This document was too large to scan as a whole document, therefore it required breaking into smaller sections.

Document number: SD-WM-DP-156

Section 2 **of** 3

Title: Addendum to the Tank 241S107 Final Report Push Mode Cores 105 & 110 & 111 [Pg. 2419 Thru 2619]

Date: 07/31/1996 **Revision:** R01B

Originator: Bell KE
Co: WHC

Recipient:
Co:

References: ECN-633314

WORKBOOK PAGE: DUP7

TIC/TOC : LA-342-100 (C-0) **SOLIDS**

			TIC	TOC
	Sample Size in g	(SS)	0.2145	0.2145
DUP	Dilution Factor	(DF)	1	1
	µg of Carbon in Sample	(C1)	451.5	356.6
9916	µg of Carbon from Baseline	(C2)	6.2	31.6
	Known µg of C from Original Sample		2.10E+3	1.42E+3
@TICTOC1				

SOLID

96006095

0

N/A

S96T003288

CARB2

RTS

RWS

PJM

06/17/96

06/15/96

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

		TIC	TOC
	Method Detection Limit in ug/g	5	40
	ug of Carbon/g	2.08E+03	1.52E+03

S-107

Data Entered By:	RTS	Date:	06/17/96
Signature of Chemist:		Date:	

SAMPLE.WB1 REV 1.0 342100ML

RW Schroeder 6/18/96

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASELINE Date: 06/15/96 Time: 09:15:03

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.60	66.67
3	1.51	1.30	53.85
4	2.00	1.70	23.53
5	2.50	2.00	15.00
6	3.00	2.20	9.09
7	3.50	2.60	15.38
8	4.00	2.70	3.70
9	4.50	3.00	10.00
10	5.00	3.30	9.09
11	5.50	3.40	2.94
12	6.00	3.70	8.11
13	6.50	4.00	7.50
14	7.00	4.20	4.76
15	7.50	4.40	4.55
16	8.00	4.70	6.38
17	8.50	4.90	4.08
18	9.00	5.20	5.77
19	9.50	5.40	3.70
20	10.00	5.60	3.57
21	10.50	5.90	5.08
22	11.00	6.20	4.84

BLANK VALUE = 6.2 micrograms carbon
BLANK FACTOR = 6.2 / 10.99988 = +5.6E-01 ug/min Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASELINE Date: 06/15/96 Time: 09:27:46

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.50	93.33
3	1.51	9.60	84.38
4	2.00	18.40	47.83
5	2.50	23.00	20.00
6	3.00	24.70	6.88
7	3.50	25.80	4.26
8	4.00	26.60	3.01
9	4.50	27.30	2.56
10	5.00	27.80	1.80
11	5.50	28.30	1.77
12	6.00	28.70	1.39
13	6.50	29.00	1.03
14	7.00	29.30	1.02
15	7.50	29.60	1.01
16	8.00	29.90	1.00
17	8.50	30.20	0.99
18	9.00	30.50	0.98
19	9.50	30.80	0.97
20	10.00	31.00	0.65
21	10.50	31.30	0.96
22	11.00	31.60	0.95

BLANK VALUE = 31.6 micrograms carbon
BLANK FACTOR = 31.6 / 10.99799 = +2.87E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 22N12B STD Date: 06/15/96 Time: 09:42:53

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	25.20	98.81
3	1.51	192.50	86.91
4	2.00	372.40	48.31
5	2.50	486.60	23.47
6	3.00	549.50	11.45
7	3.50	579.90	5.24
8	4.00	590.70	1.83
9	4.50	594.70	0.67
10	5.00	596.10	0.23
11	5.50	596.70	0.10
12	6.00	597.00	0.05
13	6.50	597.50	0.08
14	7.00	597.90	0.07
15	7.50	598.40	0.08
16	8.00	598.60	0.03
17	8.50	598.90	0.05
18	9.00	599.20	0.05
19	9.50	599.50	0.05
20	10.00	599.70	0.03
21	10.50	600.00	0.05
22	11.00	600.40	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(600.4 - 6.160957)(1)/(1000) = +5.942E-01 g/L Carbon
(600.4 - 6.160957)(1)/(1000)(12) = +4.952E-02 Molar Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

1.0mL
22N12B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 24N12A STD Date: 06/15/96 Time: 09:55:11

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	5.20	100.00
3	1.50	70.90	92.67
4	2.00	309.10	77.06
5	2.50	489.80	36.89
6	3.00	548.60	10.72
7	3.50	566.20	3.11
8	4.00	571.20	0.88
9	4.50	573.20	0.35
10	5.00	574.60	0.24
11	5.50	575.10	0.09
12	6.00	576.00	0.16
13	6.50	576.60	0.10
14	7.00	577.00	0.07
15	7.50	577.50	0.09
16	8.00	578.10	0.10
17	8.50	578.30	0.03
18	9.00	578.70	0.07
19	9.50	579.00	0.05
20	10.00	579.40	0.07
21	10.50	579.70	0.05
22	11.00	580.10	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(580.1 - 31.56667)(1)/(200) = +2.743E+00 g/L Carbon
(580.1 - 31.56667)(1)/(200)(12) = +2.286E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.200mL
24N12A

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLANK Date: 06/15/96 Time: 10:10:28

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	0.90	44.44
3	1.51	1.20	25.00
4	2.00	1.80	33.33
5	2.50	2.20	18.18
6	3.00	2.40	8.33
7	3.50	2.70	11.11
8	4.00	2.90	6.90
9	4.50	3.10	6.45
10	5.00	3.40	8.82
11	5.50	3.70	8.11
12	6.00	3.90	5.13
13	6.50	4.20	7.14
14	7.00	4.50	6.67
15	7.50	4.70	4.26
16	8.00	5.00	6.00
17	8.50	5.30	5.66
18	9.00	5.50	3.64
19	9.50	5.80	5.17
20	10.00	6.00	3.33
21	10.50	6.30	4.76
22	11.00	6.50	3.08

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(6.5 - 6.16041)(1)/(1) = +3.4E-01 g/L Carbon
(6.5 - 6.16041)(1)/(1)(12) = +2.8E-02 Molar Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLANK Date: 06/15/96 Time: 10:23:36

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.90	100.00
3	1.51	5.90	84.75
4	2.00	12.80	53.91
5	2.50	16.70	23.35
6	3.00	18.50	9.73
7	3.50	19.40	4.64
8	4.00	20.40	4.90
9	4.50	20.90	2.39
10	5.00	21.80	4.13
11	5.50	22.20	1.80
12	6.00	22.70	2.20
13	6.50	23.00	1.30
14	7.00	23.30	1.29
15	7.50	23.70	1.69
16	8.00	24.00	1.25
17	8.50	24.30	1.23
18	9.00	24.70	1.62
19	9.50	24.90	0.80
20	10.00	25.20	1.19
21	10.50	25.50	1.18
22	11.00	25.70	0.78

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(25.7 - 31.57175)(1)/(1) = < 5.00 E-3 g/L Carbon
(25.7 - 31.57175)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003290 Date: 06/15/96 Time: 10:59:37

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	9.80	96.94
3	1.51	52.40	81.30
4	2.00	108.00	51.48
5	2.50	160.50	32.71
6	3.00	192.50	16.62
7	3.50	208.40	7.63
8	4.00	216.60	3.79
9	4.50	221.10	2.04
10	5.00	223.50	1.07
11	5.50	225.20	0.75
12	6.00	226.60	0.62
13	6.50	227.60	0.44
14	7.00	228.60	0.44
15	7.50	229.70	0.48
16	8.00	230.50	0.35
17	8.50	231.40	0.39
18	9.00	232.10	0.30
19	9.50	233.00	0.39
20	10.00	233.60	0.26
21	10.50	234.20	0.26
22	11.00	234.90	0.30

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(234.9 - 6.158872)(1)/(1) = +2.287E+02 g/L Carbon
(234.9 - 6.158872)(1)/(1)(12) = +1.906E+01 Molar Carbon

Sample Run By: PJ McCown 10/15/96
PJ MCCOWN 00000

.12009

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003290 Date: 06/15/96 Time: 11:25:59

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	20.30	98.03
3	1.51	111.70	81.83
4	2.00	456.10	75.51
5	2.50	713.80	36.10
6	3.00	809.00	11.77
7	3.50	854.30	5.30
8	4.00	876.70	2.56
9	4.50	887.90	1.26
10	5.00	895.50	0.85
11	5.50	900.40	0.54
12	6.00	903.90	0.39
13	6.50	906.80	0.32
14	7.00	908.70	0.21
15	7.50	910.50	0.20
16	8.00	912.00	0.16
17	8.50	913.30	0.14
18	9.00	914.20	0.10
19	9.50	914.90	0.08
20	10.00	915.70	0.09
21	10.50	916.50	0.09
22	11.00	917.10	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(917.1 - 31.56667)(1)/(1) = +8.855E+02 g/L Carbon
(917.1 - 31.56667)(1)/(1)(12) = +7.379E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.1200g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3290 DUP Date: 06/15/96 Time: 11:43:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	10.80	96.30
3	1.50	47.20	77.12
4	2.00	94.30	49.95
5	2.50	136.20	30.76
6	3.00	165.00	17.45
7	3.50	181.10	8.89
8	4.00	188.50	3.93
9	4.50	192.10	1.87
10	5.00	193.90	0.93
11	5.50	195.30	0.72
12	6.00	196.30	0.51
13	6.50	197.40	0.56
14	7.00	198.40	0.50
15	7.50	199.30	0.45
16	8.00	200.00	0.35
17	8.50	200.80	0.40
18	9.00	201.50	0.35
19	9.50	202.30	0.40
20	10.00	202.90	0.30
21	10.50	203.70	0.39
22	11.00	204.20	0.24

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(204.2 - 6.160376)(1)/(1) = +1.980E+02 g/L Carbon
(204.2 - 6.160376)(1)/(1)(12) = +1.650E+01 Molar Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.1187g

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3290 DUP Date: 06/15/96 Time: 11:58:06

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	3.30	87.88
3	1.51	28.20	88.30
4	2.01	85.30	66.94
5	2.51	297.10	71.29
6	3.01	559.70	46.92
7	3.51	696.10	19.59
8	4.00	757.90	8.15
9	4.50	788.80	3.92
10	5.00	804.40	1.94
11	5.50	813.10	1.07
12	6.00	818.70	0.68
13	6.50	822.60	0.47
14	7.00	825.60	0.36
15	7.50	828.00	0.29
16	8.00	829.90	0.23
17	8.50	831.40	0.18
18	9.00	832.60	0.14
19	9.50	833.80	0.14
20	10.00	834.80	0.12
21	10.50	835.70	0.11
22	11.00	836.30	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(836.3 - 31.5742)(1)/(1) = +8.047E+02 g/L Carbon
(836.3 - 31.5742)(1)/(1)(12) = +6.706E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 10/15/96
PJ MCCOWN 00000

.11878

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

Sample: 3290 SPK Date: 06/15/96 Time: 13:14:46

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	37.40	95.19
3	1.51	152.00	75.39
4	2.00	284.00	46.48
5	2.50	378.80	25.03
6	3.00	435.30	12.98
7	3.50	463.50	6.08
8	4.00	473.70	2.15
9	4.50	478.10	0.92
10	5.00	480.40	0.48
11	5.50	481.70	0.27
12	6.00	482.70	0.21
13	6.50	483.70	0.21
14	7.00	484.60	0.19
15	7.50	485.70	0.23
16	8.00	486.10	0.08
17	8.50	487.20	0.23
18	9.00	487.70	0.10
19	9.50	488.30	0.12
20	10.00	489.10	0.16
21	10.50	489.70	0.12
22	11.00	490.10	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(490.1 - 6.16041)(1)/(1) = +4.839E+02 g/L Carbon
(490.1 - 6.16041)(1)/(1)(12) = +4.033E+01 Molar Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.115/g
+.500ML 22N12B

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3290 SPK Date: 06/15/96 Time: 13:27:24

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	13.70	95.62
3	1.51	69.50	80.29
4	2.00	345.00	79.86
5	2.50	763.20	54.80
6	3.00	950.10	19.67
7	3.50	1022.80	7.11
8	4.00	1055.60	3.11
9	4.50	1072.30	1.56
10	5.00	1082.00	0.90
11	5.50	1088.10	0.56
12	6.00	1092.20	0.38
13	6.50	1095.40	0.29
14	7.00	1097.80	0.22
15	7.50	1099.70	0.17
16	8.00	1101.30	0.15
17	8.50	1102.60	0.12
18	9.00	1103.90	0.12
19	9.50	1104.70	0.07
20	10.00	1105.60	0.08
21	10.50	1106.30	0.06
22	11.00	1107.20	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(1107.2 - 31.56912)(1)/(1) = +1.0756E+03 g/L Carbon
(1107.2 - 31.56912)(1)/(1)(12) = +8.9636E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.1151 g
+.100mL 24N12A

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003288 Date: 06/15/96 Time: 13:41:57

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	8.30	95.18
3	1.51	48.20	82.78
4	2.00	109.10	55.82
5	2.50	162.70	32.94
6	3.00	196.10	17.03
7	3.50	211.40	7.24
8	4.00	217.70	2.89
9	4.50	220.90	1.45
10	5.00	223.10	0.99
11	5.50	224.40	0.58
12	6.00	226.10	0.75
13	6.50	226.90	0.35
14	7.00	227.90	0.44
15	7.50	228.90	0.44
16	8.00	229.80	0.39
17	8.50	230.50	0.30
18	9.00	231.40	0.39
19	9.50	232.20	0.34
20	10.00	232.90	0.30
21	10.50	233.80	0.38
22	11.00	234.40	0.26

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(234.4 - 6.160376)(1)/(1) = +2.282E+02 g/L Carbon
(234.4 - 6.160376)(1)/(1)(12) = +1.902E+01 Molar Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.1086g

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003288 Date: 06/15/96 Time: 13:54:27

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	18.20	93.96
3	1.51	61.10	70.21
4	2.00	114.70	46.73
5	2.51	146.50	21.71
6	3.01	159.70	8.27
7	3.50	166.40	4.03
8	4.00	170.00	2.12
9	4.50	172.70	1.56
10	5.00	175.00	1.31
11	5.50	176.50	0.85
12	6.00	178.00	0.84
13	6.50	179.20	0.67
14	7.00	180.20	0.55
15	7.50	181.40	0.66
16	8.00	181.90	0.27
17	8.50	182.50	0.33
18	9.00	183.20	0.38
19	9.50	183.80	0.33
20	10.00	184.50	0.38
21	10.50	185.10	0.32
22	11.00	185.60	0.27

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(185.6 - 31.57473)(1)/(1) = +1.540E+02 g/L Carbon
(185.6 - 31.57473)(1)/(1)(12) = +1.284E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/15/96
.1086g PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3288 DUP Date: 06/15/96 Time: 14:09:02

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	8.50	92.94
3	1.50	51.60	83.53
4	2.00	134.00	61.49
5	2.50	236.30	43.29
6	3.00	326.10	27.54
7	3.50	381.90	14.61
8	4.00	410.90	7.06
9	4.50	424.50	3.20
10	5.00	430.70	1.44
11	5.50	434.30	0.83
12	6.00	437.40	0.71
13	6.50	439.40	0.46
14	7.00	441.30	0.43
15	7.50	442.90	0.36
16	8.00	444.50	0.36
17	8.50	445.90	0.31
18	9.00	447.10	0.27
19	9.50	448.20	0.25
20	10.00	449.30	0.24
21	10.50	450.50	0.27
22	11.00	451.50	0.22

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(451.5 - 6.160376)(1)/(1) = +4.453E+02 g/L Carbon
(451.5 - 6.160376)(1)/(1)(12) = +3.711E+01 Molar Carbon

Sample Run By: PJ McCown 6/15/96
PJ MCCOWN 00000

.2145g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3288 DUP Date: 06/15/96 Time: 14:25:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	1.00	0.00
2	1.01	23.00	95.65
3	1.51	97.60	76.43
4	2.00	210.40	53.61
5	2.50	284.20	25.97
6	3.00	316.20	10.12
7	3.50	330.40	4.30
8	4.00	336.30	1.75
9	4.50	340.10	1.12
10	5.00	342.90	0.82
11	5.50	345.40	0.72
12	6.00	347.00	0.46
13	6.50	348.40	0.40
14	7.00	349.80	0.40
15	7.50	350.60	0.23
16	8.00	351.70	0.31
17	8.50	352.60	0.26
18	9.00	353.40	0.23
19	9.50	354.30	0.25
20	10.00	355.10	0.23
21	10.50	355.80	0.20
22	11.00	356.60	0.22

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(356.6 - 31.56912)(1)/(1) = +3.250E+02 g/L Carbon
(356.6 - 31.56912)(1)/(1)(12) = +2.709E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ MCCOWN 6/15/96 00000

.2145g

LABCORE Data Entry Template for Worklist# 9917

Analyst: JLS2 **Instrument:** CARB2 _____ **Book#** 22N12B TIC 24N12A TOC

Method: LA-342-100 **Rev/Mod** D-0

Worklist Comment: S-107 TICTOC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S96T003291	0		@TICTOC1	SOLID	95000138	S-107
	Analytes Requested:				TIC-02 , TOC-02			
4	DUP	S96T003291	0		@TICTOC1	SOLID		
5	SPK	S96T003291	0		@TICTOC1	SOLID		
6	SAMPLE	S96T003292	0		@TICTOC1	SOLID	95000138	S-107
	Analytes Requested:				TIC-02 , TOC-02			
7	DUP	S96T003292	0		@TICTOC1	SOLID		
8	TRIPL	S96T003292	0		@TICTOC1	SOLID		
9	SAMPLE	S96T003293	0		@TICTOC1	SOLID	95000138	S-107
	Analytes Requested:				TIC-02 , TOC-02			
10	DUP	S96T003293	0		@TICTOC1	SOLID		

