
	1/25/77	H000FXP0	N	Cesium-137	.11		pCi/L
				Uranium	38.00		pCi/L
	2/09/77	H000FXP1	N	Uranium	25.00		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-9	3/04/77	H000FXP3	N	Uranium	18.00		pCi/L
	3/30/77	H000FXP4	N	Uranium	29.00		pCi/L
	4/29/77	H000FXP6	N	Uranium	40.00		pCi/L
	11/02/77	H000FXQ6	N	Cesium-137	11.00		pCi/L
	1/04/78	H000FXR0	N	Strontium-90	2.10		pCi/L
	2/07/78	H000FXR1	N	Strontium-90	2.30		pCi/L
	3/01/78	H000FXR2	N	Cesium-137	15.00		pCi/L
				Strontium-90	.53		pCi/L
				Uranium	27.00		pCi/L
	3/24/78	H000FXR3	N	Uranium	25.00		pCi/L
	4/26/78	H000FXR4	N	Strontium-90	.92		pCi/L
				Uranium	26.00		pCi/L
	5/16/78	H000FXR5	N	Strontium-90	5100.00		pCi/L
				Uranium	31.00		pCi/L
		H000FXR6	N	Strontium-90	.61		pCi/L
	6/19/78	H000FXR7	N	Strontium-90	.24		pCi/L
				Uranium	30.00		pCi/L
	7/11/78	H000FXR8	N	Uranium	29.00		pCi/L
	8/07/78	H000FXR9	N	Uranium	26.00		pCi/L
	9/14/78	H000FXS0	N	Uranium	27.00		pCi/L
	10/13/78	H000FXS1	N	Uranium	17.00		pCi/L
	11/08/78	H000FXS2	N	Uranium	22.00		pCi/L
	11/28/78	H000FXS3	N	Uranium	20.00		pCi/L
	1/08/79	H000FXS4	N	Strontium-90	4.70		pCi/L
				Uranium	16.00		pCi/L
	1/24/79	H000FXS5	N	Strontium-90	8.10		pCi/L
				Uranium	16.00		pCi/L
	2/22/79	H000FXS6	N	Strontium-90	9.20		pCi/L
				Uranium	15.00		pCi/L
	3/19/79	H000FXS7	N	Strontium-90	2.30		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-9	3/19/79	H000FXS7	N	Uranium	19.00		pCi/L
	4/17/79	H000FXS8	N	Strontium-90	3.00		pCi/L
				Uranium	22.00		pCi/L
	5/16/79	H000FXS9	N	Strontium-90	2.00		pCi/L
				Uranium	32.00		pCi/L
	6/13/79	H000FXT0	N	Strontium-90	4.00		pCi/L
				Uranium	19.00		pCi/L
	7/10/79	H000FXT1	N	Strontium-90	2.40		pCi/L
				Uranium	34.00		pCi/L
	8/07/79	H000FXT2	N	Strontium-90	3.40		pCi/L
				Uranium	38.00		pCi/L
	9/04/79	H000FXT3	N	Strontium-90	2.60		pCi/L
				Uranium	25.00		pCi/L
	10/11/79	H000FXT4	N	Strontium-90	4.20		pCi/L
				Uranium	16.00		pCi/L
	11/07/79	H000FXT5	N	Strontium-90	8.00		pCi/L
				Uranium	18.00		pCi/L
	12/03/79	H000FXT6	N	Strontium-90	15.00		pCi/L
				Uranium	17.00		pCi/L
	1/11/80	H000FXT7	N	Strontium-90	2.30		pCi/L
				Uranium	19.00		pCi/L
	1/30/80	H000FXT8	N	Strontium-90	3.10		pCi/L
				Uranium	12.00		pCi/L
	2/27/80	H000FXT9	N	Strontium-90	2.40		pCi/L
	4/09/80	H000FXV0	N	Strontium-90	1.50		pCi/L
				Uranium	14.00		pCi/L
	4/23/80	H000FXV1	N	Strontium-90	1.70		pCi/L
				Uranium	12.00		pCi/L
	6/13/80	H000FXV2	N	Strontium-90	4.70		pCi/L
				Uranium	26.00		pCi/L
	7/16/80	H000FXV3	N	Strontium-90	3.40		pCi/L
				Uranium	17.00		pCi/L
	8/13/80	H000FXV4	N	Strontium-90	3.30		pCi/L
				Uranium	8.20		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-9	9/10/80	H000FXV5	N	Strontium-90	2.50		pCi/L
				Uranium	17.00		pCi/L
	10/07/80	H000FXV6	N	Strontium-90	2.80		pCi/L
				Uranium	23.00		pCi/L
	11/05/80	H000FXV7	N	Strontium-90	12.00		pCi/L
				Uranium	19.00		pCi/L
	1/09/81	H000FXV8	N	Strontium-90	3.20		pCi/L
				Uranium	12.00		pCi/L
	1/29/81	H000FXV9	N	Strontium-90	4.30		pCi/L
				Uranium	13.00		pCi/L
	3/11/81	H000FXW0	N	Strontium-90	2.10		pCi/L
				Uranium	6.90		pCi/L
	3/24/81	H000FXW1	N	Strontium-90	2.50		pCi/L
				Uranium	15.00		pCi/L
	4/24/81	H000FXW2	N	Strontium-90	3.20		pCi/L
				Uranium	13.00		pCi/L
	6/02/81	H000FXW3	N	Strontium-90	1.90		pCi/L
				Uranium	24.00		pCi/L
	6/22/81	H000FXW4	N	Strontium-90	2.10		pCi/L
				Uranium	14.00		pCi/L
	7/22/81	H000FXW5	N	Strontium-90	2.50		pCi/L
				Uranium	18.00		pCi/L
	8/25/81	H000FXW6	N	Strontium-90	4.50		pCi/L
				Uranium	23.00		pCi/L
	9/14/81	H000FXW7	N	Strontium-90	2.70		pCi/L
				Uranium	25.00		pCi/L
	10/14/81	H000FXW8	N	Strontium-90	2.00		pCi/L
				Uranium	22.00		pCi/L
	11/04/81	H000FXW9	N	Strontium-90	4.40		pCi/L
				Uranium	19.00		pCi/L
	1/07/82	H000FXX0	N	Strontium-90	2.00		pCi/L
				Uranium	18.00		pCi/L
	2/05/82	H000FXX1	N	Strontium-90	20.00		pCi/L
				Uranium	6.70		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-9	4/23/82	H000FXX2	N	Strontium-90	3.90		pCi/L
				Uranium	10.00		pCi/L
	10/19/82	H000FXX3	N	Strontium-90	3.00		pCi/L
				Uranium	20.00		pCi/L
	3/21/83	H000FXX4	N	Strontium-90	1 40		pCi/L
				Uranium	6.70		pCi/L
	6/20/83	H000FXX5	N	Cesium-137	-8.10		pCi/L
				Strontium-90	.82		pCi/L
				Uranium	13.00		pCi/L
	9/21/83	H000FXX6	N	Strontium-90	2.10		pCi/L
				Uranium	19.00		pCi/L
	12/02/83	H000FXX7	N	Strontium-90	2.80		pCi/L
				Uranium	6.70		pCi/L
	2/06/84	H000FXX8	N	Strontium-90	-.53		pCi/L
				Uranium	13.00		pCi/L
	4/13/84	H000FXX9	N	Strontium-90	2.30		pCi/L
				Uranium	1.20		pCi/L
	7/23/84	H000FXY0	N	Strontium-90	-.68		pCi/L
				Uranium	12.00		pCi/L