Final page for worklist # 9917

Jacque Steele 6/18/96
Analyst Signature **Date**

_____
Analyst Signature **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Completed Worklist Report for Worklist# 9917

Analyst: jls2 **Instrument:** CARB2 **Book#** _____

Method: LA 342-100 Rev/Mod D-0

Worklist Comment: S-107 TICTOC. RCJ

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	SOLID	1	1.90E+0	1.900	ug/g
1	BLNK			0	@TICTOC1 TOC-02	SOLID	1	3.50E+0	3.500	ug/g
2	STD			0	@TICTOC1 TIC-02	SOLID	6.02E+02	6.02E+2	100.000	% Recovery
2	STD			0	@TICTOC1 TOC-02	SOLID	3.00E+03	2.79E+3	93.000	% Recovery
3	SAMPLE	S96T003291		0	@TICTOC1 TIC-02	SOLID	N/A	1.88E+03	5.000	ug/g
3	SAMPLE	S96T003291		0	@TICTOC1 TOC-02	SOLID	N/A	8.32E+02	40.000	ug/g
4	DUP	S96T003291		0	@TICTOC1 TIC-02	SOLID	1.88E+3	1.71E+3	9.471	RPD
4	DUP	S96T003291		0	@TICTOC1 TOC-02	SOLID	8.32E+2	9.78E+2	16.133	RPD
5	SPK	S96T003291		0	@TICTOC1 TIC-02	SOLID	1.00E+02	1.01E+02	101.000	% Recovery
5	SPK	S96T003291		0	@TICTOC1 TOC-02	SOLID	1.00E+02	1.13E+02	113.000	% Recovery
6	SAMPLE	S96T003292		0	@TICTOC1 TIC-02	SOLID	N/A	2.04E+03	5.000	ug/g
6	SAMPLE	S96T003292		0	@TICTOC1 TOC-02	SOLID	N/A	1.62E+03	40.000	ug/g
7	DUP	S96T003292		0	@TICTOC1 TIC-02	SOLID	2.04E+3	1.87E+3	8.696	RPD
7	DUP	S96T003292		0	@TICTOC1 TOC-02	SOLID	1.62E+3	2.23E+3	31.688	RPD
8	TRIPL	S96T003292		0	@TICTOC1 TIC-02	SOLID	2.04E+3	2.03E+3	0.491	RPD
8	TRIPL	S96T003292		0	@TICTOC1 TOC-02	SOLID	1.62E+3	1.80E+3	10.526	RPD
9	SAMPLE	S96T003293		0	@TICTOC1 TIC-02	SOLID	N/A	2.36E+03	5.000	ug/g
9	SAMPLE	S96T003293		0	@TICTOC1 TOC-02	SOLID	N/A	3.05E+02	40.000	ug/g
10	DUP	S96T003293		0	@TICTOC1 TIC-02	SOLID	2.36E+3	2.35E+3	0.425	RPD
10	DUP	S96T003293		0	@TICTOC1 TOC-02	SOLID	3.05E+2	3.54E+2	14.871	RPD

Final page for worklist# 9917

R H Black 6-21-96
Analyst Signature **Date**

Analyst Signature **Date**

Ralph W Schwerdt 6/21/96
Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
Worklist	µg of Carbon in Sample	(C1)	8.1	28.8
9917	µg of Carbon from Baseline	(C2)	6.2	32.3

Test Code	@TICTOC1
Matrix	SOLID
Batch Number	96006096
Rerun #	0
Sample Prep	N/A
Sample #	BLNK
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon = |C1-C2|

		TIC	TOC
	Method Detection Limit in ug/g	5	40
	µg of Carbon	1.90E+00	3.50E+00

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	Ric Schwarz	Date:	6/21/96

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (D-0) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	0.2000
STD	Dilution Factor	(DF)	1	1
Work List	Final Coulometer Reading in µg	(C1)	608.6	591
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code	Standard Book Number		22N12B	24N12A
@TICTOC1	Standard Value (µg/ml)		602	3000

Matrix	LIQUID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	6.02E+02	2.79E+03
Percent Standard Recovery	100.1	93.1

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schroeder	Date:	6/21/96

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.3780	0.3780
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	718.4	346.7
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code				
@TICTOC1				

Matrix	SOLID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	S96T003291
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.88E+03	8.32E+02

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	Rick Schroeder	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

2440

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.3676	0.3676
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	634.2	391.7
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code	Known µg of C from Original Sample		1.88E+3	8.32E+2
@TICTOC1				

Matrix	SOLID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	S96T003291
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.71E+03	9.78E+02

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schmoller	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SPIKE5

TIC/TOC : LA-342-100 (D-0) SOLIDS

Type	Sample Vial Data		TIC	TOC
SPK	Sample Size in g	(SS)	0.3780	0.3780
Work List	Final Coulometer Reading in µg	(C1)	718.4	346.7
9917	Spiked Vial Data			
Test Code	Sample Size in g	(SPK SS)	0.4047	0.4047
@TICTOC1	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg	(C3)	1079.1	756.5
SOLID	Spike Book Number		22N12B	24N12A
Batch Number	Spike Standard Value in µg/ml		602	3000
96006096	Spike Concentration in µg	(SPK CONC)	301	300
Rerun				
0				
Sample Prep	Spike Concentration in µg = (Spike Std. Value in µg/mL)*(SPK VOL)			
N/A				
Sample #	Percent Spike Recovery = (C3) / [(C1/SS * SPK SS) + (SPK CONC)] * 100			
S96T003291				
Instrument Code	QC Actual in µg/mL = Spike Value (µg/mL)			
CABR2	QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100			
Prepared By				
RTS				
Chemist				
RWS				
Analyst				
JLS2				
Date Complete				
06/21/96				
Analysis Date				
06/18/96				
Analysis Time			TIC	TOC
	QC Actual in µg/mL		6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL		6.07E+02	3.38E+03
S-107	Percent Spike Recovery		100.8	112.7

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schroeder	Date:	6/21/96

SPIKE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM6

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1294	0.1294
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	270.4	241.6
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code				
@TICTOC1				

Matrix	SOLID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	S96T003292
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	2.04E+03	1.62E+03

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schmeeckle	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: DUP7

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1011	0.1011
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	195.5	257.9
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code	Known µg of C from Original Sample		2.04E+3	1.62E+3
@TICTOC1				

Matrix	SOLID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	S96T003292
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

		TIC	TOC
Analysis Time	Method Detection Limit in ug/g	5	40
Sample Point	µg of Carbon/g	1.87E+03	2.23E+03

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schroeder	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

2444

WHC-SD-WM-DP-156, REV. 1B

WORKBOOK PAGE: TRIPL8

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1145	0.1145
TRIPL	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	238.4	238.1
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code	Known µg of C from Original Sample		2.04E+3	1.62E+3
@TICTOC1	Duplicate Result		1.87E+3	2.23E+3

Matrix: SOLID

Batch Number: 96006096

Rerun: 0

Sample Prep: N/A

Sample #: S96T003292

Instrument Code: CABR2

Prepared By: RTS

Chemist: RWS

Analyst: JLS2

Date Complete: 06/21/96

Analysis Date: 06/18/96

Analysis Time:

Sample Point: S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	2.03E+03	1.80E+03

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Johnson	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

2445

WORKBOOK PAGE: SAM9

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.2672	0.2672
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	636.9	113.7
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code				
@TICTOC1				

Matrix	SOLID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	S96T003293
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	2.36E+03	3.05E+02

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	Dwi Schroeder	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

2446

WORKBOOK PAGE: DUP10

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.3743	0.3743
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	886.1	164.7
9917	µg of Carbon from Baseline	(C2)	6.2	32.3
Test Code	Known µg of C from Original Sample		2.36E+3	3.05E+2
@TICTOC1				

Matrix	SOLID
Batch Number	96006096
Rerun	0
Sample Prep	N/A
Sample #	S96T003293
Instrument Code	CABR2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/21/96
Analysis Date	06/18/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	2.35E+03	3.54E+02

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schwartz	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

Sys

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTCC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: ~~2~~BASELINE Date: 06/18/96 Time: 10:28:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.80	100.00
3	1.51	1.40	42.86
4	2.00	1.90	26.32
5	2.50	2.20	13.64
6	3.00	2.50	12.00
7	3.50	2.80	10.71
8	4.00	3.00	6.67
9	4.50	3.30	9.09
10	5.00	3.50	5.71
11	5.50	3.70	5.41
12	6.00	3.90	5.13
13	6.50	4.20	7.14
14	7.00	4.40	4.55
15	7.50	4.60	4.35
16	8.00	4.80	4.17
17	8.50	5.10	5.88
18	9.00	5.30	3.77
19	9.50	5.50	3.64
20	10.00	5.80	5.17
21	10.50	6.00	3.33
22	11.00	6.20	3.23

BLANK VALUE = 6.2 micrograms carbon
BLANK FACTOR = 6.2 / 10.99805 = +5.6E-01 ug/min Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: 2-BASELINE Date: 06/18/96 Time: 10:41:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = 2-BASELINE
Blank Value = N/A

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	2.20	86.36
3	1.51	4.70	53.19
4	2.00	10.20	53.92
5	2.50	16.30	37.42
6	3.00	20.80	21.63
7	3.50	23.70	12.24
8	4.00	25.30	6.32
9	4.50	26.30	3.80
10	5.00	26.90	2.23
11	5.50	27.60	2.54
12	6.00	28.10	1.78
13	6.50	28.70	2.09
14	7.00	29.20	1.71
15	7.50	29.70	1.68
16	8.00	30.20	1.66
17	8.50	30.50	0.98
18	9.00	30.90	1.29
19	9.50	31.20	0.96
20	10.00	31.60	1.27
21	10.50	31.90	0.94
22	11.00	32.30	1.24

BLANK VALUE = 32.3 micrograms carbon
BLANK FACTOR = 32.3 / 10.99884 = +2.94E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-STD 22N12B Date: 06/18/96 Time: 10:54:53

Sample Size = 1 uL 1ml
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	29.70	98.99
3	1.50	182.70	83.74
4	2.00	353.30	48.29
5	2.50	471.20	25.02
6	3.00	538.30	12.47
7	3.50	575.40	6.45
8	4.00	593.40	3.03
9	4.50	600.60	1.20
10	5.00	603.70	0.51
11	5.50	604.80	0.18
12	6.00	605.50	0.12
13	6.50	606.00	0.08
14	7.00	606.40	0.07
15	7.50	606.70	0.05
16	8.00	606.90	0.03
17	8.50	607.30	0.07
18	9.00	607.60	0.05
19	9.50	607.70	0.02
20	10.00	608.00	0.05
21	10.50	608.40	0.07
22	11.00	608.60	0.03

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(608.6 - 6.158325)(1)/(1) = +6.024E+02 g/L Carbon
(608.6 - 6.158325)(1)/(1)(12) = +5.020E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-STD 24N12A Date: 06/18/96 Time: 11:13:13

Sample Size = 1 uL 200ml
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	1.80	77.78
3	1.51	18.20	90.11
4	2.00	116.60	84.39
5	2.50	304.20	61.67
6	3.00	460.10	33.88
7	3.50	535.60	14.10
8	4.00	567.80	5.67
9	4.50	579.40	2.00
10	5.00	583.20	0.65
11	5.50	584.90	0.29
12	6.00	585.90	0.17
13	6.50	586.60	0.12
14	7.00	587.30	0.12
15	7.50	587.80	0.09
16	8.00	588.40	0.10
17	8.50	588.80	0.07
18	9.00	589.30	0.08
19	9.50	589.80	0.08
20	10.00	590.20	0.07
21	10.50	590.60	0.07
22	11.00	591.00	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99384 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(591 - 32.33121)(1)/(1) = +5.587E+02 g/L Carbon
(591 - 32.33121)(1)/(1)(12) = +4.656E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-OP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

Sample: 2-BLANK Date: 06/18/96 Time: 11:25:46

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	2.20	72.73
3	1.50	3.00	26.67
4	2.00	3.50	14.29
5	2.50	3.90	10.26
6	3.00	4.30	9.30
7	3.50	4.50	4.44
8	4.00	4.80	6.25
9	4.50	5.20	7.69
10	5.00	5.30	1.89
11	5.50	5.60	5.36
12	6.00	5.80	3.45
13	6.50	6.10	4.92
14	7.00	6.30	3.17
15	7.50	6.60	4.55
16	8.00	6.80	2.94
17	8.50	7.00	2.86
18	9.00	7.30	4.11
19	9.50	7.50	2.67
20	10.00	7.70	2.60
21	10.50	7.90	2.53
22	11.00	8.10	2.47

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(8.1 - 6.15935)(1)/(1) = +1.9E+00 g/L Carbon
(8.1 - 6.15935)(1)/(1)(12) = +1.6E-01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-BLANK Date: 06/18/96 Time: 11:38:53

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	1.70	100.00
3	1.50	5.70	70.18
4	2.00	12.20	53.28
5	2.50	17.30	29.48
6	3.00	20.20	14.36
7	3.50	21.70	6.91
8	4.00	22.70	4.41
9	4.50	23.10	1.73
10	5.00	23.70	2.53
11	5.50	24.20	2.07
12	6.00	24.70	2.02
13	6.50	25.10	1.59
14	7.00	25.60	1.95
15	7.50	26.10	1.92
16	8.00	26.60	1.88
17	8.50	26.90	1.12
18	9.00	27.30	1.47
19	9.50	27.70	1.44
20	10.00	28.10	1.42
21	10.50	28.30	0.71
22	11.00	28.80	1.74

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(28.8 - 32.33354)(1)/(1) = < 5.00 E-3 g/L Carbon
(28.8 - 32.33354)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-S96T003291 Date: 06/18/96 Time: 11:53:16

Sample Size = 1 uL .3780g
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.10	0.00
2	1.01	29.70	99.66
3	1.51	193.70	84.67
4	2.00	382.50	49.36
5	2.50	510.40	25.06
6	3.00	584.80	12.72
7	3.50	629.20	7.06
8	4.00	654.70	3.89
9	4.50	668.80	2.11
10	5.00	678.90	1.49
11	5.50	687.10	1.19
12	6.00	693.10	0.87
13	6.50	697.50	0.63
14	7.00	701.10	0.51
15	7.50	703.90	0.40
16	8.00	706.60	0.38
17	8.50	709.30	0.38
18	9.00	711.70	0.34
19	9.50	713.50	0.25
20	10.00	715.20	0.24
21	10.50	716.90	0.24
22	11.00	718.40	0.21

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(718.4 - 6.158804)(1)/(1) = +7.122E+02 g/L Carbon
(718.4 - 6.158804)(1)/(1)(12) = +5.935E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 16

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-S96T003291 Date: 06/18/96 Time: 12:06:46

Sample Size = 1 uL .3780g
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.40	0.00
2	1.01	4.30	67.44
3	1.51	31.80	86.48
4	2.00	97.10	67.25
5	2.50	171.00	43.22
6	3.00	242.10	29.37
7	3.50	288.50	16.08
8	4.00	313.70	8.03
9	4.50	325.60	3.65
10	5.00	331.10	1.66
11	5.50	334.40	0.99
12	6.00	336.60	0.65
13	6.50	338.30	0.50
14	7.00	339.50	0.35
15	7.50	340.70	0.35
16	8.00	341.70	0.29
17	8.50	342.60	0.26
18	9.00	343.60	0.29
19	9.50	344.40	0.23
20	10.00	345.20	0.23
21	10.50	345.90	0.20
22	11.00	346.70	0.23

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(346.7 - 32.33408)(1)/(1) = +3.144E+02 g/L Carbon
(346.7 - 32.33408)(1)/(1)(12) = +2.620E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3291 DUP Date: 06/18/96 Time: 12:18:58

Sample Size = 1 uL .3676g
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	18.20	95.60
3	1.51	125.60	85.51
4	2.01	260.50	51.79
5	2.51	377.90	31.07
6	3.01	466.80	19.04
7	3.50	525.10	11.10
8	4.00	560.80	6.37
9	4.50	579.90	3.29
10	5.00	590.60	1.81
11	5.50	597.80	1.20
12	6.00	603.00	0.86
13	6.50	607.60	0.76
14	7.00	611.70	0.67
15	7.50	615.20	0.57
16	8.00	618.50	0.53
17	8.50	621.50	0.48
18	9.00	624.40	0.46
19	9.50	627.00	0.41
20	10.00	629.60	0.41
21	10.50	631.90	0.36
22	11.00	634.20	0.36

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(634.2 - 6.159829)(1)/(1) = +6.280E+02 g/L Carbon
(634.2 - 6.159829)(1)/(1)(12) = +5.234E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3291 DUP Date: 06/18/96 Time: 12:31:19

Sample Size = 1 uL .367g
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.30	0.00
2	1.01	10.50	78.10
3	1.50	62.70	83.25
4	2.00	144.20	56.52
5	2.50	239.50	39.79
6	3.00	306.00	21.73
7	3.50	343.30	10.87
8	4.00	361.10	4.93
9	4.50	369.20	2.19
10	5.00	373.10	1.05
11	5.50	376.20	0.82
12	6.00	378.30	0.56
13	6.50	380.00	0.45
14	7.00	381.70	0.45
15	7.50	383.40	0.44
16	8.00	384.60	0.31
17	8.50	385.90	0.34
18	9.00	387.30	0.36
19	9.50	388.60	0.33
20	10.00	389.60	0.26
21	10.50	390.70	0.28
22	11.00	391.70	0.26

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(391.7 - 32.33892)(1)/(1) = +3.594E+02 g/L Carbon
(391.7 - 32.33892)(1)/(1)(12) = +2.995E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3291 SPIKE Date: 06/18/96 Time: 12:44:21