	10/12/84	H000FXY1	N	Strontium-90	3.90		pCi/L
				Uranium	18.00		pCi/L
	1/24/85	H000FXY2	N	Uranium	10.00		pCi/L
		H000FXY3	N	Strontium-90	5.60		pCi/L
	4/15/85	H000FXY4	N	Strontium-90	.84		pCi/L
				Uranium	19.00		pCi/L
	9/12/85	H000FXY6	N	Strontium-90	2.20		pCi/L
				Uranium	5.20		pCi/L
	12/27/85	H000FXY7	N	Strontium-90	2.30		pCi/L
				Uranium	12.00		pCi/L
	2/20/86	H000FXY8	N	Strontium-90	1.90		pCi/L
				Uranium	7.70		pCi/L
	4/24/86	H000FXY9	N	Strontium-90	1.20		pCi/L
				Uranium	14.00		pCi/L
	7/15/86	H000FXZ1	N	Strontium-90	5.12		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-9	7/15/86	H000FXZ1	N	Uranium	31.00		pCi/L
	10/10/86	H000FXZ3	N	Strontium-90	3.10		pCi/L
				Uranium	20.00		pCi/L
	1/08/87	H000FXZ4	N	Cesium-137	6.42 U	6.70	pCi/L
				Strontium-90	.55 U	.72	pCi/L
				Uranium	18.70	5.25	pCi/L
	4/07/87	H000FXZ5	N	Cesium-137	-3.02 U	5.66	pCi/L
				Strontium-90	.38 U	.95	pCi/L
				Uranium	10.20	2.71	pCi/L
	7/21/87	H000FXZ6	N	Cesium-137	.76 U	6.59	pCi/L
				Strontium-90	.53 U	.90	pCi/L
				Uranium	13.30	3.42	pCi/L
	10/19/87	H000FXZ7	N	Cesium-137	-8.66 U	8.57	pCi/L
				Strontium-90	.06 U	.62	pCi/L
				Uranium	17.40	4.55	pCi/L
	2/08/88	H000FXZ8	N	Strontium-90	.09 U	.69	pCi/L
				Uranium	8.84	2.52	pCi/L
	5/31/88	H000FXZ9	N	Strontium-90	-.29 U	.64	pCi/L
				Uranium	12.20	3.49	pCi/L
	8/16/88	H000FY00	N	Strontium-90	-.15 U	.67	pCi/L
				Uranium	16.10	4.45	pCi/L
	11/29/88	H000FY01	N	Strontium-90	-.09 U	.58	pCi/L
				Uranium	8.63	2.45	pCi/L
	12/11/88	H000FY02	N	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	19.90	5.48	pCi/L
		H000FY02F	Y	Barium	56.00		ug/L
				Cadmium	2.00		ug/L
				Chromium	10.00 U		ug/L
	6/12/89	H000FY03	N	Barium	49.00	5.72	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	17.90	4.97	pCi/L
		H000FY03F	Y	Barium	43.00	5.15	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-3-9	12/19/89	H000FY07	N	Strontium-90	.04 U	.64	pCi/L
		H000FY08	N	Barium	41.00	4.96	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	11.60	3.22	pCi/L
		H000FY08F	Y	Barium	42.00	5.06	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	5/22/90	H000FY09	N	Lead	5.00 U	2.55	ug/L
	7/15/91	H00071W1	N	Barium	42.00	5.80	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	18.60	5.17	ug/L
		H00071W1F	Y	Barium	39.00	5.38	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	12/12/91	B01F05	N	Barium	48.40		ug/L
				Cadmium	1.00		ug/L
				Cesium-137	11.88 U		pCi/L
				Chromium	2.00		ug/L
				Lead	2.00		ug/L
				Strontium-90	.12 U		pCi/L
		B01F06	Y	Barium	40.50		ug/L
				Cadmium	1.00		ug/L
				Chromium	4.00		ug/L
				Lead	1.30 W		ug/L
	12/17/91	B01FS8	N	Barium	48.00	6.62	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	16.40	4.59	ug/L
		B01FS9	N	Barium	47.00	6.49	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.90	2.49	ug/L
	5/13/92	B062W4	N	Barium	52.80 E		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.00		ug/L
				Lead	1.20		ug/L
		B062W5	Y	Barium	49.60		ug/L
				Cadmium	1.00		ug/L
				Chromium	5.00		ug/L
				Lead	1.00		ug/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-3-9	5/13/92	B062W6	N	Barium	47.40		ug/L
				Cadmium	4.00		ug/L
				Chromium	7.00		ug/L
	7/14/92	B07078	N	Barium	59.00 G	8 14	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
				Uranium	24.30	6.88	ug/L
		B07080	Y	Barium	60.00 G	8.28	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
	11/14/92	B07P88	N	Uranium	27.00		ug/L
					27.00	4.90	ug/L
	6/27/94	B0C1V9	N	Uranium	21.80	7.28	ug/L
399-4-1	2/01/59	H000FY31	N	Uranium	320.00		pCi/L
	3/01/59	H000FY32	N	Uranium	370.00		pCi/L
	4/01/59	H000FY33	N	Uranium	180.00		pCi/L
	1/19/67	H000FY38	N	Uranium	4600.00		pCi/L
	7/17/67	H000FY39	N	Uranium	160.00		pCi/L
	1/17/68	H000FY40	N	Uranium	460.00		pCi/L
	10/26/76	H000FY98	N	Uranium	25.00		pCi/L
	1/26/77	H000FY99	N	Cesium-137	.02		pCi/L
				Uranium	28.00		pCi/L
	2/01/77	H000FYB0	N	Uranium	9.60		pCi/l
	3/01/77	H000FYB2	N	Uranium	27.00		pCi/L
	3/30/77	H000FYB3	N	Uranium	23.00		pCi/L
	4/25/77	H000FYB4	N	Uranium	28.00		pCi/L
	6/03/77	H000FYB6	N	Uranium	34.00		pCi/L
	6/30/77	H000FYB7	N	Uranium	23.00		pCi/L
	9/01/77	H000FYC0	N	Uranium	25.00		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-4-1	1/11/78	H000FYC6	N	Cesium-137	12.00		pCi/L
	3/08/78	H000FYC7	N	Uranium	6.90		pCi/L
	3/23/78	H000FYC8	N	Uranium	6.90		pCi/L
	4/26/78	H000FYC9	N	Uranium	8.90		pCi/L
	5/16/78	H000FYD0	N	Uranium	6.90		pCi/L
	6/19/78	H000FYD1	N	Uranium	6.90		pCi/L
	7/11/78	H000FYD2	N	Uranium	7.50		pCi/L
	8/07/78	H000FYD3	N	Uranium	14.00		pCi/L
	9/14/78	H000FYD4	N	Uranium	12.00		pCi/L