Sample Size = 1 uL .4047 +
Dil Factor = 1 .500ml 22N12B
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	3.90	0.00
2	1.01	140.30	97.22
3	1.51	386.40	63.69
4	2.00	611.00	36.76
5	2.50	769.70	20.62
6	3.00	870.30	11.56
7	3.50	934.10	6.83
8	4.00	973.50	4.05
9	4.50	997.10	2.37
10	5.00	1010.80	1.36
11	5.50	1020.60	0.96
12	6.00	1028.90	0.81
13	6.50	1035.90	0.68
14	7.00	1042.20	0.60
15	7.50	1047.90	0.54
16	8.00	1053.10	0.49
17	8.50	1058.20	0.48
18	9.00	1063.10	0.46
19	9.50	1067.40	0.40
20	10.00	1071.60	0.39
21	10.50	1075.30	0.34
22	11.00	1079.10	0.35

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99834 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(1079.1 - 6.157778)(1)/(1) = +1.0729E+03 g/L Carbon
(1079.1 - 6.157778)(1)/(1)(12) = +8.9412E+01 Molar Carbon

Sample Run By: Jerome Steele 6/18/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3291 SPIKE Date: 06/18/96 Time: 12:57:38

Sample Size = 1 uL , 40479 + 100ml 24N12A
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	3.90	0.00
2	1.01	12.80	69.53
3	1.50	62.10	79.39
4	2.00	157.90	60.67
5	2.50	331.90	52.43
6	3.00	527.50	37.08
7	3.50	629.80	16.24
8	4.00	682.70	7.75
9	4.50	710.00	3.85
10	5.00	722.80	1.77
11	5.50	729.60	0.93
12	6.00	733.80	0.57
13	6.50	737.20	0.46
14	7.00	740.10	0.39
15	7.50	742.70	0.35
16	8.00	745.00	0.31
17	8.50	747.30	0.31
18	9.00	749.30	0.27
19	9.50	751.10	0.24
20	10.00	753.10	0.27
21	10.50	754.70	0.21
22	11.00	756.50	0.24

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(756.5 - 32.33659)(1)/(1) = +7.242E+02 g/L Carbon
(756.5 - 32.33659)(1)/(1)(12) = +6.035E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jacque Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-S96T003292 Date: 06/18/96 Time: 13:12:39

Sample Size = 1 uL .1294g
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	4.60	65.22
3	1.50	16.30	71.78
4	2.01	40.70	59.95
5	2.51	69.40	41.35
6	3.01	95.20	27.10
7	3.50	115.80	17.79
8	4.00	131.40	11.87
9	4.50	145.90	9.94
10	5.00	158.50	7.95
11	5.50	171.00	7.31
12	6.00	182.30	6.20
13	6.50	192.30	5.20
14	7.00	201.70	4.66
15	7.50	210.20	4.04
16	8.00	219.10	4.06
17	8.50	227.80	3.82
18	9.00	235.90	3.43
19	9.50	245.80	4.03
20	10.00	253.70	3.11
21	10.50	262.50	3.35
22	11.00	270.40	2.92

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(270.4 - 6.158804)(1)/(1) = +2.642E+02 g/L Carbon
(270.4 - 6.158804)(1)/(1)(12) = +2.202E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-S96T003292 Date: 06/18/96 Time: 13:25:10

Sample Size = 1 uL 6/18/96
Dil Factor = 1 12948
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.60	0.00
2	1.01	7.70	66.23
3	1.51	27.80	72.30
4	2.00	68.90	59.65
5	2.50	121.10	43.10
6	3.00	166.80	27.40
7	3.50	195.50	14.68
8	4.00	209.40	6.64
9	4.50	216.40	3.23
10	5.00	220.50	1.86
11	5.50	223.50	1.34
12	6.00	225.60	0.93
13	6.50	227.70	0.92
14	7.00	229.50	0.78
15	7.50	231.30	0.78
16	8.00	233.20	0.81
17	8.50	234.60	0.60
18	9.00	236.00	0.59
19	9.50	237.50	0.63
20	10.00	238.90	0.59
21	10.50	240.40	0.62
22	11.00	241.60	0.50

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(241.6 - 32.33426)(1)/(1) = +2.093E+02 g/L Carbon
(241.6 - 32.33426)(1)/(1)(12) = +1.744E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3292 DUP Date: 06/18/96 Time: 13:37:44

Sample Size = 1 uL .1011 g
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.50	0.00
2	1.01	15.00	90.00
3	1.51	38.20	60.73
4	2.00	63.90	40.22
5	2.50	84.50	24.38
6	3.00	99.20	14.82
7	3.50	108.80	8.82
8	4.00	115.40	5.72
9	4.50	122.00	5.41
10	5.00	128.20	4.84
11	5.50	134.70	4.83
12	6.00	140.90	4.40
13	6.50	147.90	4.73
14	7.00	155.00	4.58
15	7.50	160.50	3.43
16	8.00	166.40	3.55
17	8.50	171.70	3.09
18	9.00	177.70	3.38
19	9.50	182.80	2.79
20	10.00	187.40	2.45
21	10.50	191.70	2.24
22	11.00	195.50	1.94

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(195.5 - 6.158872)(1)/(1) = +1.893E+02 g/L Carbon
(195.5 - 6.158872)(1)/(1)(12) = +1.578E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3292 DUP Date: 06/18/96 Time: 13:50:48

Sample Size = 1 uL .1011g
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	4.30	0.00
2	1.00	18.60	76.88
3	1.50	61.30	69.66
4	2.00	117.60	47.87
5	2.50	171.40	31.39
6	3.00	205.90	16.76
7	3.50	223.30	7.79
8	4.00	231.40	3.50
9	4.50	235.50	1.74
10	5.00	238.70	1.34
11	5.50	241.00	0.95
12	6.00	242.90	0.78
13	6.50	244.90	0.82
14	7.00	246.70	0.73
15	7.50	248.40	0.68
16	8.00	249.90	0.60
17	8.50	251.30	0.56
18	9.00	252.90	0.63
19	9.50	254.10	0.47
20	10.00	255.40	0.51
21	10.50	256.80	0.55
22	11.00	257.90	0.43

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99384 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(257.9 - 32.33354)(1)/(1) = +2.256E+02 g/L Carbon
(257.9 - 32.33354)(1)/(1)(12) = +1.880E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3292 TRIP Date: 06/18/96 Time: 14:52:53

Sample Size = 1 uL .1145g
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	1.60	0.00
2	1.01	5.00	68.00
3	1.51	22.50	77.78
4	2.00	56.20	59.96
5	2.50	95.50	41.15
6	3.00	130.80	26.99
7	3.50	156.50	16.42
8	4.00	173.20	9.64
9	4.50	184.50	6.12
10	5.00	193.20	4.50
11	5.50	199.20	3.01
12	6.00	204.90	2.78
13	6.50	209.80	2.34
14	7.00	213.90	1.92
15	7.50	217.90	1.84
16	8.00	221.10	1.45
17	8.50	224.30	1.43
18	9.00	226.90	1.15
19	9.50	230.00	1.35
20	10.00	232.90	1.25
21	10.50	235.80	1.23
22	11.00	238.40	1.09

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(238.4 - 6.158804)(1)/(1) = +2.322E+02 g/L Carbon
(238.4 - 6.158804)(1)/(1)(12) = +1.935E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 16

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2- 3292 TRIP Date: 06/18/96 Time: 15:05:00

Sample Size = 1 uL .1145g
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.80	0.00
2	1.01	20.60	86.41
3	1.51	59.00	65.08
4	2.00	106.40	44.55
5	2.50	152.20	30.09
6	3.00	184.20	17.37
7	3.50	202.90	9.22
8	4.00	211.90	4.25
9	4.50	217.00	2.35
10	5.00	220.10	1.41
11	5.50	222.90	1.26
12	6.00	224.80	0.85
13	6.50	226.50	0.75
14	7.00	228.00	0.66
15	7.50	229.40	0.61
16	8.00	230.90	0.65
17	8.50	232.20	0.56
18	9.00	233.40	0.51
19	9.50	234.60	0.51
20	10.00	235.70	0.47
21	10.50	236.90	0.51
22	11.00	238.10	0.50

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(238.1 - 32.33659)(1)/(1) = +2.058E+02 g/L Carbon
(238.1 - 32.33659)(1)/(1)(12) = +1.715E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jacque Steele 6/18/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-S96T003293 Date: 06/18/96 Time: 14:03:33

Sample Size = 1 uL .26728
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	1.10	0.00
2	1.01	6.70	83.58
3	1.50	40.20	83.33
4	2.00	121.80	67.00
5	2.50	242.40	49.75
6	3.00	371.70	34.79
7	3.50	470.40	20.98
8	4.00	531.60	11.51
9	4.50	568.80	6.54
10	5.00	588.60	3.36
11	5.50	598.60	1.67
12	6.00	605.30	1.11
13	6.50	610.40	0.84
14	7.00	614.90	0.73
15	7.50	618.60	0.60
16	8.00	622.20	0.58
17	8.50	624.90	0.43
18	9.00	627.90	0.48
19	9.50	630.50	0.41
20	10.00	632.70	0.35
21	10.50	634.90	0.35
22	11.00	636.90	0.31

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(636.9 - 6.158325)(1)/(1) = +6.307E+02 g/L Carbon
(636.9 - 6.158325)(1)/(1)(12) = +5.256E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-S96T003293 Date: 06/18/96 Time: 14:16:10

Sample Size = 1 uL .2672g
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.50	0.00
2	1.00	6.80	63.24
3	1.50	16.00	57.50
4	2.00	28.70	44.25
5	2.50	48.00	40.21
6	3.00	66.70	28.04
7	3.50	77.80	14.27
8	4.00	84.80	8.25
9	4.50	89.30	5.04
10	5.00	92.50	3.46
11	5.50	95.10	2.73
12	6.00	97.50	2.46
13	6.50	99.60	2.11
14	7.00	101.50	1.87
15	7.50	103.40	1.84
16	8.00	105.00	1.52
17	8.50	106.50	1.41
18	9.00	108.10	1.48
19	9.50	109.50	1.28
20	10.00	111.20	1.53
21	10.50	112.30	0.98
22	11.00	113.70	1.23

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(113.7 - 32.32816)(1)/(1) = +8.137E+01 g/L Carbon
(113.7 - 32.32816)(1)/(1)(12) = +6.781E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-3293 DUP Date: 06/18/96 Time: 14:28:28

Sample Size = 1 uL , 37438
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	13.00	90.00
3	1.50	73.00	82.19
4	2.00	194.90	62.54
5	2.50	369.90	47.31
6	3.00	542.00	31.75
7	3.50	664.90	18.48
8	4.00	740.80	10.25
9	4.50	788.40	6.04
10	5.00	816.60	3.45
11	5.50	832.70	1.93
12	6.00	842.70	1.19
13	6.50	850.30	0.89
14	7.00	856.50	0.72
15	7.50	861.30	0.56
16	8.00	865.90	0.53
17	8.50	870.00	0.47
18	9.00	873.70	0.42
19	9.50	877.20	0.40
20	10.00	880.30	0.35
21	10.50	883.20	0.33
22	11.00	886.10	0.33

USER INPUT BLANK VALUE
BLANK VALUE = 6.15935 micrograms carbon
BLANK FACTOR = 6.15935 / 10.99884 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(886.1 - 6.158325)(1)/(1) = +8.799E+02 g/L Carbon
(886.1 - 6.158325)(1)/(1)(12) = +7.333E+01 Molar Carbon

Sample Run By: Jackie Steele 6/18/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 2-3293 DUP Date: 06/18/96 Time: 14:40:36

Sample Size = 1 uL ,3743g
Dil Factor = 1
Blank ID # =
Blank Value = 2.94 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	3.10	0.00
2	1.01	9.90	68.69
3	1.51	28.10	64.77
4	2.01	47.30	40.59
5	2.51	71.40	33.75
6	3.00	97.30	26.62
7	3.50	115.10	15.46
8	4.00	125.60	8.36
9	4.50	132.20	4.99
10	5.00	137.00	3.50
11	5.50	140.70	2.63
12	6.00	143.80	2.16
13	6.50	146.70	1.98
14	7.00	149.30	1.74
15	7.50	151.70	1.58
16	8.00	153.90	1.43
17	8.50	156.00	1.35
18	9.00	157.90	1.20
19	9.50	159.90	1.25
20	10.00	161.70	1.11
21	10.50	163.20	0.92
22	11.00	164.70	0.91

USER INPUT BLANK VALUE
BLANK VALUE = 32.33659 micrograms carbon
BLANK FACTOR = 32.33659 / 10.99884 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(164.7 - 32.33659)(1)/(1) = +1.324E+02 g/L Carbon
(164.7 - 32.33659)(1)/(1)(12) = +1.103E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By: Jacque Steele 6/18/96
JL STEELE 00000

LABCORE Data Entry Template for Worklist# 9955

Analyst: JdS **Instrument:** CARB2 _____ **Book#** 22N 12B 24N12A

Method: LA-342-100 **Rev/Mod** D0

Worklist Comment: S-107 RTS!

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S96T003268	0		@TICTOC1	SOLID	95000141	S-107
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S96T003268	0		@TICTOC1	SOLID		
5	SPK	S96T003268	0		@TICTOC1	SOLID		

Final page for worklist # 9955

6-18-96

Analyst Signature **Date** **Analyst Signature** **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Completed Worklist Report for Worklist# 9955

Analyst: jds **Instrument:** CARB2 **Book#** _____

Method: LA-342-100 Rev/Mod D-0

Worklist Comment: S-107 RTS!

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	SOLID	1	4.40E+0	4.400	ug/g
1	BLNK			0	@TICTOC1 TOC-02	SOLID	1	1.30E+0	1.300	ug/g
2	STD			0	@TICTOC1 TIC-02	SOLID	6.02E+02	5.97E+2	99.169	% Recovery
2	STD			0	@TICTOC1 TOC-02	SOLID	1.00E+03	2.67E+3	89.000	% Recovery
3	SAMPLE	S96T003268		0	@TICTOC1 TIC-02	SOLID	N/A	2.18E+03	5.000	ug/g
3	SAMPLE	S96T003268		0	@TICTOC1 TOC-02	SOLID	N/A	1.62E+03	40.000	ug/g
4	DUP	S96T[illegible]268		0	@TICTOC1 TIC-02	SOLID	2.18E+3	1.91E+3	13.203	RPD
4	DUP	S96T003268		0	@TICTOC1 TOC-02	SOLID	1.62E+3	1.43E+3	12.459	RPD
5	SPK	S96T[illegible]268		0	@TICTOC1 TIC-02	SOLID	[illegible].00E+02	8.98E+01	89.800	% Recovery
5	SPK	S96T0[illegible]268		0	@TICTOC1 TOC-02	SOLID	[illegible].00E+02	8.98E+01	89.800	% Recovery

Final page for worklist# 9955

6-18-96

Analyst Signature **Date** **Analyst Signature** **Date**

6/19/96

Reviewer Signature **Date**

Units shown for [illegible] BLK/BKG) may not reflect the actual units. 2171

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (D-0) **SOLIDS**

			TIC	TOC
	Sample Size in g	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
	µg of Carbon in Sample	(C1)	5	35.8
9955	µg of Carbon from Baseline	(C2)	9.4	34.5

@TICTOC1	
SOLID	
96006153	
0	µg of Carbon = |C1-C2|
N/A	
BLNK	
CARB2	
RTS	
RWS	
JDS	
06/18/96	
06/18/96	

		TIC	TOC
Analysis Time	Method Detection Limit in ug/g	5	40
Sample Point	µg of Carbon	4.40E+00	1.30E+00
S-1[illegible]7			

Data Entered By:	RTS	Date:	06/18/96
Signature of Chemist:		Date:	

BLANK.WB1 REV 342100ML

RW Schroeder 6/19/96

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WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (D-0) **LIQUIDS**

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	0.2000
STD	Dilution Factor	(DF)	1	1
Work List	Final Coulometer Reading in µg	(C1)	606.5	568.3
9955	µg of Carbon from Baseline	(C2)	9.4	34.5
Test Code	Standard Book Number		22N12B	24N12A
@TICTOC1	Standard Value (µg/ml)		602	3000

Matrix
LIQUID

Batch Number
96006153

Rerun
0

Sample Prep
N/A

Sample #
STD

Instrument Code
CAR

Prepared By
RT

Chem
RWS

Analyst
JD

Date Co[illegible]ete
06/1[illegible]

Analys[illegible]te
06/1[illegible]

QC Actual in µg/mL = Standard Value (µg/mL)
QC Found in µg/mL = (C1 - C2) * DF / SS
QC Found in µg/mL for TIC = 5 if C1 < C2
QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

		TIC	TOC
Analyst	Method Detection Limit in µg/mL	5	40
	QC Actual in µg/mL	6.02E+02	3.00E+03
Sampl[illegible]	QC Found in µg/mL	5.97E+02	2.67E+03
S-	Percent Standard Recovery	99.2	89.0

Data Enter[illegible]	RTS	Date:	06/18/96
Signature [illegible]		Date:	

STANDARD.W[illegible] 342100ML

RdWSchroeder 6/19/96

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WORKBOOK : SAM3

TIC/TOC : -342-100 (D-0) SOLIDS

			TIC	TOC
Sample Size in g	(SS)		0.1135	0.1135
Dilution Factor	(DF)		1	1
µg of Carbon in Sample	(C1)		256.3	218.2
µg of Carbon from Baseline	(C2)		9.4	34.5

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	2.18E+03	1.62E+03

Data Entry: RTS Date: 06/18/96
Signature: Date:
SAMPLE.W 342100ML

RW Schroeder 6/19/96

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WORKBOO
TIC/TO

DUP4
2-100 (D-0) SOLIDS

		TIC	TOC
Sample Size in g	(SS)	0.1005	0.1005
Dilution Factor	(DF)	1	1
µg of Carbon in Sample	(C1)	201	178.5
µg of Carbon from Baseline	(C2)	9.4	34.5
Known µg of C from Original Sample		2.18E+3	1.62E+3

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.91E+03	1.43E+03

T
D
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Samp
S

Data Entered	RTS	Date:	06/18/96
Signature of		Date:	

SAMPLE.WB1 REV
342100ML

RW Schroeder 6/19/96

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WORKBOOK F SPIKE5

TIC/TOC 2-100 (D-0) SOLIDS

Typ	Sample Vial Data		TIC	TOC
SPK	Sample Size in g	(SS)	0.1135	0.1135
Work	Final Coulometer Reading in µg	(C1)	256.3	218.2
9955	Spiked Vial Data			
Test C	Sample Size in g	(SPK SS)	0.1432	0.1432
@TICTC	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
Matri	Final Coulometer Reading in µg	(C3)	560.4	516.7
SOLID	Spike Book Number		22N12B	24N12A
Batch Nu	Spike Standard Value in µg/ml		602	3000
96006	Spike Concentration in µg	(SPK CONC)	301	300

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Spike Concentration in µg = (Spike Std. Value in µg/mL)*(SPK VOL)

ercent Spike Recovery = (C3) / [(C1/SS * SPK SS) + (SPK CONC)] * 100

C Actual in µg/mL = Spike Value (µg/mL)
C Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100

	TIC	TOC
C Actual in µg/mL	6.02E+02	3.00E+03
Samp C Found in µg/mL	5.40E+02	2.69E+03
S- ercent Spike Recovery	89.8	89.8

Data Ente	RTS	Date:	06/18/96
Signature		Date:	

SPIKE.WB1 RE 342100ML

RW Schmoeckh 6/19/96

BEST AVAILABLE COPY

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TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASE Date: 06/17/96 Time: 20:16:25

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE
Blank Value = N/A

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	0.90	22.22
3	1.51	1.90	52.63
4	2.01	1.90	0.00
5	2.51	3.10	38.71
6	3.01	3.10	0.00
7	3.51	3.40	8.82
8	4.01	3.80	10.53
9	4.51	4.30	11.63
10	5.00	4.90	12.24
11	5.50	4.90	0.00
12	6.00	5.60	12.50
13	6.50	6.10	8.20
14	7.00	6.20	1.61
15	7.50	6.70	7.46
16	8.00	7.10	5.63
17	8.50	8.00	11.25
18	9.00	8.00	0.00
19	9.50	8.20	2.44
20	10.00	8.70	5.75
21	10.50	9.40	7.45
22	11.00	9.40	0.00

BLANK VALUE = 9.4 micrograms carbon
BLANK FACTOR = 9.4 / 11.00269 = +8.5E-01 ug/min Carbon

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 2477 TO 2488

Sample Run By: Robert W Schroeder for JD Spellman 7/24/96
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASELINE Date: 06/17/96 Time: 21:01:38

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	2.50	68.00
3	1.51	7.10	64.79
4	2.00	14.40	50.69
5	2.50	22.30	35.43
6	3.00	26.90	17.10
7	3.50	29.00	7.24
8	4.00	29.90	3.01
9	4.50	30.40	1.64
10	5.00	31.00	1.94
11	5.50	31.30	0.96
12	6.00	31.60	0.95
13	6.50	31.90	0.94
14	7.00	32.20	0.93
15	7.50	32.50	0.92
16	8.00	32.80	0.91
17	8.50	33.10	0.91
18	9.00	33.50	1.19
19	9.50	33.70	0.59
20	10.00	34.00	0.88
21	10.50	34.30	0.87
22	11.00	34.50	0.58

BLANK VALUE = 34.5 micrograms carbon
BLANK FACTOR = 34.5 / 10.9989 = +3.14E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
JD SPELLMAN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 22N12B Date: 06/17/96 Time: 22:54:24

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .85 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.50	0.00
2	1.01	33.90	95.58
3	1.51	185.50	81.73
4	2.01	345.40	46.29
5	2.51	465.30	25.77
6	3.01	538.80	13.64
7	3.50	577.80	6.75
8	4.00	594.30	2.78
9	4.50	600.10	0.97
10	5.00	602.20	0.35
11	5.50	603.20	0.17
12	6.00	603.70	0.08
13	6.50	604.10	0.07
14	7.00	604.50	0.07
15	7.50	604.70	0.03
16	8.00	605.00	0.05
17	8.50	605.20	0.03
18	9.00	605.50	0.05
19	9.50	605.70	0.03
20	10.00	605.90	0.03
21	10.50	606.20	0.05
22	11.00	606.50	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 9.349067 micrograms carbon
BLANK FACTOR = 9.349067 / 10.9989 = +8.5E-01 ug/min Carbon

SAMPLE RESULTS:
(606.5 - 9.348963)(1)/(1) = +5.972E+02 g/L Carbon
(606.5 - 9.348963)(1)/(1)(12) = +4.976E+01 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 24N12A Date: 06/17/96 Time: 23:10:22

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.14 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	6.30	0.00
2	1.01	101.90	93.82
3	1.50	335.20	69.60
4	2.00	481.90	30.44
5	2.50	533.60	9.69
6	3.00	548.20	2.66
7	3.50	553.20	0.90
8	4.01	555.00	0.32
9	4.50	556.20	0.22
10	5.00	556.90	0.13
11	5.50	557.00	0.02
12	6.00	557.00	0.00
13	6.50	557.30	0.05
14	7.00	559.70	0.43
15	7.50	560.80	0.20
16	8.00	562.50	0.30
17	8.50	563.60	0.20
18	9.00	564.60	0.18
19	9.50	565.50	0.16
20	10.00	566.50	0.18
21	10.50	567.40	0.16
22	11.00	568.30	0.16

USER INPUT BLANK VALUE
BLANK VALUE = 34.53655 micrograms carbon
BLANK FACTOR = 34.53655 / 10.9989 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:
(568.3 - 34.5446)(1)/(1) = +5.338E+02 g/L Carbon
(568.3 - 34.5446)(1)/(1)(12) = +4.448E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
JD SPELLMAN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 06/17/96 Time: 23:32:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .85 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.40	50.00
3	1.50	0.60	33.33
4	2.00	0.90	33.33
5	2.50	1.10	18.18
6	3.00	1.40	21.43
7	3.50	1.60	12.50
8	4.00	1.80	11.11
9	4.50	2.00	10.00
10	5.00	2.30	13.04
11	5.50	2.50	8.00
12	6.00	2.80	10.71
13	6.50	3.00	6.67
14	7.00	3.20	6.25
15	7.50	3.50	8.57
16	8.00	3.70	5.41
17	8.50	3.90	5.13
18	9.00	4.10	4.88
19	9.50	4.30	4.65
20	10.00	4.50	4.44
21	10.50	4.70	4.26
22	11.00	5.00	6.00

USER INPUT BLANK VALUE
BLANK VALUE = 9.349067 micrograms carbon
BLANK FACTOR = 9.349067 / 10.9989 = +8.5E-01 ug/min Carbon

SAMPLE RESULTS:
(5 - 9.351349)(1)/(1) = < 5.00 E-3 g/L Carbon
(5 - 9.351349)(1)/(1)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLK Date: 06/17/96 Time: 23:47:00

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.14 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	3.90	74.36
3	1.50	13.40	70.90
4	2.00	24.00	44.17
5	2.50	27.50	12.73
6	3.00	29.20	5.82
7	3.50	30.40	3.95
8	4.00	31.30	2.88
9	4.50	31.90	1.88
10	5.00	32.30	1.24
11	5.50	32.60	0.92
12	6.00	32.80	0.61
13	6.50	33.10	0.91
14	7.00	33.30	0.60
15	7.50	33.70	1.19
16	8.00	34.00	0.88
17	8.50	34.30	0.87
18	9.00	34.70	1.15
19	9.50	35.00	0.86
20	10.00	35.20	0.57
21	10.50	35.50	0.85
22	11.00	35.80	0.84

USER INPUT BLANK VALUE
BLANK VALUE = 34.53655 micrograms carbon
BLANK FACTOR = 34.53655 / 10.9989 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:
(35.8 - 34.53617)(1)/(1) = +1.26E+00 g/L Carbon
(35.8 - 34.53617)(1)/(1)(12) = +1.05E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
JD SPELLMAN 00000

WHC-SD-WM-DP-156, REV. 16

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003268 Date: 06/18/96 Time: 02:13:31

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .85 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	29.40	0.00
2	1.01	44.00	33.18
3	1.50	83.40	47.24
4	2.00	136.50	38.90
5	2.50	183.00	25.41
6	3.00	211.00	13.27
7	3.50	225.20	6.31
8	4.00	232.30	3.06
9	4.50	236.30	1.69
10	5.00	239.20	1.21
11	5.50	241.50	0.95
12	6.00	243.40	0.78
13	6.50	245.10	0.69
14	7.00	246.60	0.61
15	7.50	248.00	0.56
16	8.00	249.40	0.56
17	8.50	250.80	0.56
18	9.00	252.10	0.52
19	9.50	253.20	0.43
20	10.00	254.40	0.47
21	10.50	255.40	0.39
22	11.00	256.30	0.35

USER INPUT BLANK VALUE
BLANK VALUE = 9.349067 micrograms carbon
BLANK FACTOR = 9.349067 / 10.9989 = +8.5E-01 ug/min Carbon

SAMPLE RESULTS:
(256.3 - 9.349014)(1)/(1) = +2.470E+02 g/L Carbon
(256.3 - 9.349014)(1)/(1)(12) = +2.058E+01 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003268 Date: 06/18/96 Time: 02:26:29

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.14 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	14.40	0.00
2	1.01	52.50	72.57
3	1.50	110.50	52.49
4	2.00	157.90	30.02
5	2.50	181.30	12.91
6	3.00	191.50	5.33
7	3.50	197.30	2.94
8	4.00	201.40	2.04
9	4.50	204.30	1.42
10	5.00	206.70	1.16
11	5.50	208.70	0.96
12	6.00	210.10	0.67
13	6.50	211.40	0.61
14	7.00	212.50	0.52
15	7.50	213.60	0.51
16	8.00	214.50	0.42
17	8.50	215.10	0.28
18	9.00	215.90	0.37
19	9.50	216.40	0.23
20	10.00	217.10	0.32
21	10.50	217.60	0.23
22	11.00	218.20	0.27

USER INPUT BLANK VALUE
BLANK VALUE = 34.53655 micrograms carbon
BLANK FACTOR = 34.53655 / 10.9989 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:
(218.2 - 34.53631)(1)/(1) = +1.837E+02 g/L Carbon
(218.2 - 34.53631)(1)/(1)(12) = +1.531E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
JD SPELLMAN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003268DUP Date: 06/18/96 Time: 02:42:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .85 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	7.10	84.51
3	1.51	43.90	83.83
4	2.01	93.90	53.25
5	2.51	134.10	29.98
6	3.01	158.00	15.13
7	3.51	171.60	7.93
8	4.00	179.00	4.13
9	4.50	183.10	2.24
10	5.00	186.00	1.56
11	5.50	188.10	1.12
12	6.00	189.80	0.90
13	6.50	191.40	0.84
14	7.00	192.80	0.73
15	7.50	194.10	0.67
16	8.00	195.40	0.67
17	8.50	196.40	0.51
18	9.00	197.40	0.51
19	9.50	198.40	0.50
20	10.00	199.30	0.45
21	10.50	200.20	0.45
22	11.00	201.00	0.40

USER INPUT BLANK VALUE
BLANK VALUE = 9.349067 micrograms carbon
BLANK FACTOR = 9.349067 / 10.9989 = +8.5E-01 ug/min Carbon

SAMPLE RESULTS:
(201 - 9.350558)(1)/(1) = +1.916E+02 g/L Carbon
(201 - 9.350558)(1)/(1)(12) = +1.597E+01 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003268DUP Date: 06/18/96 Time: 03:00:00

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.14 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	13.80	0.00
2	1.01	38.50	64.16
3	1.50	83.30	53.78
4	2.00	124.00	32.82
5	2.50	143.40	13.53
6	3.00	152.20	5.78
7	3.50	157.40	3.30
8	4.00	160.60	1.99
9	4.50	164.00	2.07
10	5.00	166.40	1.44
11	5.50	168.30	1.13
12	6.00	169.80	0.88
13	6.50	171.20	0.82
14	7.00	172.50	0.75
15	7.50	173.70	0.69
16	8.00	174.60	0.52
17	8.50	175.40	0.46
18	9.00	176.00	0.34
19	9.50	176.70	0.40
20	10.00	177.40	0.39
21	10.50	178.00	0.34
22	11.00	178.50	0.28

USER INPUT BLANK VALUE
BLANK VALUE = 34.53655 micrograms carbon
BLANK FACTOR = 34.53655 / 10.9989 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:
(178.5 - 34.53631)(1)/(1) = +1.440E+02 g/L Carbon
(178.5 - 34.53631)(1)/(1)(12) = +1.200E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By: _____
JD SPELLMAN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTCC REV 2.0

Sample: S96T003268SPK Date: 06/18/96 Time: 04:17:18

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .85 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	1.30	0.00
2	1.01	24.70	94.74
3	1.51	127.30	80.60
4	2.00	260.90	51.21
5	2.50	376.00	30.61
6	3.00	453.50	17.09
7	3.50	499.70	9.25
8	4.00	523.50	4.55
9	4.50	534.70	2.09
10	5.00	540.60	1.09
11	5.50	544.00	0.63
12	6.00	546.70	0.49
13	6.50	548.60	0.35
14	7.00	550.50	0.35
15	7.50	552.00	0.27
16	8.00	553.50	0.27
17	8.50	555.00	0.27
18	9.00	556.10	0.20
19	9.50	557.30	0.22
20	10.00	558.40	0.20
21	10.50	559.40	0.18
22	11.00	560.40	0.18

USER INPUT BLANK VALUE
BLANK VALUE = 9.349067 micrograms carbon
BLANK FACTOR = 9.349067 / 10.9989 = +8.5E-01 ug/min Carbon

SAMPLE RESULTS:
(560.4 - 9.350571)(1)/(1) = +5.510E+02 g/L Carbon
(560.4 - 9.350571)(1)/(1)(12) = +4.592E+01 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003268SPK Date: 06/18/96 Time: 04:37:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 3.14 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	58.70	0.00
2	1.01	172.80	66.03
3	1.51	319.90	45.98
4	2.00	426.20	24.94
5	2.50	471.50	9.61
6	3.00	490.50	3.87
7	3.50	497.60	1.43
8	4.00	501.80	0.84
9	4.50	504.50	0.54
10	5.00	506.70	0.43
11	5.50	508.50	0.35
12	6.00	509.90	0.27
13	6.50	511.10	0.23
14	7.00	512.00	0.18
15	7.50	512.80	0.16
16	8.00	513.50	0.14
17	8.50	514.10	0.12
18	9.00	514.70	0.12
19	9.50	515.20	0.10
20	10.00	515.80	0.12
21	10.50	516.20	0.08
22	11.00	516.70	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 34.53655 micrograms carbon
BLANK FACTOR = 34.53655 / 10.9989 = +3.1E+00 ug/min Carbon

SAMPLE RESULTS:
(516.7 - 34.54211)(1)/(1) = +4.822E+02 g/L Carbon
(516.7 - 34.54211)(1)/(1)(12) = +4.018E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: JD SPELLMAN 00000

LABCORE Completed Worklist Report for Worklist# 10051

Analyst: pjm **Instrument:** CARB2 **Book#** _____

Method: LA-342-100 Rev/Mod D-0

Worklist Comment: S-107 TICTOC. RCJ

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	SOLID	1	2.00E-1	0.200	ug/g
1	BLNK			0	@TICTOC1 TOC-02	SOLID	1	1.90E+0	1.900	ug/g
2	STD			0	@TICTOC1 TIC-02	SOLID	6.02E+02	5.96E+2	99.003	% Recovery
2	STD			0	@TICTOC1 TOC-02	SOLID	3.00E+03	2.75E+3	91.667	% Recovery
3	SAMPLE	S96T003266		0	@TICTOC1 TIC-02	SOLID	N/A	1.34E+03	5.000	ug/g
3	SAMPLE	S96T003266		0	@TICTOC1 TOC-02	SOLID	N/A	8.60E+02	40.000	ug/g
4	DUP	S96T003266		0	@TICTOC1 TIC-02	SOLID	1.34E+3	1.36E+3	1.481	RPD
4	DUP	S96T003266		0	@TICTOC1 TOC-02	SOLID	8.60E+2	8.47E+2	1.523	RPD
5	SAMPLE	S96T003289		0	@TICTOC1 TIC-02	SOLID	N/A	1.88E+03	5.000	ug/g
5	SAMPLE	S96T003289		0	@TICTOC1 TOC-02	SOLID	N/A	4.53E+03	40.000	ug/g
6	DUP	S96T003289		0	@TICTOC1 TIC-02	SOLID	1.88E+3	1.92E+3	2.105	RPD
6	DUP	S96T003289		0	@TICTOC1 TOC-02	SOLID	4.53E+3	4.68E+3	3.257	RPD
7	SPK	S96T003289		0	@TICTOC1 TIC-02	SOLID	1.00E+02	9.68E+01	96.800	% Recovery
7	SPK	S96T003289		0	@TICTOC1 TOC-02	SOLID	1.00E+02	9.51E+01	95.100	% Recovery

Final page for worklist# 10051

[signature] 6-21-96
Analyst Signature **Date**

Analyst Signature **Date**

Robert W Schroeder 6/21/96
Reviewer Signature **Date**

Again reviewed RW Schroeder 7/24/96

Units shown for QC (BLK/BKG) may not reflect the actual units.