	10/13/78	H000FYD5	N	Uranium	15.00		pCi/L
	11/08/78	H000FYD6	N	Uranium	13.00		pCi/L
	11/28/78	H000FYD7	N	Uranium	13.00		pCi/L
	1/08/79	H000FYD8	N	Uranium	13.00		pCi/L
	1/24/79	H000FYD9	N	Uranium	15.00		pCi/L
	2/22/79	H000FYF0	N	Uranium	12.00		pCi/L
	3/19/79	H000FYF1	N	Uranium	14.00		pCi/L
	4/17/79	H000FYF2	N	Uranium	12.00		pCi/L
	5/16/79	H000FYF3	N	Uranium	14.00		pCi/L
	6/13/79	H000FYF4	N	Uranium	12.00		pCi/L
	7/10/79	H000FYF5	N	Uranium	14.00		pCi/L
	8/07/79	H000FYF6	N	Uranium	16.00		pCi/L
	9/04/79	H000FYF7	N	Uranium	12.00		pCi/L
	10/11/79	H000FYF8	N	Uranium	11.00		pCi/L
	11/07/79	H000FYF9	N	Uranium	12.00		pCi/L
	12/03/79	H000FYG0	N	Uranium	9.60		pCi/L
	1/11/80	H000FYG1	N	Uranium	11.00		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-4-1	1/30/80	H000FYG2	N	Uranium	12.00		pCi/L
	3/31/80	H000FYG4	N	Uranium	40.00		pCi/L
	4/23/80	H000FYG5	N	Uranium	8.90		pCi/L
	5/19/80	H000FYG6	N	Uranium	6.90		pCi/L
	8/13/80	H000FYG7	N	Uranium	16.00		pCi/L
	11/13/80	H000FYG8	N	Uranium	14.00		pCi/L
	12/31/80	H000FYH0	N	Uranium	19.00		pCi/L
	3/24/81	H000FYH1	N	Uranium	11.00		pCi/L
	8/31/81	H000FYH2	N	Uranium	16.00		pCi/L
	1/07/82	H000FYH3	N	Uranium	18.00		pCi/L
	3/19/82	H000FYH4	N	Uranium	18.00		pCi/L
	6/14/82	H000FYH5	N	Uranium	14.00		pCi/L
	9/20/82	H000FYH6	N	Uranium	15.00		pCi/L
	11/29/82	H000FYH7	N	Uranium	6.70		pCi/L
	3/21/83	H000FYH8	N	Uranium	16.00		pCi/L
	6/20/83	H000FYH9	N	Cesium-137	-7.30		pCi/L
				Uranium	16.00		pCi/L
	9/19/83	H000FYJ0	N	Uranium	6.70		pCi/L
	12/05/83	H000FYJ1	N	Uranium	11.00		pCi/L
	4/05/84	H000FYJ2	N	Uranium	11.00		pCi/L
	6/04/84	H000FYJ3	N	Uranium	11.00		pCi/L
	12/28/84	H000FYJ4	N	Uranium	15.00		pCi/L
	1/24/85	H000FYJ5	N	Uranium	14.00		pCi/L
	4/15/85	H000FYJ7	N	Uranium	25.00		pCi/L
	7/02/85	H000FYJ9	N	Barium	46.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-1	7/02/85	H000FYJ9	N	Lead	99.00		ug/L
	7/15/85	H000FYK0	N	Uranium	20.00		pCi/L
	7/23/85	H000FYK1	N	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	81.00		ug/L
	8/23/85	H000FYK2	N	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	15.00		ug/L
				Lead	30.00 U		ug/L
	9/24/85	H000FYK3	N	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	10/28/85	H000FYK4	N	Uranium	13.00		pCi/L
		H000FYK6	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	12/06/85	H000FYK7	N	Barium	29.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	30.00 U		ug/L
	1/17/86	H000FYK8	N	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	1/29/86	H000FYK9	N	Uranium	19.00		pCi/L
	2/18/86	H000FYL0	N	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	3/13/86	H000FYL1	N	Barium	124.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	23.00		ug/L
	4/18/86	H000FYL2	N	Uranium	18.00		pCi/L
		H000FYL3	N	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	5/22/86	H000FYL4	N	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-1	5/22/86	H000FYL4	N	Chromium	10.00 U		ug/L
	6/23/86	H000FYL5	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/14/86	H000FYL7	N	Uranium	18.00		pCi/L
	7/22/86	H000FYL8	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/27/86	H000FYL9	N	Barium	36.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	9/23/86	H000FYM0	N	Barium	35.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYM0F	Y	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	10/23/86	H000FYM2	N	Uranium	21.00		pCi/L
		H000FYM3	N	Barium	34.00		ug/L
				Cadmium	4.00		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYM3F	Y	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	11/11/86	H000FYM4	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYM4F	Y	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	12/09/86	H000FYM5	N	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYM5F	Y	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	1/15/87	H000FYM6	N	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-1	1/15/87	H000FYM6	N	Chromium	10.00 U		ug/L
				Lead	10.70		ug/L
		H000FYM6F	Y	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/23/87	H000FYM7	N	Cesium-137	-4.13 U	8.50	pCi/L
				Uranium	16.10	4.48	pCi/L
		H000FYM8	N	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYM8F	Y	Barium	29.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	3/26/87	H000FYM9	N	Barium	36.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYM9F	Y	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/21/87	H000FYN0	N	Cesium-137	3.44	3.10	pCi/L
				Uranium	11.40	2.99	pCi/L