LABCORE Data Entry Template for Worklist# 10051

Analyst: RJM **Instrument:** CARB2 **Book#** TIC 22N12B
TOC 24N12A

Method: LA-342-100 **Rev/Mod** D-0

Worklist Comment: S-107 TICTOC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S96T003266	0		@TICTOC1	SOLID	95000141	S-107
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S96T003266	0		@TICTOC1	SOLID		
5	SAMPLE	S96T003289	0		@TICTOC1	SOLID	95000138	S-107
		Analytes Requested: TIC-02 , TOC-02						
6	DUP	S96T003289	0		@TICTOC1	SOLID		
7	SPK	S96T003289	0		@TICTOC1	SOLID		

Final page for worklist # 10051

Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 10051

Analyst: RLM **Instrument:** CARB2 **Book#** TIC 22N12B TOC 24N12A

Method: LA-342-100 **Rev/Mod** D0

Worklist Comment: S-107 TICTOC. RCJ

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S96T003266	0		@TICTOC1	SOLID	95000141	S-107
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S96T003266	0		@TICTOC1	SOLID		
5	SPK	S96T003266	0		@TICTOC1	SOLID		
6	SAMPLE	S96T003289	0		@TICTOC1	SOLID	95000138	S-107
		Analytes Requested: TIC-02 , TOC-02						
7	DUP	S96T003289	0		@TICTOC1	SOLID		

Final page for worklist # 10051

RL McCown 6/19/96
Analyst Signature **Date**

Analyst Signature **Date**

Recommended Sample Sizes:

S96T003266 (0.500g)
S96T003289 (~~0.100~~ 0.150g)
RWS
6/18/96

Data Entry Comments:
S96T003266 - insufficient sample to run spike.
Spike run on S96T003289.

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
Work List #	µg of Carbon in Sample	(C1)	4.1	24.8
10051	µg of Carbon from Baseline	(C2)	3.9	26.7

Test Code #	@TICTOC1
Matrix	SOLID
Batch Number	96006252
Rerun	0
Sample Prep	N/A
Sample #	BLNK
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	PJM
Date Complete	06/21/96
Analysis Date	06/19/96
Analysis Time	
Sample Point	S-107

µg of Carbon = |C1-C2|

		TIC	TOC
Method Detection Limit in ug/g		5	40
µg of Carbon		2.00E-01	1.90E+00

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schwerdt	Date:	6/21/96

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (D-0) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	0.2000
STD	Dilution Factor	(DF)	1	1
Work List	Final Coulometer Reading in µg	(C1)	599.6	577.1
10051	µg of Carbon from Baseline	(C2)	3.9	26.7
Test Code	Standard Book Number		22N12B	24N12A
@TICTOC1	Standard Value (µg/ml)		602	3000

Matrix	LIQUID
Batch Number	96006252
Rerun #	0
Sample Prep	N/A
Sample #	STD
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	PJM
Date Complete	06/21/96
Analysis Date	06/19/96
Analysis Time	
Sample Point	S-107

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	5.96E+02	2.75E+03
Percent Standard Recovery	99.0	91.7

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schneider	Date:	6/21/96

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.4749	0.4749
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	637.9	435.1
10051	µg of Carbon from Baseline	(C2)	3.9	26.7
Test Code				
@TICTOC1				

Matrix	SOLID
Batch Number	96006252
Rerun #	0
Sample Prep	N/A
Sample #	S96T003266
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	PJM
Date Complete	06/21/96
Analysis Date	06/19/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.34E+03	8.60E+02

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schroeder	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

2494

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.3030	0.3030
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	415	283.4
10051	µg of Carbon from Baseline	(C2)	3.9	26.7
Test Code	Known µg of C from Origina Sample		1.34E+3	8.60E+2
@TICTOC1				

Matrix	SOLID
Batch Number	96006252
Rerun	0
Sample Prep	N/A
Sample #	S96T003266
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	PJM
Date Complete	06/21/96
Analysis Date	06/19/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.36E+03	8.47E+02

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	Ron Schwabe	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM5

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1243	0.1243
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	237.9	589.2
10051	µg of Carbon from Baseline	(C2)	3.9	26.7
Test Code				
@TICTOC1				

Matrix	SOLID
Batch Number	96006252
Rerun	0
Sample Prep	N/A
Sample #	S96T003289
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	PJM
Date Complete	06/21/96
Analysis Date	06/19/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.88E+03	4.53E+03

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schroeder	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

2496

WORKBOOK PAGE: DUP6

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1528	0.1528
DUP	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	297.4	741.7
10051	µg of Carbon from Baseline	(C2)	3.9	26.7
Test Code	Known µg of C from Origina Sample		1.88E+3	4.53E+3
@TICTOC1				

Matrix	SOLID
Batch Number	96006252
Rerun	0
Sample Prep	N/A
*Sample #	S96T003289
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	PJM
Date Complete	06/21/96
Analysis Date	06/19/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.92E+03	4.68E+03

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schwab	Date:	6/21/96

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SPIKE7

TIC/TOC : LA-342-100 (D-0) SOLIDS

Type	Sample Vial Data		TIC	TOC
SPK	Sample Size in g	(SS)	0.1243	0.1243
Work List	Final Coulometer Reading in µg	(C1)	237.9	589.2
10051	Spiked Vial Data			
Test Code	Sample Size in g	(SPK SS)	0.1483	0.1483
@TICTOC1	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
Matrix	Final Coulometer Reading in µg	(C3)	566.1	954.2
SOLID	Spike Book Number		22N12B	24N12A
Batch Number	Spike Standard Value in µg/ml		602	3000
96006252	Spike Concentration in µg	(SPK CONC)	301	300

Rerun	
0	
Sample Prep	Spike Concentration in µg = (Spike Std. Value in µg/mL)*(SPK VOL)
N/A	
Sample #	Percent Spike Recovery = (C3) / [(C1/SS * SPK SS) + (SPK CONC)] * 100
S96T003289	
Instrument Code	QC Actual in µg/mL = Spike Value (µg/mL)
CARB2	QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100
Prepared By	
RTS	
Chemist	
RWS	
Analyst	
PJM	
Date Complete	
06/21/96	
Analysis Date	
06/19/96	
Analysis Time	

		TIC	TOC
	QC Actual in µg/mL	6.02E+02	3.00E+03
Sample Point	QC Found in µg/mL	5.83E+02	2.85E+03
S-107	Percent Spike Recovery	96.8	95.1

Data Entered By:	RTS	Date:	06/21/96
Signature of Chemist:	RW Schroeder	Date:	6/21/96

SPIKE.WB1 REV 1.0 342100ML

2493

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASELINE Date: 06/19/96 Time: 21:26:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.40	50.00
3	1.50	0.70	42.86
4	2.00	1.00	30.00
5	2.50	1.40	28.57
6	3.00	1.60	12.50
7	3.50	1.80	11.11
8	4.00	2.00	10.00
9	4.50	2.20	9.09
10	5.00	2.30	4.35
11	5.50	2.40	4.17
12	6.00	2.50	4.00
13	6.50	2.70	7.41
14	7.00	2.80	3.57
15	7.50	2.90	3.45
16	8.00	3.10	6.45
17	8.50	3.20	3.13
18	9.00	3.40	5.88
19	9.50	3.50	2.86
20	10.00	3.60	2.78
21	10.50	3.80	5.26
22	11.00	3.90	2.56

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 10.99878 = +3.5E-01 ug/min Carbon

Sample Run By: PJ MCCOWN 6/19/96 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>>

Sample: BASELINE Date: 06/19/96 Time: 21:38:53

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	0.70	85.71
3	1.51	4.40	84.09
4	2.00	12.10	63.64
5	2.50	18.10	33.15
6	3.00	21.10	14.22
7	3.50	22.20	4.95
8	4.00	22.90	3.06
9	4.50	23.50	2.55
10	5.00	24.00	2.08
11	5.50	24.40	1.64
12	6.00	24.70	1.21
13	6.50	25.10	1.59
14	7.00	25.30	0.79
15	7.50	25.50	0.78
16	8.00	25.70	0.78
17	8.50	25.90	0.77
18	9.00	26.10	0.77
19	9.50	26.30	0.76
20	10.00	26.50	0.75
21	10.50	26.60	0.38
22	11.00	26.70	0.37

BLANK VALUE = 26.7 micrograms carbon
BLANK FACTOR = 26.7 / 10.99988 = +2.43E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ 6/19/96
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 22N12B STD Date: 06/19/96 Time: 21:53:33

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	4.10	95.12
3	1.50	80.70	94.92
4	2.01	229.30	64.81
5	2.50	379.00	39.50
6	3.00	481.90	21.35
7	3.50	541.50	11.01
8	4.00	573.00	5.50
9	4.50	587.20	2.42
10	5.00	593.40	1.04
11	5.50	595.80	0.40
12	6.00	596.90	0.18
13	6.50	597.50	0.10
14	7.00	597.80	0.05
15	7.50	598.20	0.07
16	8.00	598.50	0.05
17	8.50	598.70	0.03
18	9.00	598.90	0.03
19	9.50	599.10	0.03
20	10.00	599.30	0.03
21	10.50	599.50	0.03
22	11.00	599.60	0.02

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(599.6 - 3.850513)(1)/(1000) = +5.957E-01 g/L Carbon
(599.6 - 3.850513)(1)/(1000)(12) = +4.965E-02 Molar Carbon

Sample Run By: PJ McCown 6/19/96
PJ MCCOWN 00000

1.0mL
22N12B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 24N12A STD Date: 06/19/96 Time: 22:06:24

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.20	91.67
3	1.51	34.90	96.56
4	2.00	193.00	81.92
5	2.50	402.10	52.00
6	3.00	516.70	22.18
7	3.50	553.90	6.72
8	4.00	566.20	2.17
9	4.50	570.20	0.70
10	5.00	572.00	0.31
11	5.50	573.00	0.17
12	6.00	573.70	0.12
13	6.50	574.30	0.10
14	7.00	574.70	0.07
15	7.50	575.10	0.07
16	8.00	575.50	0.07
17	8.50	575.80	0.05
18	9.00	576.10	0.05
19	9.50	576.40	0.05
20	10.00	576.60	0.03
21	10.50	576.90	0.05
22	11.00	577.10	0.03

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99938 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(577.1 - 26.72763)(1)/(200) = +2.752E+00 g/L Carbon
(577.1 - 26.72763)(1)/(200)(12) = +2.293E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/19/96
PJ MCCOWN 00000

.200mL
24N12A

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLANK Date: 06/19/96 Time: 22:21:04

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	0.60	50.00
3	1.51	0.80	25.00
4	2.01	1.30	38.46
5	2.51	1.50	13.33
6	3.00	1.80	16.67
7	3.50	2.00	10.00
8	4.00	2.20	9.09
9	4.50	2.30	4.35
10	5.00	2.50	8.00
11	5.50	2.60	3.85
12	6.00	2.70	3.70
13	6.50	2.90	6.90
14	7.00	3.00	3.33
15	7.50	3.10	3.23
16	8.00	3.30	6.06
17	8.50	3.40	2.94
18	9.00	3.50	2.86
19	9.50	3.70	5.41
20	10.00	3.80	2.63
21	10.50	4.00	5.00
22	11.00	4.10	2.44

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(4.1 - 3.850214)(1)/(1) = +2.5E-01 g/L Carbon
(4.1 - 3.850214)(1)/(1)(12) = +2.1E-02 Molar Carbon

Sample Run By: PJM 6/19/96
PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: BLANK Date: 06/19/96 Time: 22:33:29

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.60	100.00
3	1.51	4.30	86.05
4	2.01	11.00	60.91
5	2.51	16.60	33.73
6	3.01	19.40	14.43
7	3.51	20.50	5.37
8	4.01	21.10	2.84
9	4.50	21.40	1.40
10	5.00	21.80	1.83
11	5.50	22.20	1.80
12	6.00	22.60	1.77
13	6.50	22.90	1.31
14	7.00	23.30	1.72
15	7.50	23.50	0.85
16	8.00	23.80	1.26
17	8.50	23.90	0.42
18	9.00	24.10	0.83
19	9.50	24.30	0.82
20	10.00	24.50	0.82
21	10.50	24.60	0.41
22	11.00	24.80	0.81

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99988 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(24.8 - 26.73386)(1)/(1) = < 5.00 E-3 g/L Carbon
(24.8 - 26.73386)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJM 6/19/96
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266 Date: 06/19/96 Time: 22:56:03

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.10	0.00
2	1.01	3.50	97.14
3	1.51	82.40	95.75
4	2.00	223.20	63.08
5	2.50	369.90	39.66
6	3.00	476.40	22.36
7	3.50	537.70	11.40
8	4.00	571.50	5.91
9	4.50	590.20	3.17
10	5.00	601.00	1.80
11	5.50	607.90	1.14
12	6.00	613.20	0.86
13	6.50	617.70	0.73
14	7.00	621.00	0.53
15	7.50	624.40	0.54
16	8.00	626.90	0.40
17	8.50	629.20	0.37
18	9.00	631.40	0.35
19	9.50	633.20	0.28
20	10.00	635.00	0.28
21	10.50	636.40	0.22
22	11.00	637.90	0.24

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(637.9 - 3.849915)(1)/(1) = +6.341E+02 g/L Carbon
(637.9 - 3.849915)(1)/(1)(12) = +5.284E+01 Molar Carbon

Sample Run By: PJ 6/19/96
PJ MCCOWN 00000
.4749g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266 Date: 06/19/96 Time: 23:08:32

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	4.00	60.00
3	1.51	26.90	85.13
4	2.01	98.20	72.61
5	2.51	205.20	52.14
6	3.01	304.60	32.63
7	3.51	362.50	15.97
8	4.01	393.60	7.90
9	4.50	407.00	3.29
10	5.01	414.70	1.86
11	5.51	419.00	1.03
12	6.00	422.30	0.78
13	6.50	424.70	0.57
14	7.00	426.20	0.35
15	7.50	427.90	0.40
16	8.00	429.20	0.30
17	8.50	430.50	0.30
18	9.00	431.70	0.28
19	9.50	432.70	0.23
20	10.00	433.50	0.18
21	10.50	434.40	0.21
22	11.00	435.10	0.16

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99988 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(435.1 - 26.73386)(1)/(1) = +4.084E+02 g/L Carbon
(435.1 - 26.73386)(1)/(1)(12) = +3.403E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: [signature] 6/19/96
PJ MCCOWN 00000

.4749 g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3266 DUP Date: 06/19/96 Time: 23:31:17

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.70	0.00
2	1.01	3.50	80.00
3	1.50	48.20	92.74
4	2.00	140.60	65.72
5	2.50	233.10	39.68
6	3.00	300.10	22.33
7	3.50	342.30	12.33
8	4.00	365.20	6.27
9	4.50	378.50	3.51
10	5.00	385.60	1.84
11	5.50	390.60	1.28
12	6.00	394.50	0.99
13	6.50	397.50	0.75
14	7.00	400.30	0.70
15	7.50	403.00	0.67
16	8.00	405.30	0.57
17	8.50	407.20	0.47
18	9.00	408.90	0.42
19	9.50	410.60	0.41
20	10.00	412.10	0.36
21	10.50	413.60	0.36
22	11.00	415.00	0.34

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(415 - 3.849872)(1)/(1) = +4.112E+02 g/L Carbon
(415 - 3.849872)(1)/(1)(12) = +3.426E+01 Molar Carbon

Sample Run By: PJM 6/19/96
PJ MCCOWN 00000

.3030g

WHC-SD-WM-DP-156, REV. 16

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3266 DUP Date: 06/19/96 Time: 23:44:11

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	5.70	71.93
3	1.51	45.60	87.50
4	2.00	121.90	62.59
5	2.50	194.00	37.16
6	3.00	235.90	17.76
7	3.50	255.10	7.53
8	4.00	263.60	3.22
9	4.50	267.90	1.61
10	5.00	270.30	0.89
11	5.50	272.50	0.81
12	6.00	273.90	0.51
13	6.50	275.30	0.51
14	7.00	276.70	0.51
15	7.50	277.60	0.32
16	8.00	278.70	0.39
17	8.50	279.80	0.39
18	9.00	280.50	0.25
19	9.50	281.20	0.25
20	10.00	282.10	0.32
21	10.50	282.70	0.21
22	11.00	283.40	0.25

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99988 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(283.4 - 26.72911)(1)/(1) = +2.567E+02 g/L Carbon
(283.4 - 26.72911)(1)/(1)(12) = +2.139E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 6/19/96
3030g PJ MCCOWN 00000

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003289 Date: 06/20/96 Time: 01:39:33

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	15.10	97.35
3	1.51	64.20	76.48
4	2.00	120.70	46.81
5	2.50	165.90	27.25
6	3.00	196.50	15.57
7	3.50	212.90	7.70
8	4.01	221.30	3.80
9	4.50	224.60	1.47
10	5.00	226.90	1.01
11	5.50	228.60	0.74
12	6.00	229.60	0.44
13	6.50	230.90	0.56
14	7.00	231.80	0.39
15	7.50	232.60	0.34
16	8.00	233.50	0.39
17	8.50	234.50	0.43
18	9.00	235.30	0.34
19	9.50	235.90	0.25
20	10.00	236.60	0.30
21	10.50	237.30	0.29
22	11.00	237.90	0.25

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(237.9 - 3.850529)(1)/(1) = +2.340E+02 g/L Carbon
(237.9 - 3.850529)(1)/(1)(12) = +1.950E+01 Molar Carbon

Sample Run By: PJ McCown 6/19/96
PJ MCCOWN 00000

.1243g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003289 Date: 06/20/96 Time: 01:52:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.80	0.00
2	1.01	13.10	93.89
3	1.51	136.00	90.37
4	2.00	267.60	49.18
5	2.50	417.80	35.95
6	3.00	503.10	16.95
7	3.50	541.20	7.04
8	4.00	560.50	3.44
9	4.50	569.20	1.53
10	5.00	574.40	0.91
11	5.50	577.90	0.61
12	6.00	580.30	0.41
13	6.50	582.10	0.31
14	7.00	583.30	0.21
15	7.50	584.40	0.19
16	8.00	585.60	0.20
17	8.50	586.30	0.12
18	9.00	587.00	0.12
19	9.50	587.60	0.10
20	10.00	588.20	0.10
21	10.50	588.70	0.08
22	11.00	589.20	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99988 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(589.2 - 26.73163)(1)/(1) = +5.625E+02 g/L Carbon
(589.2 - 26.73163)(1)/(1)(12) = +4.687E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ 6/19/96
PJ MCCOWN 00000
.1243g