		H000FYN1	N	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYN1F	Y	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	6/25/87	H000FYN2	N	Barium	39.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYN2F	Y	Barium	42.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/23/87	H000FYN3	N	Cesium-137	8.55	5.47	pCi/L
				Uranium	14.20	3.75	pCi/L
	8/13/87	H000FYN4	N	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYN4F	Y	Barium	41.00		ug/L
				Cadmium	2.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-1	8/13/87	H000FYN4F	Y	Chromium	10.00 U		ug/L
	10/19/87	H000FYN5	N	Cesium-137	-1.13 U	8.44	pCi/L
				Uranium	13.20	3.47	pCi/L
	11/12/87	H000FYN6	N	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	16.00	4.05	ug/L
		H000FYN6F	Y	Barium	36.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/11/88	H000FYN7	N	Cesium-137	-1.27 U	5.69	pCi/L
				Uranium	9.13	2.59	pCi/L
	5/27/88	H000FYN8	N	Cesium-137	-.95 U	3.92	pCi/L
				Uranium	13.20	3.81	pCi/L
		H000FYN9	N	Barium	34.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYN9F	Y	Barium	34.00		ug/L
				Cadmium	2.00		ug/L
				Chromium	10.00 U		ug/L
	7/07/88	H000FYP0	N	Cesium-137	-2.63 U	6.30	pCi/L
				Uranium	10.00	2.90	pCi/L
	8/19/88	H000FYP1	N	Barium	35.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FYP1F	Y	Barium	36.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	12/21/88	H000FYP2	N	Cesium-137	6.39	6.32	pCi/L
				Uranium	8.86	2.51	pCi/L
		H000FYP3	N	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	8.54	2.43	pCi/L
		H000FYP3F	Y	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	7/12/89	H000FYP4	N	Barium	36.00	4.50	ug/L
				Cadmium	2.00 U	1.38	ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-1	7/12/89	H000FYP4	N	Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	16.10	4.53	pCi/L
		H000FYP4F	Y	Barium	39.00	4.78	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	12/20/89	H000FYP6	N	Barium	33.00	4.23	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	8.75	2.43	pCi/L
		H000FYP6F	Y	Barium	32.00	4.15	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	7/10/91	H00071W3	N	Barium	39.00	5.38	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	17.10	4.80	ug/L
		H00071W3F	Y	Barium	36.00	4.97	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
		H00072S9	N	Uranium	19.50	5.46	ug/L
	12/03/91	B01DY9	N	Barium	31.90		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	13.79 U		pCi/L
				Chromium	6.00		ug/L
				Lead	2.10		ug/L
				Strontium-90	-2.29 UJ		pCi/L
		B01DZ0	Y	Barium	35.40		ug/L
				Cadmium	1.00		ug/L
				Chromium	2.00		ug/L
				Lead	1.90		ug/L
	12/10/91	B01FT0	N	Barium	32.00	4.42	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	13.50	3.81	ug/L
		B01FT1	N	Barium	32.00	4.42	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	5/06/92	B062X1	N	Barium	34.20		ug/L
				Cadmium	2.00		ug/L
				Cesium-137	10.00 U		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-1	5/06/92	B062X1	N	Chromium	3.00		ug/L
				Lead	2.50		ug/L
				Strontium-90	0.00 U		pCi/L
		B062X2	Y	Barium	32.70		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.00		ug/L
				Lead	2.00 *		ug/L
		B06311	N	Barium	34.90		ug/L
				Cadmium	2.00		ug/L
				Cesium-137	10.00 U		pCi/L
				Chromium	3.00		ug/L
				Lead	1.40		ug/L
				Strontium-90	.01 U		pCi/L
		B06312	Y	Barium	33.20		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.40		ug/L
				Lead	4.10 *		ug/L
	7/14/92	B07083	N	Barium	35.00 G	4.83	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
				Uranium	13.00	3.73	ug/L
		B07085	Y	Barium	35.00 G	4.83	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
	11/10/92	B07P96	N	Uranium	16.00		ug/L
					16.00	3.00	ug/L
	3/12/93	B086R0	N	Uranium	14.00		ug/L
					14.00	3.40	ug/L
	3/10/94	B0BGT8	N	Uranium	16.80	4.69	ug/L
	7/19/95	B0G794	N	Uranium	17.10	4.91	ug/L
	8/15/95	B0GCD9	N	Uranium	20.20	5.77	ug/L
	8/14/96	B0HYZ9	N	Uranium	37.20	8.20	ug/L
	8/20/97	B0LJR8	N	Uranium	53.70	11.80	ug/L
399-4-10	10/01/76	H000FYP8	N	Strontium-90	.00		pCi/L
	10/27/76	H000FYP9	N	Uranium	82.00		pCi/L
	12/02/76	H000FYQ0	N	Uranium	49.00		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-4-10	1/05/77	H000FYQ1	N	Uranium	52.00		pCi/L
	1/25/77	H000FYQ2	N	Cesium-137	.01		pCi/L
				Uranium	40.00		pCi/L
	2/09/77	H000FYQ3	N	Uranium	40.00		pCi/L
	3/04/77	H000FYQ4	N	Uranium	68.00		pCi/L
	3/30/77	H000FYQ5	N	Uranium	25.00		pCi/L
	4/29/77	H000FYQ6	N	Uranium	38.00		pCi/L
	1/04/78	H000FYS1	N	Strontium-90	1.50		pCi/L
	2/07/78	H000FYS2	N	Strontium-90	2.90		pCi/L
	3/01/78	H000FYS3	N	Cesium-137	15.00		pCi/L
				Strontium-90	.72		pCi/L
				Uranium	24.00		pCi/L
	3/24/78	H000FYS4	N	Uranium	24.00		pCi/L
	4/26/78	H000FYS5	N	Strontium-90	.83		pCi/L
				Uranium	33.00		pCi/L
	5/16/78	H000FYS6	N	Cesium-137	-1.06		pCi/L
				Strontium-90	2.50		pCi/L
		H000FYS7	N	Strontium-90	.77		pCi/L
	6/19/78	H000FYS8	N	Strontium-90	.39		pCi/L
				Uranium	30.00		pCi/L
	7/11/78	H000FYS9	N	Uranium	26.00		pCi/L
	8/07/78	H000FYT0	N	Uranium	20.00		pCi/L
	9/14/78	H000FYT1	N	Uranium	19.00		pCi/L
	11/08/78	H000FYT2	N	Uranium	36.00		pCi/L
	11/28/78	H000FYT3	N	Uranium	39.00		pCi/L
	1/08/79	H000FYT4	N	Strontium-90	2.10		pCi/L
				Uranium	23.00		pCi/L
	1/24/79	H000FYT5	N	Strontium-90	2.20		pCi/L
				Uranium	22.00		pCi/L
	2/22/79	H000FYT6	N	Strontium-90	2.00		pCi/L
				Uranium	19.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-10	3/19/79	H000FYT7	N	Strontium-90	2.00		pCi/L
				Uranium	27.00		pCi/L
	4/17/79	H000FYT8	N	Strontium-90	2.00		pCi/L
				Uranium	26.00		pCi/L
	5/16/79	H000FYT9	N	Strontium-90	2.00		pCi/L
				Uranium	24.00		pCi/L
	6/13/79	H000FYV0	N	Strontium-90	4.00		pCi/L
				Uranium	24.00		pCi/L
	7/10/79	H000FYV1	N	Strontium-90	2.50		pCi/L
				Uranium	24.00		pCi/L
	8/07/79	H000FYV2	N	Strontium-90	2.30		pCi/L
				Uranium	22.00		pCi/L
	9/04/79	H000FYV3	N	Strontium-90	5.90		pCi/L
				Uranium	23.00		pCi/L
	10/11/79	H000FYV4	N	Strontium-90	3.20		pCi/L
				Uranium	29.00		pCi/L
	11/07/79	H000FYV5	N	Strontium-90	6.80		pCi/L
				Uranium	24.00		pCi/L
	1/30/80	H000FYV6	N	Strontium-90	4.10		pCi/L
				Uranium	19.00		pCi/L
	4/09/80	H000FYV7	N	Strontium-90	2.30		pCi/L
				Uranium	19.00		pCi/L
	4/23/80	H000FYV8	N	Strontium-90	2.10		pCi/L
				Uranium	24.00		pCi/L
	6/13/80	H000FYV9	N	Strontium-90	2.00		pCi/L
				Uranium	24.00		pCi/L
	8/13/80	H000FYW0	N	Strontium-90	5.40		pCi/L
				Uranium	22.00		pCi/L
	9/10/80	H000FYW1	N	Strontium-90	4.10		pCi/L
				Uranium	27.00		pCi/L
	11/05/80	H000FYW2	N	Strontium-90	6.10		pCi/L
				Uranium	29.00		pCi/L
	1/09/81	H000FYW3	N	Strontium-90	3.50		pCi/L
				Uranium	27.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-10	3/24/81	H000FYW4	N	Uranium	6.90		pCi/L
	6/22/81	H000FYW5	N	Uranium	19.00		pCi/L
	9/14/81	H000FYW6	N	Uranium	25.00		pCi/L
	1/07/82	H000FYW7	N	Uranium	21.00		pCi/L
	4/06/82	H000FYW8	N	Uranium	16.00		pCi/L
	6/14/82	H000FYW9	N	Uranium	17.00		pCi/L
	9/20/82	H000FYX0	N	Uranium	14.00		pCi/L
	11/29/82	H000FYX1	N	Uranium	6.70		pCi/L
	3/21/83	H000FYX2	N	Strontium-90	5.30		pCi/L
				Uranium	6.70		pCi/L
	6/20/83	H000FYX3	N	Cesium-137	-8.60		pCi/L
				Strontium-90	6.70		pCi/L
				Uranium	15.00		pCi/L
	9/19/83	H000FYX4	N	Strontium-90	1.50		pCi/L
				Uranium	24.00		pCi/L
	12/05/83	H000FYX5	N	Strontium-90	2.00		pCi/L
				Uranium	20.00		pCi/L
	3/23/84	H000FYX6	N	Strontium-90	-.19		pCi/L
				Uranium	16.00		pCi/L
	6/04/84	H000FYX7	N	Strontium-90	1.00		pCi/L
				Uranium	17.00		pCi/L
	10/12/84	H000FYX8	N	Strontium-90	5.00		pCi/L
				Uranium	25.00		pCi/L
	12/28/84	H000FYX9	N	Strontium-90	2.60		pCi/L
				Uranium	25.00		pCi/L
	1/24/85	H000FYY0	N	Strontium-90	2.00		pCi/L
				Uranium	28.00		pCi/L
	4/08/85	H000FYY2	N	Strontium-90	-.25		pCi/L
				Uranium	29.00		pCi/L
	7/15/85	H000FYY4	N	Strontium-90	2.60		pCi/L
				Uranium	31.00		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-4-10	12/27/85	H000FYY5	N	Strontium-90	2.90		pCi/L
				Uranium	37.00		pCi/L
	2/20/86	H000FYY7	N	Strontium-90	1.80		pCi/L
				Uranium	32.00		pCi/L
	4/24/86	H000FYY8	N	Strontium-90	.14 U		pCi/L
				Uranium	38.00		pCi/L
	7/14/86	H000FYZ0	N	Strontium-90	2.80		pCi/L
				Uranium	19.00		pCi/L
	10/10/86	H000FYZ2	N	Strontium-90	3.30		pCi/L
				Uranium	32.00		pCi/L
	1/08/87	H000FYZ3	N	Cesium-137	-7.57 U	7.94	pCi/L
				Strontium-90	.27 U	.64	pCi/L
				Uranium	27.70	7.34	pCi/L
	5/07/87	H000FYZ4	N	Cesium-137	4.33 U	5.26	pCi/L
				Strontium-90	-.26 U	.53	pCi/L
				Uranium	17.60	4.60	pCi/L
	7/21/87	H000FYZ5	N	Cesium-137	-.69 U	6.31	pCi/L
				Strontium-90	.03 U	.69	pCi/L
				Uranium	30.70	7.86	pCi/L
	10/19/87	H000FYZ6	N	Cesium-137	3.10 U	5.07	pCi/L
				Strontium-90	-.30 U	.56	pCi/L
				Uranium	38.30	10.00	pCi/L
	2/08/88	H000FYZ7	N	Cesium-137	3.35 U	5.49	pCi/L
				Strontium-90	-.43 U	.62	pCi/L
				Uranium	30.40	8.38	pCi/L
	5/31/88	H000FYZ8	N	Cesium-137	6.01 U	6.75	pCi/L
				Strontium-90	-.24 U	.59	pCi/L
				Uranium	26.70	7.39	pCi/L
	7/07/88	H000FYZ9	N	Cesium-137	2.98 U	4.88	pCi/L
				Strontium-90	-.26 U	.68	pCi/L
				Uranium	29.70	8.34	pCi/L
	11/29/88	H000FZ00	N	Cesium-137	1.76 U	4.70	pCi/L
				Strontium-90	.04 U	.64	pCi/L
				Uranium	21.70	6.00	pCi/L
	12/03/91	B01DL8	Y	Barium	50.70		ug/L
				Cadmium	1.00		ug/l
				Chromium	2.00		ug/l
				Lead	5.80		ug/l

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-10	1/08/92	B01DL7	N	Barium	50.60		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	7.58 U		pCi/L