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3289 DUP Date: 06/20/96 Time: 02:13:16

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	17.90	97.77
3	1.50	75.60	76.32
4	2.00	144.30	47.61
5	2.50	200.80	28.14
6	3.00	240.50	16.51
7	3.50	262.70	8.45
8	4.00	274.50	4.30
9	4.50	280.60	2.17
10	5.00	283.60	1.06
11	5.50	285.60	0.70
12	6.00	287.20	0.56
13	6.50	288.60	0.49
14	7.00	289.80	0.41
15	7.50	290.90	0.38
16	8.00	292.00	0.38
17	8.50	293.10	0.38
18	9.00	293.80	0.24
19	9.50	294.80	0.34
20	10.00	295.70	0.30
21	10.50	296.60	0.30
22	11.00	297.40	0.27

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(297.4 - 3.849239)(1)/(1) = +2.936E+02 g/L Carbon
(297.4 - 3.849239)(1)/(1)(12) = +2.446E+01 Molar Carbon

Sample Run By: [signature] 6/19/96
PJ MCCOWN 00000

.1528g

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3289 DUP Date: 06/20/96 Time: 02:27:26

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	49.30	97.97
3	1.51	172.00	71.34
4	2.00	311.30	44.75
5	2.50	493.90	36.97
6	3.00	616.00	19.82
7	3.50	673.40	8.52
8	4.00	701.40	3.99
9	4.50	715.30	1.94
10	5.00	722.30	0.97
11	5.50	727.20	0.67
12	6.00	730.30	0.42
13	6.50	732.80	0.34
14	7.00	734.50	0.23
15	7.50	736.10	0.22
16	8.00	737.10	0.14
17	8.50	738.10	0.14
18	9.00	738.90	0.11
19	9.50	739.80	0.12
20	10.00	740.50	0.09
21	10.50	741.10	0.08
22	11.00	741.70	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99988 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(741.7 - 26.7316)(1)/(1) = +7.150E+02 g/L Carbon
(741.7 - 26.7316)(1)/(1)(12) = +5.958E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ 6/19/96
PJ MCCOWN 00000
.1528g

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3289 SPK Date: 06/20/96 Time: 02:45:51

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	29.10	97.25
3	1.51	145.00	79.93
4	2.00	289.70	49.95
5	2.50	403.40	28.19
6	3.00	474.40	14.97
7	3.50	517.50	8.33
8	4.00	539.60	4.10
9	4.50	549.10	1.73
10	5.00	552.80	0.67
11	5.50	555.10	0.41
12	6.00	556.70	0.29
13	6.50	557.90	0.22
14	7.00	559.10	0.21
15	7.50	560.10	0.18
16	8.00	561.10	0.18
17	8.50	562.10	0.18
18	9.00	562.90	0.14
19	9.50	563.90	0.18
20	10.00	564.50	0.11
21	10.50	565.40	0.16
22	11.00	566.10	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 3.849957 micrograms carbon
BLANK FACTOR = 3.849957 / 10.99988 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(566.1 - 3.850235)(1)/(1) = +5.622E+02 g/L Carbon
(566.1 - 3.850235)(1)/(1)(12) = +4.685E+01 Molar Carbon

Sample Run By: 6/19/96
PJ MCCOWN 00000

.1483g
+ .500mL 22N12B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3289 SPK Date: 06/20/96 Time: 02:59:15

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.43 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	31.30	97.44
3	1.50	144.70	78.37
4	2.00	289.60	50.03
5	2.50	563.50	48.61
6	3.00	789.50	28.63
7	3.50	878.20	10.10
8	4.00	914.40	3.96
9	4.50	929.90	1.67
10	5.00	936.90	0.75
11	5.50	940.70	0.40
12	6.00	943.30	0.28
13	6.50	945.80	0.26
14	7.00	947.50	0.18
15	7.50	948.70	0.13
16	8.00	949.70	0.11
17	8.50	950.80	0.12
18	9.00	951.60	0.08
19	9.50	952.40	0.08
20	10.00	953.00	0.06
21	10.50	953.70	0.07
22	11.00	954.20	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 26.7297 micrograms carbon
BLANK FACTOR = 26.7297 / 10.99988 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(954.2 - 26.72959)(1)/(1) = +9.275E+02 g/L Carbon
(954.2 - 26.72959)(1)/(1)(12) = +7.729E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ 6/19/96
PJ MCCOWN 00000

.1483g
+ .100mL 24N12A

LABCORE Data Entry Template for Worklist# 10184

Analyst: JLS2 **Instrument:** CARB2 _____ **Book#** 22N12B TIC 24N12A TOC

Method: LA-342-100 Rev/Mod D-0

Worklist Comment: S-107 FOR RERUN RECOMMENDED SAMPLE SIZE .400g RTS!

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	BLNK				@TICTOC1	SOLID		
2	STD				@TICTOC1	SOLID		
3	SAMPLE	S96T003251	0		@TICTOC1	SOLID	95000147	S-107
		Analytes Requested: TIC-02 , TOC-02						
4	DUP	S96T003251	0		@TICTOC1	SOLID		
5	SPK	S96T003251	0		@TICTOC1	SOLID		

Final page for worklist # 10184

Jackie Steele

Analyst Signature **Date** **Analyst Signature** **Date**

Data Entry Comments:

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Completed Worklist Report for Worklist# 10184

Analyst: jls2 **Instrument:** CARB2 **Book#** _____

Method: LA 342-100 Rev/Mod D-0

Worklist Comment: S-107 FOR RERUN RECOMMENDED SAMPLE SIZE .400g RTS!

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	BLNK			0	@TICTOC1 TIC-02	SOLID	1	2.30E+0	2.300	ug/g
1	BLNK			0	@TICTOC1 TOC-02	SOLID	1	3.10E+0	3.100	ug/g
2	STD			0	@TICTOC1 TIC-02	SOLID	6 02E+02	5.83E+2	96.844	% Recovery
2	STD			0	@TICTOC1 TOC-02	SOLID	3 00E+03	2.83E+3	94.333	% Recovery
3	SAMPLE	S96T003251		0	@TICTOC1 TIC-02	SOLID	N/A	1.89E+03	5.000	ug/g
3	SAMPLE	S96T003251		0	@TICTOC1 TOC-02	SOLID	N/A	1.89E+02	40.000	ug/g
4	DUP	S96T003251		0	@TICTOC1 TIC-02	SOLID	..89E+3	1.65E+3	13.559	RPD
4	DUP	S96T003251		0	@TICTOC1 TOC-02	SOLID	..89E+2	1.67E+2	12.360	RPD
5	SPK	S96T003251		0	@TICTOC1 TIC-02	SOLID	1 00E+02	9.24E+01	92.400	% Recovery
5	SPK	S96T003251		0	@TICTOC1 TOC-02	SOLID	1 00E+02	9.67E+01	96.700	% Recovery

Final page for worklist# 10184

Analyst Signature **Date** **Analyst Signature** **Date**

Robin Schwoebel 6/24/96
Reviewer Signature **Date**

Units shown for QC (BLK/BKG) may not reflect the actual units.

WORKBOOK PAGE: BLANK1

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.0000	0.0000
BLNK	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	6.2	24.6
10184	µg of Carbon from Baseline	(C2)	3.9	27.7

Test Code	@TICTOC1
Matrix	SOLID
Batch Number	96006417
Rerun	0
Sample Prep	N/A
Sample #	BLNK
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/24/96
Analysis Date	06/21/96
Analysis Time	
Sample Point	S-107

µg of Carbon = |C1-C2|

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon	2.30E+00	3.10E+00

Data Entered By:	RTS	Date:	06/24/96
Signature of Chemist:	Paul Schroeder	Date:	6/24/96

BLANK.WB1 REV 1.0 342100ML

WORKBOOK PAGE: STD2

TIC/TOC : LA-342-100 (D-0) LIQUIDS

			TIC	TOC
Type	Sample Size in mL	(SS)	1.0000	0.2000
STD	Dilution Factor	(DF)	1	1
Work List	Final Coulometer Reading in µg	(C1)	586.8	592.9
10184	µg of Carbon from Baseline	(C2)	3.9	27.7
Test Code	Standard Book Number		22N12B	24N12A
@TICTOC1	Standard Value (µg/ml)		602	3000

Matrix	LIQUID
Batch Number	96006417
Rerun	0
Sample Prep	N/A
Sample #	STD
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/24/96
Analysis Date	06/21/96
Analysis Time	
Sample Point	S-107

QC Actual in µg/mL = Standard Value (µg/mL)

QC Found in µg/mL = (C1 - C2) * DF / SS

QC Found in µg/mL for TIC = 5 if C1 < C2

QC Found in µg/mL for TOC = 40 if C1 < C2

% Recovery = QC Found / QC Actual * 100

	TIC	TOC
Method Detection Limit in µg/mL	5	40
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	5.83E+02	2.83E+03
Percent Standard Recovery	96.8	94.2

Data Entered By:	RTS	Date:	06/24/96
Signature of Chemist:	Rw Schwech	Date:	6/24/96

STANDARD.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1908	0.1908
SAMPLE	Dilution Factor	(DF)	1	1
Work List	µg of Carbon in Sample	(C1)	364.5	63.7
10184	µg of Carbon from Baseline	(C2)	3.9	27.7
Test Code				
@TICTOC1				

Matrix	SOLID
Batch Number	96006417
Rerun	0
Sample Prep	N/A
Sample #	S96T003251
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/24/96
Analysis Date	06/21/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.89E+03	1.89E+02

Data Entered By:	RTS	Date:	06/24/96
Signature of Chemist:	RW Johnson	Date:	6/24/96

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (D-0) SOLIDS

			TIC	TOC
Type	Sample Size in g	(SS)	0.1873	0.1873
DUP	Dilution Factor	(DF)	1	1
Work List #	µg of Carbon in Sample	(C1)	313.1	58.9
10184	µg of Carbon from Baseline	(C2)	3.9	27.7
Test Code	Known µg of C from Original Sample		1.89E+3	1.89E+2
@TICTOC1				

Matrix	SOLID
Batch Number	96006417
Rerun #	0
Sample Prep	N/A
Sample #	S96T003251
Instrument Code	CARB2
Prepared By	RTS
Chemist	RWS
Analyst	JLS2
Date Complete	06/24/96
Analysis Date	06/21/96
Analysis Time	
Sample Point	S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

	TIC	TOC
Method Detection Limit in ug/g	5	40
µg of Carbon/g	1.65E+03	1.67E+02

Data Entered By:	RTS	Date:	06/24/96
Signature of Chemist:	Rick Schwendiman	Date:	6/24/96

SAMPLE.WB1 REV 1.0 342100ML

WORKBOOK PAGE: SPIKE5

TIC/TOC : LA-342-100 (D-0) SOLIDS

	Sample Vial Data		TIC	TOC
Type: SPK	Sample Size in g	(SS)	0.1908	0.1908
Work List: 10184	Final Coulometer Reading in µg	(C1)	364.5	63.7
	Spiked Vial Data			
Test Code: @TICTOC1	Sample Size in g	(SPK SS)	0.1751	0.1751
	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
Matrix: SOLID	Final Coulometer Reading in µg	(C3)	587.4	346.6
	Spike Book Number		22N12B	24N12A
Batch Number: 96006417	Spike Standard Value in µg/ml		602	3000
	Spike Concentration in µg	(SPK CONC)	301	300

Rerun: 0

Sample Prep: N/A

Sample #: S96T003251

Instrument Code: CARB2

Prepared By: RTS

Chemist: RWS

Analyst: JLS2

Date Complete: 06/24/96

Analysis Date: 06/21/96

Analysis Time:

Sample Point: S-107

Spike Concentration in µg = (Spike Std. Value in µg/mL)*(SPK VOL)

Percent Spike Recovery = (C3) / [(C1/SS * SPK SS) + (SPK CONC)] * 100

QC Actual in µg/mL = Spike Value (µg/mL)
QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100

	TIC	TOC
QC Actual in µg/mL	6.02E+02	3.00E+03
QC Found in µg/mL	5.56E+02	2.90E+03
Percent Spike Recovery	92.4	96.7

Data Entered By:	RTS	Date:	06/24/96
Signature of Chemist:	RW Schneider	Date:	6/24/96

SPIKE.WB1 REV 1.0 342100ML

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT

TICTOC REV 2.0

<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-156, REV. 16

Sample: BASELINE Date: 06/21/96 Time: 09:35:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASELINE
Blank Value = N/A

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.30	100.00
3	1.51	0.80	62.50
4	2.01	1.00	20.00
5	2.51	1.30	23.08
6	3.01	1.50	13.33
7	3.51	1.80	16.67
8	4.01	1.90	5.26
9	4.50	2.00	5.00
10	5.00	2.20	9.09
11	5.50	2.30	4.35
12	6.00	2.50	8.00
13	6.50	2.60	3.85
14	7.00	2.70	3.70
15	7.50	2.90	6.90
16	8.00	3.00	3.33
17	8.50	3.20	6.25
18	9.00	3.30	3.03
19	9.50	3.40	2.94
20	10.00	3.60	5.56
21	10.50	3.80	5.26
22	11.00	3.90	2.56

BLANK VALUE = 3.9 micrograms carbon
BLANK FACTOR = 3.9 / 11.00165 = +3.5E-01 ug/min Carbon

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-156, REV. 1B

Sample: 1-BASELINE Date: 06/21/96 Time: 10:12:35

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = 1-BASELINE
Blank Value = N/A

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	1.20	83.33
3	1.51	8.40	85.71
4	2.00	16.50	49.09
5	2.50	20.70	20.29
6	3.00	22.40	7.59
7	3.50	23.20	3.45
8	4.00	24.00	3.33
9	4.50	24.40	1.64
10	5.00	24.80	1.61
11	5.50	25.20	1.59
12	6.00	25.50	1.18
13	6.50	25.80	1.16
14	7.00	26.00	0.77
15	7.50	26.30	1.14
16	8.00	26.50	0.75
17	8.50	26.80	1.12
18	9.00	26.90	0.37
19	9.50	27.10	0.74
20	10.00	27.30	0.73
21	10.50	27.40	0.36
22	11.00	27.70	1.08

BLANK VALUE = 27.7 micrograms carbon
BLANK FACTOR = 27.7 / 10.99884 = +2.52E+00 ug/min Carbon

<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-STD 22N12B Date: 06/21/96 Time: 10:33:16

Sample Size = 1 uL 1ml
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	15.60	100.00
3	1.51	140.10	88.87
4	2.01	293.30	52.23
5	2.51	415.10	29.34
6	3.01	497.00	16.48
7	3.51	542.80	8.44
8	4.01	566.20	4.13
9	4.50	577.10	1.89
10	5.00	581.60	0.77
11	5.50	583.70	0.36
12	6.00	584.30	0.10
13	6.50	585.00	0.12
14	7.00	585.20	0.03
15	7.50	585.40	0.03
16	8.00	585.70	0.05
17	8.50	585.90	0.03
18	9.00	586.10	0.03
19	9.50	586.30	0.03
20	10.00	586.50	0.03
21	10.50	586.70	0.03
22	11.00	586.80	0.02

USER INPUT BLANK VALUE
BLANK VALUE = 3.849594 micrograms carbon
BLANK FACTOR = 3.849594 / 10.99884 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(586.8 - 3.850235)(1)/(1) = +5.829E+02 g/L Carbon
(586.8 - 3.850235)(1)/(1)(12) = +4.858E+01 Molar Carbon

Sample Run By: Jacque Steele 6/21/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-STD 24N12A Date: 06/21/96 Time: 10:49:59

Sample Size = 1 uL 200ml
Dil Factor = 1
Blank ID # =
Blank Value = 2.52 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	1.10	90.91
3	1.51	20.60	94.66
4	2.01	134.00	84.63
5	2.51	342.00	60.82
6	3.01	495.30	30.95
7	3.51	558.30	11.28
8	4.00	579.30	3.63
9	4.50	585.40	1.04
10	5.00	587.40	0.34
11	5.50	588.60	0.20
12	6.00	589.30	0.12
13	6.50	590.10	0.14
14	7.00	590.40	0.05
15	7.50	590.80	0.07
16	8.00	591.20	0.07
17	8.50	591.50	0.05
18	9.00	591.90	0.07
19	9.50	592.10	0.03
20	10.00	592.40	0.05
21	10.50	592.60	0.03
22	11.00	592.90	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 27.71708 micrograms carbon
BLANK FACTOR = 27.71708 / 10.99884 = +2.5E+00 ug/min Carbon

SAMPLE RESULTS:
(592.9 - 27.72585)(1)/(1) = +5.652E+02 g/L Carbon
(592.9 - 27.72585)(1)/(1)(12) = +4.710E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-BLANK Date: 06/21/96 Time: 11:03:54

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	1.90	84.21
3	1.51	2.70	29.63
4	2.00	3.30	18.18
5	2.50	3.60	8.33
6	3.00	3.90	7.69
7	3.51	4.10	4.88
8	4.01	4.20	2.38
9	4.50	4.40	4.55
10	5.00	4.50	2.22
11	5.50	4.70	4.26
12	6.00	4.90	4.08
13	6.50	5.00	2.00
14	7.00	5.10	1.96
15	7.50	5.20	1.92
16	8.00	5.40	3.70
17	8.50	5.50	1.82
18	9.00	5.60	1.79
19	9.50	5.80	3.45
20	10.00	5.90	1.69
21	10.50	6.20	4.84
22	11.00	6.20	0.00

USER INPUT BLANK VALUE
BLANK VALUE = 3.849594 micrograms carbon
BLANK FACTOR = 3.849594 / 10.99884 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(6.2 - 3.849594)(1)/(1) = +2.4E+00 g/L Carbon
(6.2 - 3.849594)(1)/(1)(12) = +2.0E-01 Molar Carbon

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-BLANK Date: 06/21/96 Time: 13:24:16