				Chromium	6.00		ug/L
				Lead	2.00		ug/L
				Strontium-90	26 J		pCi/L
	5/13/92	B062F5	N	Barium	52.60 E		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.50		ug/L
				Lead	1.10		ug/L
		B062F6	Y	Barium	52.50		ug/L
				Cadmium	1.00		ug/L
				Chromium	5.00		ug/L
				Lead	1.00		ug/L
	9/14/92	B075Z9	N	Barium	53.70 E		ug/L
				Cadmium	1.50		ug/L
				Cesium-137	12.00 U		pCi/L
				Chromium	16.90		ug/L
				Lead	1.90		ug/L
				Strontium-90	.07 U		pCi/L
		B07600	Y	Barium	50.80		ug/L
				Cadmium	1.00		ug/L
				Chromium	4.50		ug/L
				Lead	1.70		ug/L
	11/12/92	B07PB2	N	Uranium	56.00		ug/L
					56.00	10.00	ug/L
	3/03/93	B086R2	N	Uranium	43.00		ug/L
					43.00	8.10	ug/L
		B086S4	N	Uranium	43.00		ug/L
					43.00	8.10	ug/L
	8/31/93	B08ZT5	N	Uranium	.35	.19	ug/L
	9/22/93	B095L4	N	Uranium	70.00		ug/L
					70.00	12.00	ug/L
		B095L5	N	Uranium	70.00		ug/L
					70.00	12.00	ug/L
		B095L6	N	Uranium	52.00		ug/L
					52.00	9.10	ug/L
		B095L7	N	Uranium	61.00		ug/L
					61.00	11.00	ug/L
		B095L8	N	Uranium	70.00		ug/L
					70.00	12.00	ug/L
	9/28/93	B098W0	N	Uranium	4.32	1.29	ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-10	6/23/94	B0BZM0	N	Barium	53.20		ug/L
				Cadmium	1.80		ug/L
				Chromium	2.80		ug/L
				Uranium	42.40	6.36	ug/L
		B0BZM1	Y	Barium	52.20		ug/L
				Cadmium	1.80		ug/L
				Chromium	2.80		ug/L
		B0BZM3	Y	Barium	53.70		ug/L
				Cadmium	1.80		ug/L
				Chromium	2.80		ug/L
	6/24/94	B0BZM2	Y	Barium	53.40		ug/L
				Cadmium	1.80		ug/L
				Chromium	2.80		ug/L
				Uranium	41.50	6.22	ug/L
		B0C1Y2	N	Uranium	32.40	10.28	ug/L
	10/06/94	B0D4W9	N	Uranium	55.00		ug/L
					55.00	8.40	ug/L
	8/05/95	B0GF75	N	Uranium	37.50	10.60	ug/L
399-4-11	2/24/87	H000FZ02	N	Barium	28.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	17.00		ug/L
				Lead	5.00 U		ug/L
		H000FZ02F	Y	Barium	28.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/01/87	H000FZ03	N	Barium	28.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FZ03F	Y	Barium	28.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	4/23/87	H000FZ04	N	Barium	32.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FZ04F	Y	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	6/25/87	H000FZ05	N	Barium	41.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	14.00		ug/L
				Lead	5.00 U		ug/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-4-11	6/25/87	H000FZ05F	Y	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/26/87	H000FZ06	N	Barium	40.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FZ06F	Y	Barium	41.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	11/11/87	H000FZ07	N	Barium	43.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	23.00		ug/L
				Lead	5.00 U		ug/L
				Uranium	16.80	4.20	ug/L
		H000FZ07F	Y	Barium	39.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	2/12/88	H000FZ08	N	Uranium	9.38	2.70	pCi/L
	5/25/88	H000FZ09	N	Uranium	8.57	2.48	pCi/L
		H000FZ10	N	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FZ10F	Y	Barium	33.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	8/11/88	H000FZ11	N	Uranium	13.20	3.71	pCi/L
	8/17/88	H000FZ12	N	Barium	35.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
		H000FZ12F	Y	Barium	38.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
	12/05/88	H000FZ13	N	Uranium	6.28	1.82	pCi/L
	12/15/88	H000FZ14	N	Barium	30.00		ug/L
				Cadmium	2.00 U		ug/L
				Chromium	10.00 U		ug/L
				Lead	5.00 U		ug/L
				Uranium	6.89	1.99	pCi/L
		H000FZ14F	Y	Barium	31.00		ug/L
				Cadmium	2.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-11	12/15/88	H000FZ14F	Y	Chromium	10.00 U		ug/L
	6/06/89	H000FZ15	N	Barium	30.00	3.97	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	8.75	2.49	pCi/L
		H000FZ15F	Y	Barium	38.00	4.69	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	12/20/89	H000FZ20	N	Barium	33.00	4.23	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
				Lead	5.00 U	2.55	ug/L
				Uranium	7.04	1.98	pCi/L
		H000FZ20F	Y	Barium	31.00	4.06	ug/L
				Cadmium	2.00 U	1.38	ug/L
				Chromium	10.00 U	5.13	ug/L
	5/21/90	H000FZ21	N	Lead	5.00 U	2.55	ug/L
	7/15/91	H00071W5	N	Barium	38.00	5.24	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	22.00	13.10	ug/L
				Lead	5.00 U		ug/L
				Uranium	13.70	3.91	ug/L
		H00071W5F	Y	Barium	38.00	5.24	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L
				Lead	5.00 U		ug/L
	12/03/91	B01DZ1	N	Barium	39.40		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	8.15 U		pCi/L
				Chromium	28.10		ug/L
				Lead	2.10		ug/L
				Strontium-90	.28 UJ		pCi/L