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.52 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.00	0.00
2	1.01	1.20	100.00
3	1.51	7.00	82.86
4	2.00	14.30	51.05
5	2.50	18.20	21.43
6	3.00	20.10	9.45
7	3.50	20.80	3.37
8	4.00	21.30	2.35
9	4.50	21.70	1.84
10	5.00	21.90	0.91
11	5.50	22.20	1.35
12	6.00	22.50	1.33
13	6.50	22.70	0.88
14	7.00	23.00	1.30
15	7.50	23.30	1.29
16	8.00	23.60	1.27
17	8.50	23.70	0.42
18	9.00	24.00	1.25
19	9.50	24.10	0.41
20	10.00	24.30	0.82
21	10.50	24.50	0.82
22	11.00	24.60	0.41

USER INPUT BLANK VALUE
BLANK VALUE = 27.71708 micrograms carbon
BLANK FACTOR = 27.71708 / 10.99884 = +2.5E+00 ug/min Carbon

SAMPLE RESULTS:
(24.6 - 27.71708)(1)/(1) = < 5.00 E-3 g/L Carbon
(24.6 - 27.71708)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-S96T003251 Date: 06/21/96 Time: 13:57:49

Sample Size = 1 uL ,1908g
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	2.90	100.00
3	1.51	28.30	89.75
4	2.01	80.50	64.84
5	2.51	141.00	42.91
6	3.01	202.60	30.40
7	3.51	261.00	22.38
8	4.01	293.90	11.19
9	4.50	312.40	5.92
10	5.00	324.40	3.70
11	5.50	336.70	3.65
12	6.00	348.20	3.30
13	6.50	353.90	1.61
14	7.00	356.40	0.70
15	7.50	358.20	0.50
16	8.00	359.30	0.31
17	8.50	360.60	0.36
18	9.00	361.50	0.25
19	9.50	362.30	0.22
20	10.00	363.00	0.19
21	10.50	363.80	0.22
22	11.00	364.50	0.19

USER INPUT BLANK VALUE
BLANK VALUE = 3.849594 micrograms carbon
BLANK FACTOR = 3.849594 / 10.99884 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(364.5 - 3.849936)(1)/(1) = +3.607E+02 g/L Carbon
(364.5 - 3.849936)(1)/(1)(12) = +3.005E+01 Molar Carbon

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-S96T003251 Date: 06/21/96 Time: 14:10:19

Sample Size = 1 uL .1908g
Dil Factor = 1
Blank ID # =
Blank Value = 2.52 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	4.90	75.51
3	1.51	16.20	69.75
4	2.01	33.10	51.06
5	2.51	46.00	28.04
6	3.01	50.20	8.37
7	3.51	52.80	4.92
8	4.00	54.50	3.12
9	4.50	55.70	2.15
10	5.00	56.60	1.59
11	5.50	57.70	1.91
12	6.00	58.40	1.20
13	6.50	59.30	1.52
14	7.00	59.80	0.84
15	7.50	60.20	0.66
16	8.00	60.80	0.99
17	8.50	61.40	0.98
18	9.00	61.90	0.81
19	9.50	62.40	0.80
20	10.00	62.90	0.79
21	10.50	63.20	0.47
22	11.00	63.70	0.78

USER INPUT BLANK VALUE
BLANK VALUE = 27.71708 micrograms carbon
BLANK FACTOR = 27.71708 / 10.99864 = +2.5E+00 ug/min Carbon

SAMPLE RESULTS:
(63.7 - 27.72169)(1)/(1) = +3.60E+01 g/L Carbon
(63.7 - 27.72169)(1)/(1)(12) = +3.00E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jessie Steele 6/21/96
JL STEELE 00000

WHC-SD-WM-OP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-3251 DUP Date: 06/21/96 Time: 14:22:21

Sample Size = 1 uL 1837g
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	3.20	87.50
3	1.51	20.50	84.39
4	2.00	68.60	70.12
5	2.50	140.80	51.28
6	3.00	211.60	33.46
7	3.50	257.20	17.73
8	4.00	277.20	7.22
9	4.50	287.10	3.45
10	5.00	292.40	1.81
11	5.50	296.10	1.25
12	6.00	298.80	0.90
13	6.50	301.10	0.76
14	7.00	303.20	0.69
15	7.50	304.80	0.52
16	8.00	306.40	0.52
17	8.50	307.70	0.42
18	9.00	309.00	0.42
19	9.50	310.10	0.35
20	10.00	311.20	0.35
21	10.50	312.30	0.35
22	11.00	313.10	0.26

USER INPUT BLANK VALUE
BLANK VALUE = 3.849594 micrograms carbon
BLANK FACTOR = 3.849594 / 10.99884 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(313.1 - 3.849594)(1)/(1) = +3.093E+02 g/L Carbon
(313.1 - 3.849594)(1)/(1)(12) = +2.577E+01 Molar Carbon

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 16

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-3251 DUP Date: 06/21/96 Time: 14:34:27

Sample Size = 1 uL , 1837g
Dil Factor = 1
Blank ID # =
Blank Value = 2.52 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.50	0.00
2	1.01	4.70	68.09
3	1.51	13.40	64.93
4	2.01	27.10	50.55
5	2.50	38.00	28.68
6	3.00	43.20	12.04
7	3.50	46.30	6.70
8	4.00	48.00	3.54
9	4.50	49.60	3.23
10	5.00	50.70	2.17
11	5.50	51.70	1.93
12	6.00	52.50	1.52
13	6.50	53.40	1.69
14	7.00	54.20	1.48
15	7.50	54.90	1.28
16	8.00	55.50	1.08
17	8.50	56.10	1.07
18	9.00	56.70	1.06
19	9.50	57.20	0.87
20	10.00	57.70	0.87
21	10.50	58.30	1.03
22	11.00	58.90	1.02

USER INPUT BLANK VALUE
BLANK VALUE = 27.71708 micrograms carbon
BLANK FACTOR = 27.71708 / 10.99884 = +2.5E+00 ug/min Carbon

SAMPLE RESULTS:
(58.9 - 27.72185)(1)/(1) = +3.12E+01 g/L Carbon
(58.9 - 27.72185)(1)/(1)(12) = +2.60E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jacque Steele 6/21/96
JL STEELE 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-3251 SPIKE Date: 06/21/96 Time: 14:47:02

Sample Size = 1 uL .1751g + .500ml 22N12B
Dil Factor = 1
Blank ID # =
Blank Value = .35 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	15.00	97.33
3	1.51	104.10	85.59
4	2.01	230.10	54.76
5	2.51	354.50	35.09
6	3.01	449.20	21.08
7	3.50	507.20	11.44
8	4.00	537.70	5.67
9	4.50	552.30	2.64
10	5.00	560.40	1.45
11	5.50	565.40	0.88
12	6.00	568.80	0.60
13	6.50	571.80	0.52
14	7.00	574.90	0.54
15	7.50	577.00	0.36
16	8.00	578.90	0.33
17	8.50	580.80	0.33
18	9.00	582.20	0.24
19	9.50	583.60	0.24
20	10.00	584.90	0.22
21	10.50	586.10	0.20
22	11.00	587.40	0.22

USER INPUT BLANK VALUE
BLANK VALUE = 3.849594 micrograms carbon
BLANK FACTOR = 3.849594 / 10.99884 = +3.5E-01 ug/min Carbon

SAMPLE RESULTS:
(587.4 - 3.849957)(1)/(1) = +5.836E+02 g/L Carbon
(587.4 - 3.849957)(1)/(1)(12) = +4.863E+01 Molar Carbon

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1b

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-3251 SPIKE Date: 06/21/96 Time: 14:59:08

Sample Size = 1 uL .1751g + .100ml 2HN12A
Dil Factor = 1
Blank ID # =
Blank Value = 2.52 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.70	0.00
2	1.01	15.10	88.74
3	1.51	81.40	81.45
4	2.00	188.50	56.82
5	2.50	274.90	31.43
6	3.01	313.80	12.40
7	3.51	326.60	3.92
8	4.01	331.20	1.39
9	4.50	333.60	0.72
10	5.00	335.20	0.48
11	5.50	336.70	0.45
12	6.00	337.90	0.36
13	6.50	339.10	0.35
14	7.00	340.20	0.32
15	7.50	341.40	0.35
16	8.00	342.20	0.23
17	8.50	343.00	0.23
18	9.00	343.80	0.23
19	9.50	344.50	0.20
20	10.00	345.20	0.20
21	10.50	345.80	0.17
22	11.00	346.60	0.23

USER INPUT BLANK VALUE
BLANK VALUE = 27.71708 micrograms carbon
BLANK FACTOR = 27.71708 / 10.99884 = +2.5E+00 ug/min Carbon

SAMPLE RESULTS:
(346.6 - 27.72154)(1)/(1) = +3.189E+02 g/L Carbon
(346.6 - 27.72154)(1)/(1)(12) = +2.657E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele 6/21/96
JL STEELE 00000

THE FOLLOWING ANALYSES WERE RERUN AND INCLUDED IN THE DATA PACKAGE, BUT THE RESULTS HAVE NOT BEEN REPORTED IN THE FINAL SUMMARY REPORTS.

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-S96T003251 Date: 06/17/96 Time: 14:50:18

Sample Size = 1 uL 1.2316g
Dil Factor = 1
Blank ID # =
Blank Value = .46 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	1.00	0.00
2	1.01	4.70	78.72
3	1.50	28.60	83.57
4	2.00	87.90	67.46
5	2.50	171.10	48.63
6	3.00	246.30	30.53
7	3.50	296.40	16.90
8	4.00	324.70	8.72
9	4.50	339.20	4.27
10	5.00	347.50	2.39
11	5.50	352.70	1.47
12	6.00	357.20	1.26
13	6.50	360.60	0.94
14	7.00	363.50	0.80
15	7.50	366.20	0.74
16	8.00	368.40	0.60
17	8.50	370.30	0.51
18	9.00	372.00	0.46
19	9.50	373.70	0.45
20	10.00	375.20	0.40
21	10.50	376.30	0.29
22	11.00	377.60	0.34

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 5.059467 micrograms carbon
BLANK FACTOR = 5.059467 / 10.99884 = +4.6E-01 ug/min Carbon

SAMPLE RESULTS:
(377.6 - 5.059916)(1)/(1) = +3.725E+02 g/L Carbon
(377.6 - 5.059916)(1)/(1)(12) = +3.105E+01 Molar Carbon

Sample Run By: Jackie Steele
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1-S96T003251 Date: 06/17/96 Time: 15:02:36

Sample Size = 1 uL .2316g
Dil Factor = 1
Blank ID # =
Blank Value = 2.82 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.50	0.00
2	1.01	4.00	62.50
3	1.50	12.30	67.48
4	2.01	24.40	49.59
5	2.51	38.10	35.96
6	3.01	47.80	20.29
7	3.51	53.90	11.32
8	4.01	57.30	5.93
9	4.50	59.80	4.18
10	5.00	61.40	2.61
11	5.50	63.00	2.54
12	6.00	64.00	1.56
13	6.50	65.20	1.84
14	7.00	66.30	1.66
15	7.50	67.50	1.78
16	8.00	68.40	1.32
17	8.50	69.30	1.30
18	9.00	70.10	1.14
19	9.50	70.80	0.99
20	10.00	71.60	1.12
21	10.50	72.40	1.10
22	11.00	73.30	1.23

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 31.01673 micrograms carbon
BLANK FACTOR = 31.01673 / 10.99884 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:
(73.3 - 31.0243)(1)/(1) = +4.23E+01 g/L Carbon
(73.3 - 31.0243)(1)/(1)(12) = +3.52E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jaime Steele
JL STEELE 00000

WHC-SD-WM-DP-156, REV 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1- 3251 DUP Date: 06/17/96 Time: 15:14:28

Sample Size = 1 uL .33668
Dil Factor = 1
Blank ID # =
Blank Value = .46 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	5.90	86.44
3	1.51	43.20	86.34
4	2.00	125.60	65.61
5	2.50	232.50	45.98
6	3.00	333.10	30.20
7	3.50	404.90	17.73
8	4.00	452.30	10.48
9	4.50	481.00	5.97
10	5.00	498.70	3.55
11	5.50	510.10	2.23
12	6.00	518.80	1.68
13	6.50	526.00	1.37
14	7.00	532.10	1.15
15	7.50	537.30	0.97
16	8.00	542.00	0.87
17	8.50	546.20	0.77
18	9.00	549.60	0.62
19	9.50	553.00	0.61
20	10.00	556.00	0.54
21	10.50	558.50	0.45
22	11.00	560.80	0.41

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 5.059467 micrograms carbon
BLANK FACTOR = 5.059467 / 10.99884 = +4.6E-01 ug/min Carbon

SAMPLE RESULTS:
(560.8 - 5.05986)(1)/(1) = +5.557E+02 g/L Carbon
(560.8 - 5.05986)(1)/(1)(12) = +4.631E+01 Molar Carbon

Sample Run By: Jackie Steele
JL STEELE 00000

WHC-SD-WM-DP-156, REV. 1B

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 1- 3251 DUP Date: 06/17/96 Time: 15:28:14

Sample Size = 1 uL .33 Leg
Dil Factor = 1
Blank ID # =
Blank Value = 2.82 ug/minute C

Analyst : JL STEELE
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	3.70	0.00
2	1.01	8.10	54.32
3	1.50	21.30	61.97
4	2.00	37.50	43.20
5	2.50	56.30	33.39
6	3.00	70.40	20.03
7	3.50	79.20	11.11
8	4.00	84.30	6.05
9	4.50	88.00	4.20
10	5.00	91.20	3.51
11	5.50	93.50	2.46
12	6.00	95.80	2.40
13	6.50	97.60	1.84
14	7.00	99.30	1.71
15	7.50	100.90	1.59
16	8.00	102.30	1.37
17	8.50	103.80	1.45
18	9.00	105.30	1.42
19	9.50	106.20	0.85
20	10.00	107.60	1.30
21	10.50	108.80	1.10
22	11.00	109.90	1.00

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 31.01673 micrograms carbon
BLANK FACTOR = 31.01673 / 10.99884 = +2.8E+00 ug/min Carbon

SAMPLE RESULTS:
(109.9 - 31.0169)(1)/(1) = +7.888E+01 g/L Carbon
(109.9 - 31.0169)(1)/(1)(12) = +6.574E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: Jackie Steele
JL STEELE 00000

WORKBOOK PA

TIC/TOC : L

Type	SAMPL.
Work Li	9914
Test Coc	@TICTOC
Matrix	SOLID
Batch Num	9600609.
Rerun	0
Sample P	N/A
Sample	S96T0032
Instrument	CARB2
Prepared	RTS
Chemis	RWS
Analys	JLS2
Date Comple	06/18/96
Analysis	06/17/9
Analysis	
Sample P	S-107

(D-0) SOLIDS		TIC	TOC
le Size in g	(SS)	0.2316	0.2316
ou Factor	(DF)	1	1
Carbon in Sample	(C1)	377.6	73.3
Carbon from Baseline	(C2)	5.1	31

f C...on/g = (C1-C2) * DF / SS
: C...on/g for TIC = 5 if C1 < C2
...on/g for TOC = 40 if C1 < C2

BEST AVAILABLE COPY

	TIC	TOC
Detection Limit in ug/g	5	40
...n/g	1.61E+03	1.83E+02

Data Entered B	RTS	Date:	06/18/96
Signature of CF		Date:	

SAMPLE.WB1 REV 1.