		B01DZ2	Y	Barium	34.80		ug/L
				Cadmium	1.00		ug/L
				Chromium	2.00		ug/L
				Lead	1.00		ug/L
	12/11/91	B01FT2	N	Barium	36.00	4.97	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	22.00	13.10	ug/L
				Lead	5.00 U		ug/L
				Uranium	14.90	4.18	ug/L
		B01FT3	N	Barium	36.00	4.97	ug/L
				Cadmium	10.00 U		ug/L
				Chromium	20.00 U		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-11	12/11/91	B01FT3	N	Lead	5.00 U		ug/L
	5/06/92	B062X8	N	Barium	34.20		ug/L
				Cadmium	2.00		ug/L
				Cesium-137	5.90 U		pCi/L
				Chromium	363.00		ug/L
				Lead	1.40		ug/L
				Strontium-90	.05 U		pCi/L
		B062X9	Y	Barium	34.00		ug/L
				Cadmium	2.00		ug/L
				Chromium	3.40		ug/L
				Lead	4.30 *		ug/L
	7/14/92	B07088	N	Barium	35.00 G	4.83	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
				Uranium	12.80	3.68	ug/L
		B07089	Y	Barium	35.00 G	4.83	ug/L
				Cadmium	10.00 UG		ug/L
				Chromium	20.00 UG		ug/L
				Lead	5.00 UG		ug/L
	11/13/92	B07PB4	N	Uranium	13.00		ug/L
					13.00	2.50	ug/L
	3/09/93	B086R3	N	Uranium	17.00		ug/L
					17.00	5.30	ug/L
	6/27/94	B0C1W2	N	Strontium-90	.23	.27	pCi/L
	10/06/95	B0GHW9	N	Cesium-137	.66 U	1.05	pCi/L
				Uranium	23.57	6.70	ug/L
	6/17/96	B0HX36	N	Cesium-137	-1.17 U	2.06	pCi/L
				Strontium-90	-.15	.28	pCi/L
				Uranium	40.38	11.53	ug/L
	8/11/97	B0LN42	N	Uranium	50.70	11.10	ug/L
399-4-5	6/20/78	H000FZ23	N	Uranium	12.00		pCi/L
	8/07/78	H000FZ24	N	Uranium	10.00		pCi/L
399-4-9	10/01/76	H000DK83	N	Strontium-90	.00		pCi/L
	10/27/76	H000DK84	N	Uranium	28.00		pCi/L
	12/02/76	H000DK85	N	Uranium	15.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-9	1/05/77	H000DK86	N	Uranium	60.00		pCi/L
	1/25/77	H000DK87	N	Cesium-137	.01		pCi/L
				Uranium	34.00		pCi/L
	2/09/77	H000DK88	N	Uranium	29.00		pCi/L
	3/30/77	H000DK91	N	Uranium	27.00		pCi/L
	4/29/77	H000DK93	N	Uranium	64.00		pCi/L
	11/02/77	H000DKB5	N	Cesium-137	16.00		pCi/L
	1/04/78	H000DKB9	N	Cesium-137	12.00		pCi/L
				Strontium-90	1.80		pCi/L
	2/07/78	H000DKC0	N	Strontium-90	2.10		pCi/L
	3/01/78	H000DKC1	N	Cesium-137	15.00		pCi/L
				Strontium-90	.45		pCi/L
				Uranium	26.00		pCi/L
	3/24/78	H000DKC2	N	Uranium	27.00		pCi/L
	4/26/78	H000DKC3	N	Strontium-90	.66		pCi/L
				Uranium	34.00		pCi/L
	5/16/78	H000DKC4	N	Strontium-90	4100.00		pCi/L
				Uranium	37.00		pCi/L
		H000DKC5	N	Strontium-90	1.10		pCi/L
	6/19/78	H000DKC6	N	Strontium-90	.52		pCi/L
				Uranium	37.00		pCi/L
	7/11/78	H000DKC7	N	Uranium	24.00		pCi/L
	8/07/78	H000DKC8	N	Uranium	24.00		pCi/L
	9/14/78	H000DKC9	N	Uranium	11.00		pCi/L
	10/13/78	H000DKD0	N	Uranium	9.60		pCi/L
	11/08/78	H000DKD1	N	Uranium	31.00		pCi/L
	11/28/78	H000DKD2	N	Uranium	23.00		pCi/L
	1/08/79	H000DKD3	N	Strontium-90	3.10		pCi/L
				Uranium	21.00		pCi/L
	1/24/79	H000DKD4	N	Strontium-90	3.80		pCi/L

Well	Collect Date	Sample Number	Fil-tered	Constituent Name	Result	Error	Units
399-4-9	1/24/79	H000DKD4	N	Uranium	16.00		pCi/L
	2/22/79	H000DKD5	N	Strontium-90	4.40		pCi/L
				Uranium	16.00		pCi/L
	3/19/79	H000DKD6	N	Strontium-90	2.00		pCi/L
				Uranium	21.00		pCi/L
	4/17/79	H000DKD7	N	Strontium-90	3.60		pCi/L
				Uranium	24.00		pCi/L
	5/16/79	H000DKD8	N	Strontium-90	2.00		pCi/L
				Uranium	25.00		pCi/L
	6/13/79	H000DKD9	N	Strontium-90	2.00		pCi/L
				Uranium	24.00		pCi/L
	7/10/79	H000DKF0	N	Strontium-90	2.80		pCi/L
				Uranium	22.00		pCi/L
	8/07/79	H000DKF1	N	Strontium-90	1.70		pCi/L
				Uranium	24.00		pCi/L
	9/04/79	H000DKF2	N	Strontium-90	4.90		pCi/L
				Uranium	21.00		pCi/L
	10/11/79	H000DKF3	N	Strontium-90	2.50		pCi/L
				Uranium	19.00		pCi/L
	11/07/79	H000DKF4	N	Strontium-90	4.20		pCi/L
				Uranium	16.00		pCi/L
	12/03/79	H000DKF5	N	Strontium-90	8.20		pCi/L
				Uranium	14.00		pCi/L
	1/11/80	H000DKF6	N	Strontium-90	1.70		pCi/L
				Uranium	10.00		pCi/L
	1/30/80	H000DKF7	N	Strontium-90	2.60		pCi/L
				Uranium	17.00		pCi/L
	2/27/80	H000DKF8	N	Strontium-90	1.60		pCi/L
	4/09/80	H000DKF9	N	Strontium-90	1.40		pCi/L
				Uranium	27.00		pCi/L
	4/23/80	H000DKG0	N	Strontium-90	2.00		pCi/L
				Uranium	18.00		pCi/L
	6/13/80	H000DKG1	N	Strontium-90	2.30		pCi/L
				Uranium	18.00		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-9	7/16/80	H000DKG2	N	Strontium-90	9.30		pCi/L
				Uranium	18.00		pCi/L
	8/13/80	H000DKG3	N	Strontium-90	4.00		pCi/L
				Uranium	23.00		pCi/L
	1/09/81	H000DKG4	N	Strontium-90	1.90		pCi/L
				Uranium	12.00		pCi/L
	1/29/81	H000DKG5	N	Strontium-90	2.50		pCi/L
				Uranium	13.00		pCi/L
	3/11/81	H000DKG6	N	Strontium-90	6.90		pCi/L
				Uranium	6.90		pCi/L
	3/24/81	H000DKG7	N	Strontium-90	3.20		pCi/L
				Uranium	13.00		pCi/L
	4/24/81	H000DKG8	N	Cesium-137	30.00		pCi/L
				Strontium-90	3.20		pCi/L
				Uranium	18.00		pCi/L
	6/02/81	H000DKG9	N	Strontium-90	2.30		pCi/L
				Uranium	11.00		pCi/L
	6/22/81	H000DKH0	N	Strontium-90	2.20		pCi/L
				Uranium	6.00		pCi/L
	7/22/81	H000DKH1	N	Strontium-90	3.20		pCi/L
				Uranium	24.00		pCi/L
	8/25/81	H000DKH2	N	Strontium-90	7.00		pCi/L
				Uranium	22.00		pCi/L
	9/14/81	H000DKH3	N	Strontium-90	3.10		pCi/L
				Uranium	24.00		pCi/L
	10/14/81	H000DKH4	N	Strontium-90	3.10		pCi/L
				Uranium	24.00		pCi/L
	11/04/81	H000DKH5	N	Strontium-90	2.50		pCi/L
				Uranium	6.70		pCi/L
	1/07/82	H000DKH6	N	Strontium-90	3.00		pCi/L
				Uranium	19.00		pCi/L
	2/05/82	H000DKH7	N	Strontium-90	13.00		pCi/L
				Uranium	24.00		pCi/L
	4/23/82	H000DKH8	N	Strontium-90	6.70		pCi/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-9	4/23/82	H000DKH8	N	Uranium	17.00		pCi/l
	10/19/82	H000DKH9	N	Strontium-90	3.80		pCi/l
				Uranium	27.00		pCi/l
	3/21/83	H000DKJ0	N	Strontium-90	2.20		pCi/l
				Uranium	6.70		pCi/l
	6/20/83	H000DKJ1	N	Cesium-137	-4.90		pCi/l
				Strontium-90	.94		pCi/l
				Uranium	14.00		pCi/l
	9/21/83	H000DKJ2	N	Strontium-90	2.30		pCi/l
				Uranium	18.00		pCi/l
	12/02/83	H000DKJ3	N	Strontium-90	2.40		pCi/l
				Uranium	16.00		pCi/l
	2/06/84	H000DKJ4	N	Strontium-90	3.60		pCi/l
				Uranium	11.00		pCi/l
	4/13/84	H000DKJ5	N	Strontium-90	.87		pCi/l
				Uranium	16.00		pCi/l
	7/19/84	H000DKJ6	N	Strontium-90	1.30		pCi/l
				Uranium	4.90		pCi/l
	10/12/84	H000DKJ7	N	Strontium-90	-4.20		pCi/l
				Uranium	21.00		pCi/l
	1/24/85	H000DKJ8	N	Strontium-90	1.60		pCi/l
				Uranium	-.80		pCi/l
	4/15/85	H000DKK0	N	Strontium-90	-.12		pCi/l
				Uranium	21.00		pCi/l
	9/12/85	H000DKK2	N	Strontium-90	4.10		pCi/l
				Uranium	46.00		pCi/l
	12/27/85	H000DKK3	N	Strontium-90	5.50		pCi/l
				Uranium	24.00		pCi/l
	1/30/86	H000DKK4	N	Strontium-90	1.90		pCi/l
				Uranium	8.80		pCi/l
	4/24/86	H000DKK5	N	Strontium-90	1.90		pCi/l
				Uranium	33.00		pCi/l
	7/15/86	H000DKK7	N	Strontium-90	.96 U		pCi/l
				Uranium	33.00		pCi/l

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-9	10/10/86	H000DKK9	N	Strontium-90	3.40		pCi/L
				Uranium	30.00		pCi/L
	1/08/87	H000DKL0	N	Cesium-137			
				Strontium-90			
				Uranium			
	3/18/87	H000DKL1	N	Cesium-137	1.33 U	5.95	pCi/L
				Strontium-90	.26 U	.73	pCi/L
				Uranium	24.30	6.12	pCi/L
	4/07/87	H000DKL2	N	Cesium-137	5.33	3.80	pCi/L
				Strontium-90	.78 U	1.05	pCi/L
				Uranium	25.80	6.66	pCi/L
	7/21/87	H000DKL3	N	Cesium-137	3.85 U	6.74	pCi/L
				Strontium-90	.27 U	.73	pCi/L
				Uranium	25.90	6.64	pCi/L
	10/19/87	H000DKL4	N	Cesium-137	-.34 U	4.01	pCi/L
				Strontium-90	.12 U	.66	pCi/L
				Uranium	29.80	7.74	pCi/L
	2/08/88	H000DKL5	N	Cesium-137	3.39 U	4.54	pCi/L
				Strontium-90	.05 U	.70	pCi/L
				Uranium	22.80	6.32	pCi/L
	5/31/88	H000DKL6	N	Cesium-137	0.00 U	6.38	pCi/L
				Strontium-90	.45 U	.68	pCi/L
				Uranium	24.10	6.67	pCi/L
	7/07/88	H000DKL7	N	Cesium-137	-1.27 U	5.69	pCi/L
				Strontium-90	-.32 U	.63	pCi/L
				Uranium	28.60	8.00	pCi/L
	11/29/88	H000DKL8	N	Cesium-137	2.25 U	5.82	pCi/L
				Strontium-90	-.40 U	.60	pCi/L
				Uranium	14.30	3.99	pCi/L
	12/03/91	B01DY5	N	Barium	50.60		ug/L
				Cadmium	3.00		ug/L
				Cesium-137	6.58 U		pCi/L
				Chromium	6.00		ug/L
				Lead	3.10		ug/L
				Strontium-90	.25 UJ		pCi/L
		B01DY6	Y	Barium	50.40		ug/L
				Cadmium	1.50		ug/L
				Chromium	2.00		ug/L
				Lead	1.00		ug/L
	4/21/92	B062F2	N	Barium	59.80		ug/L

Well	Collect Date	Sample Number	Filtered	Constituent Name	Result	Error	Units
399-4-9	4/21/92	B062F2	N	Cadmium	1.30		ug/L
				Cesium-137	9.50 UJ		pCi/L
				Chromium	5.00		ug/L
				Lead	2.40		ug/L
				Strontium-90	.16 UJ		pCi/L
				Uranium	50.00		ug/L
					50.00	9.50	ug/L
		B062F3	Y	Barium	55.20		ug/L
				Cadmium	1.00		ug/L
				Chromium	5.00		ug/L
				Lead	1.60		ug/L
	9/09/92	B075Z5	N	Barium	48.30		ug/L
				Cadmium	1.00		ug/L
				Cesium-137	14.00 UJ		pCi/L
				Chromium	4.50		ug/L
				Lead	2.10		ug/L
				Strontium-90	.04 UJ		pCi/L
		B075Z6	Y	Barium	53.40		ug/L
				Cadmium	1.00		ug/L
				Chromium	4.50		ug/L
				Lead	2.40		ug/L
	9/14/92	B01323	N	Barium	52.80		ug/L
				Cadmium	1.50		ug/L
				Cesium-137	11.00 U		pCi/L
				Chromium	2.60		ug/L
				Lead	1.00		ug/L
				Strontium-90	.12 UJ		pCi/L
		B076G2	N	Barium	54.60		ug/L
				Cadmium	1.50		ug/L
				Chromium	2.60		ug/L
				Lead	2.00		ug/L
	11/10/92	B07PB0	N	Uranium	45.00		ug/L
					45.00	8.40	ug/L
	8/31/93	B08ZT6	N	Uranium	.38	.18	ug/L
	6/27/94	B0C1Y3	N	Uranium	38.90	12.19	ug/L
	8/13/96	B0HZ00	N	Uranium	74.10	16.30	ug/L
	8/20/97	B0LJT0	N	Uranium	128.00	28.50	ug/L