342100ML

RW Schroeder 6/19/96

DATA NOT USED IN PACKAGE

WORKBOOK PAGE

TIC/TOC : LA

Type	
DUP	
Work Li	
9914	
Test Cod	
@TICTOC	
Matrix	
SOLID	
Batch Num	
96006093	
Rerun	
0	
Sample P	
N/A	
Sample	
S96T003	
Instrument	
CARB	
Prepared	
RTS	
Chemis	
RWS	
Analys	
JLS2	
Date Com	
06/18/	
Analysis	
06/17/	
Analysis	
Sample	
S-10	

SOLIDS		TIC	TOC
in g	(SS)	0.3366	0.3366
tor	(DF)	1	1
in Sample	(C1)	560.8	109.9
from Baseline	(C2)	5.1	31
C from Original Sample		1.61E+3	1.83E+2

of C on/g = (C1-C2) * DF / SS
of C on/g for TIC = 5 if C1 < C2
on/g for TOC = 40 if C1 < C2

BEST AVAILABLE COPY

	TIC	TOC
etection Limit in ug/g	5	40
/g	1.65E+03	2.34E+02

Data Entered	RTS	Date:	06/18/96
Signature of C		Date:	

SAMPLE.WB1 REV 1 342100ML

RW Schroeder 6/19/96

DATA NOT USED IN PACKAGE

WHC-SD-WM-DP-156, REV. 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003289 Date: 06/15/96 Time: 14:42:48

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	26.10	96.55
3	1.51	87.60	70.21
4	2.01	165.50	47.07
5	2.51	229.00	27.73
6	3.01	273.70	16.33
7	3.51	299.40	8.58
8	4.00	312.30	4.13
9	4.50	318.20	1.85
10	5.00	322.10	1.21
11	5.50	324.30	0.68
12	6.00	326.20	0.58
13	6.50	328.10	0.58
14	7.00	329.90	0.55
15	7.50	331.30	0.42
16	8.00	332.70	0.42
17	8.50	334.00	0.39
18	9.00	335.60	0.48
19	9.50	336.60	0.30
20	10.00	337.70	0.33
21	10.50	338.70	0.30
22	11.00	339.70	0.29

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(339.7 - 6.161914)(1)/(1) = +3.335E+02 g/L Carbon
(339.7 - 6.161914)(1)/(1)(12) = +2.779E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

.17 73g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003289 Date: 06/15/96 Time: 15:02:23

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

Reading	Analysis Time	Coulometer	% Difference
1	0.51	0.90	0.00
2	1.01	52.80	98.30
3	1.51	260.20	79.71
4	2.00	461.00	43.56
5	2.50	667.40	30.93
6	3.00	763.80	12.62
7	3.50	806.10	5.25
8	4.00	828.90	2.75
9	4.50	840.10	1.33
10	5.00	846.10	0.71
11	5.50	850.60	0.53
12	6.00	853.70	0.36
13	6.50	856.10	0.28
14	7.00	857.60	0.17
15	7.50	859.30	0.20
16	8.00	860.30	0.12
17	8.50	861.40	0.13
18	9.00	862.40	0.12
19	9.50	863.40	0.12
20	10.00	864.20	0.09
21	10.50	865.00	0.09
22	11.00	866.00	0.12

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(866 - 31.56667)(1)/(1) = +8.344E+02 g/L Carbon
(866 - 31.56667)(1)/(1)(12) = +6.954E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

.1773g

WHC-SD-WM-DP-156, REV 1B

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3289 DUP Date: 06/15/96 Time: 15:19:45

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .56 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	22.90	97.82
3	1.51	74.30	69.18
4	2.00	129.50	42.63
5	2.50	173.10	25.19
6	3.00	202.10	14.35
7	3.50	219.30	7.84
8	4.00	227.60	3.65
9	4.50	232.10	1.94
10	5.00	234.80	1.15
11	5.50	236.70	0.80
12	6.00	237.80	0.46
13	6.50	239.10	0.54
14	7.00	239.90	0.33
15	7.50	241.00	0.46
16	8.00	242.10	0.45
17	8.50	243.00	0.37
18	9.00	244.00	0.41
19	9.50	245.00	0.41
20	10.00	245.60	0.24
21	10.50	246.40	0.32
22	11.00	247.20	0.32

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 6.158872 micrograms carbon
BLANK FACTOR = 6.158872 / 10.99799 = +5.6E-01 ug/min Carbon

SAMPLE RESULTS:
(247.2 - 6.159932)(1)/(1) = +2.410E+02 g/L Carbon
(247.2 - 6.159932)(1)/(1)(12) = +2.009E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

.1554g

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3289 DUP Date: 06/15/96 Time: 15:39:14

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.87 ug/minute C

Analyst : PJ MCCOWN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	46.80	98.08
3	1.50	200.00	76.60
4	2.00	362.40	44.81
5	2.50	496.40	26.99
6	3.00	559.30	11.25
7	3.50	588.50	4.96
8	4.00	602.50	2.32
9	4.50	609.70	1.18
10	5.00	614.30	0.75
11	5.50	617.50	0.52
12	6.00	620.00	0.40
13	6.50	621.80	0.29
14	7.00	623.30	0.24
15	7.50	624.30	0.16
16	8.00	625.50	0.19
17	8.50	626.60	0.18
18	9.00	627.40	0.13
19	9.50	628.10	0.11
20	10.00	628.60	0.08
21	10.50	629.30	0.11
22	11.00	630.00	0.11

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 31.56422 micrograms carbon
BLANK FACTOR = 31.56422 / 10.99799 = +2.9E+00 ug/min Carbon

SAMPLE RESULTS:
(630 - 31.56387)(1)/(1) = +5.984E+02 g/L Carbon
(630 - 31.56387)(1)/(1)(12) = +4.987E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

.1554g

WORKBOOK PAGE: SAM8

TIC/TOC : LA-342-100 (C-0) **SOLIDS**

			TIC	TOC
	Sample Size in g	(SS)	0.1773	0.1773
SAMPLE	Dilution Factor	(DF)	1	1
	µg of Carbon in Sample	(C1)	339.7	866
9916	µg of Carbon from Baseline	(C2)	6.2	31.6
@TICTOC1				

SOLID

96006095

0

N/A

S96T003289

CARB2

RTS

RWS

PJM

06/17/96

06/15/96

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

		TIC	TOC
	Method Detection Limit in ug/g	5	40
	µg of Carbon/g	1.88E+03	4.71E+03

S-107

Data Entered By:	RTS	Date:	06/17/96
Signature of Chemist:		Date:	

SAMPLE.WB1 REV 1.0 342100ML

RW Schroeder 6/18/96

DATA NOT USED IN PACKAGE

WORKBOOK PAGE: DUP9

TIC/TOC : LA-342-100 (C-0) **SOLIDS**

			TIC	TOC
	Sample Size in g	(SS)	0.1554	0.1554
DUP	Dilution Factor	(DF)	1	1
	µg of Carbon in Sample	(C1)	247.2	630
9916	µg of Carbon from Baseline	(C2)	6.2	31.6
	Known µg of C from Original Sample		1.88E+3	4.71E+3
@TICTOC1				

SOLID

96006095

0

N/A

S96T003289

CARB2

RTS

RWS

PJM

06/17/96

06/15/96

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

		TIC	TOC
Analysis Time	Method Detection Limit in ug/g	5	40
Sample Point	µg of Carbon/g	1.55E+03	3.85E+03
S-107			

Data Entered By:	RTS	Date:	06/17/96
Signature of Chemist:		Date:	

SAMPLE.WB1 REV 1.0 342100ML

RW Schroeder 6/18/96

DATA NOT USED IN PACKAGE

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266 Date: 06/14/96 Time: 22:35:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .74 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	5.10	64.71
3	1.51	29.10	82.47
4	2.01	74.60	60.99
5	2.51	123.10	39.40
6	3.01	162.80	24.39
7	3.50	188.20	13.50
8	4.00	201.00	6.37
9	4.50	207.00	2.90
10	5.00	209.90	1.38
11	5.50	211.70	0.85
12	6.00	213.20	0.70
13	6.50	214.30	0.51
14	7.00	215.40	0.51
15	7.50	216.20	0.37
16	8.00	217.00	0.37
17	8.50	217.70	0.32
18	9.00	218.20	0.23
19	9.50	218.90	0.32
20	10.00	219.40	0.23
21	10.50	220.00	0.27
22	11.00	220.50	0.23

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 8.139187 micrograms carbon
BLANK FACTOR = 8.139187 / 10.9989 = +7.4E-01 ug/min Carbon

SAMPLE RESULTS:
(220.5 - 8.140542)(1)/(1) = +2.124E+02 g/L Carbon
(220.5 - 8.140542)(1)/(1)(12) = +1.770E+01 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266 Date: 06/14/96 Time: 22:48:38

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.27 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	4.20	0.00
2	1.01	22.60	81.42
3	1.50	65.30	65.39
4	2.00	104.20	37.33
5	2.50	119.80	13.02
6	3.00	126.60	5.37
7	3.50	130.10	2.69
8	4.00	132.40	1.74
9	4.50	134.10	1.27
10	5.00	135.40	0.96
11	5.50	136.30	0.66
12	6.00	137.10	0.58
13	6.50	137.70	0.44
14	7.00	138.30	0.43
15	7.50	138.90	0.43
16	8.00	139.40	0.36
17	8.50	139.80	0.29
18	9.00	140.30	0.36
19	9.50	140.70	0.28
20	10.00	141.10	0.28
21	10.50	141.40	0.21
22	11.00	141.80	0.28

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 24.96751 micrograms carbon
BLANK FACTOR = 24.96751 / 10.9989 = +2.3E+00 ug/min Carbon

SAMPLE RESULTS:
(141.8 - 24.96557)(1)/(1) = +1.168E+02 g/L Carbon
(141.8 - 24.96557)(1)/(1)(12) = +9.736E+00 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
JD SPELLMAN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266DUP Date: 06/14/96 Time: 23:01:24

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .74 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	1.90	78.95
3	1.50	41.30	95.40
4	2.00	130.60	68.38
5	2.51	226.80	42.42
6	3.01	304.20	25.44
7	3.51	352.70	13.75
8	4.01	380.10	7.21
9	4.50	394.30	3.60
10	5.00	402.80	2.11
11	5.50	407.40	1.13
12	6.00	410.60	0.78
13	6.50	413.30	0.65
14	7.00	415.30	0.48
15	7.50	417.40	0.50
16	8.00	419.50	0.50
17	8.50	420.90	0.33
18	9.00	422.20	0.31
19	9.50	423.30	0.26
20	10.00	424.30	0.24
21	10.50	425.50	0.28
22	11.00	426.20	0.16

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 8.139187 micrograms carbon
BLANK FACTOR = 8.139187 / 10.9989 = +7.4E-01 ug/min Carbon

SAMPLE RESULTS:
(426.2 - 8.142439)(1)/(1) = +4.181E+02 g/L Carbon
(426.2 - 8.142439)(1)/(1)(12) = +3.484E+01 Molar Carbon

Sample Run By: JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266DUP Date: 06/14/96 Time: 23:16:10

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.27 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	5.70	0.00
2	1.01	61.60	90.75
3	1.51	165.30	62.73
4	2.01	254.00	34.92
5	2.50	288.30	11.90
6	3.00	302.30	4.63
7	3.50	308.50	2.01
8	4.00	311.80	1.06
9	4.50	315.00	1.02
10	5.00	316.80	0.57
11	5.50	318.50	0.53
12	6.00	319.40	0.28
13	6.50	319.90	0.16
14	7.00	320.50	0.19
15	7.50	321.10	0.19
16	8.00	321.80	0.22
17	8.50	322.40	0.19
18	9.00	323.10	0.22
19	9.50	323.60	0.15
20	10.00	324.20	0.19
21	10.50	324.70	0.15
22	11.00	325.30	0.18

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 24.96751 micrograms carbon
BLANK FACTOR = 24.96751 / 10.9989 = +2.3E+00 ug/min Carbon

SAMPLE RESULTS:
(325.3 - 24.96945)(1)/(1) = +3.003E+02 g/L Carbon
(325.3 - 24.96945)(1)/(1)(12) = +2.503E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: JD SPELLMAN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266SPK Date: 06/14/96 Time: 23:31:12

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .74 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	1.30	61.54
3	1.50	3.10	58.06
4	2.00	10.60	70.75
5	2.50	32.30	67.18
6	3.00	78.30	58.75
7	3.50	146.00	46.37
8	4.00	226.60	35.57
9	4.50	306.40	26.04
10	5.00	373.70	18.01
11	5.50	426.80	12.44
12	6.00	464.50	8.12
13	6.50	490.60	5.32
14	7.00	506.50	3.14
15	7.50	517.40	2.11
16	8.00	523.90	1.24
17	8.50	528.70	0.91
18	9.00	532.40	0.69
19	9.50	534.80	0.45
20	10.00	536.90	0.39
21	10.50	538.60	0.32
22	11.00	540.10	0.28

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 8.139187 micrograms carbon
BLANK FACTOR = 8.139187 / 10.9989 = +7.4E-01 ug/min Carbon

SAMPLE RESULTS:
(540.1 - 8.139187)(1)/(1) = +5.320E+02 g/L Carbon
(540.1 - 8.139187)(1)/(1)(12) = +4.433E+01 Molar Carbon

Sample Run By: _____
JD SPELLMAN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: S96T003266SPK Date: 06/15/96 Time: 01:58:01

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.27 ug/minute C

Analyst : JD SPELLMAN
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	35.80	0.00
2	1.01	120.20	70.22
3	1.51	283.20	57.56
4	2.00	391.40	27.64
5	2.50	429.10	8.79
6	3.00	443.80	3.31
7	3.50	450.00	1.38
8	4.00	453.80	0.84
9	4.50	456.60	0.61
10	5.00	458.30	0.37
11	5.50	460.20	0.41
12	6.00	461.90	0.37
13	6.50	463.10	0.26
14	7.00	464.40	0.28
15	7.50	465.80	0.30
16	8.00	466.90	0.24
17	8.50	467.80	0.19
18	9.00	469.00	0.26
19	9.50	469.90	0.19
20	10.00	471.00	0.23
21	10.50	471.90	0.19
22	11.00	472.80	0.19

DATA NOT USED IN PACKAGE

USER INPUT BLANK VALUE
BLANK VALUE = 24.96751 micrograms carbon
BLANK FACTOR = 24.96751 / 10.9989 = +2.3E+00 ug/min Carbon

SAMPLE RESULTS:
(472.8 - 24.96962)(1)/(1) = +4.478E+02 g/L Carbon
(472.8 - 24.96962)(1)/(1)(12) = +3.732E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!>>>>

Sample Run By: JD SPELLMAN 00000

WORKBOOK PAGE: SAM3

TIC/TOC : LA-342-100 (C-0) SOLIDS

			TIC	TOC
	Sample Size in g	(SS)	0.1937	0.1937
SAMPLE	Dilution Factor	(DF)	1	1
	µg of Carbon in Sample	(C1)	220.5	141.8
9915	µg of Carbon from Baseline	(C2)	8.1	25
@TICTOC1				

SOLID

96006094

0

N/A

S96T003266

CARB2

RTS

RWS

JDS

06/17/96

06/15/96

		TIC	TOC
	Method Detection Limit in ug/g	5	40
	µg of Carbon/g	1.10E+03	6.03E+02

S-107

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

Data Entered By:	RTS	Date:	06/17/96
Signature of Chemist:		Date:	

SAMPLE.WB1 REV 1.0 342100ML

RW Schroeder 6/18/96

DATA NOT USED IN PACKAGE

WORKBOOK PAGE: DUP4

TIC/TOC : LA-342-100 (C-0) **SOLIDS**

			TIC	TOC
	Sample Size in g	(SS)	0.3963	0.3963
DUP	Dilution Factor	(DF)	1	1
	µg of Carbon in Sample	(C1)	426.2	325.3
9915	µg of Carbon from Baseline	(C2)	8.1	25
	Known µg of C from Original Sample		1.10E+3	6.03E+2
@TICTOC1				

SOLID

96006094

0

µg of Carbon/g = (C1-C2) * DF / SS
µg of Carbon/g for TIC = 5 if C1 < C2
µg of Carbon/g for TOC = 40 if C1 < C2

N/A

S96T003266

CARB2

RTS

RWS

JDS

06/17/96

06/15/96

		TIC	TOC
	Method Detection Limit in ug/g	5	40
	µg of Carbon/g	1.06E+03	7.58E+02

S-107

Data Entered By:	RTS	Date:	06/17/96
Signature of Chemist:		Date:	

SAMPLE.WB1 REV 1.0 342100ML

RW Schroeder 6/18/96

DATA
NOT USED
IN PACKAGE

WORKBOOK PAGE: SPIKE5

TIC/TOC : LA-342-100 (C-0) SOLIDS

	Sample Vial Data		TIC	TOC
SPK	Sample Size in g	(SS)	0.1937	0.1937
	Final Coulometer Reading in µg	(C1)	220.5	141.8
9915	Spiked Vial Data			
	Sample Size in g	(SPK SS)	0.2305	0.2305
@TICTOC1	Amount of Spike Std. in mL	(SPK VOL)	0.500	0.100
	Final Coulometer Reading in µg	(C3)	540.1	472.8
SOLID	Spike Book Number		22N12B	24N12A
	Spike Standard Value in µg/ml		602	3000
96006094	Spike Concentration in µg	(SPK CONC)	301	300

0

Spike Concentration in µg = (Spike Std. Value in µg/mL)*(SPK VOL)

N/A

Percent Spike Recovery = (C3) / [(C1/SS * SPK SS) + (SPK CONC)] * 100

S96T003266

QC Actual in µg/mL = Spike Value (µg/mL)

CARB2

QC Found in µg/mL = (Percent Spike Recovery)*(QC Actual) / 100

RTS

RWS

JDS

06/17/96

06/15/96

		TIC	TOC
	QC Actual in µg/mL	6.02E+02	3.00E+03
	QC Found in µg/mL	5.77E+02	3.03E+03
S-107	Percent Spike Recovery	95.9	100.9

Data Entered By:	RTS	Date:	06/17/96
Signature of Chemist:		Date:	

SPIKE.WB1 REV 1.0 342100ML

Robert Schroeck 6/18/96

DATA
NOT USED
IN PACKAGE

LABCORE Data Entry Template for Worklist# 10085

Analyst: JK Sato **Instrument:** ICP01 **Book#** 54848B

Method: LA-505-151/~~161~~ Rev/Mod D-3
JK 6-4-96

Worklist Comment: ICP S-107 (SOLID WATER DIGEST)

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	LLS				@ICP-QC	QC		
4	ICSA				@ICP-QC	QC		
5	ICSAB				@ICP-QC	QC		
6	PREPBLKARL				@ICP-I01	SOLID		
7	SERDIL	S96T003276	0	I	@ICP-I01	SOLID		
8	SAMPLE	S96T003276	0	I	@ICP-I01	SOLID	95000141	S-107
	Analytes Requested:	AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 , MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01						
9	DUP	S96T003276	0	I	@ICP-I01	SOLID		
10	SPK	S96T003276	0	I	@ICP-I01	SOLID		
11	CCV				@ICP-QC	QC		
12	CCB				@ICP-QC	QC		
13	SERDIL	S96T003277	0	I	@ICP-I01	SOLID		
14	SAMPLE	S96T003277	0	I	@ICP-I01	SOLID	95000141	S-107
	Analytes Requested:	AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 ,						

Data Entry Comments: Sample result calculation:

S96T003276 $C_x = 3.928 \frac{ug}{ml} \times \frac{1}{2.826 \frac{g}{L} \times \frac{1L}{1000ml}} = 1.39e+3 \frac{ug}{g}$

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Note: $2.826 \frac{g}{L}$ is sample prep dilution factor which can be found in sample prep worklist.

06/19/96 13:39
A-0004-1

LABCORE Data Entry Template for Worklist# 10085

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
					MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01			
15	DUP	S96T003277	0	I	@ICP-I01	SOLID		
16	SPK	S96T003277	0	I	@ICP-I01	SOLID		
17	ICSA				@ICP-QC	QC		
18	ICSAB				@ICP-QC	QC		
19	CCV				@ICP-QC	QC		
20	CCB				@ICP-QC	QC		

Final page for worklist # 10085

JK Lato 06-24-96
Analyst Signature Date

Reviewed by: Saul M. Pang 6/24/96
Analyst Signature Date

PrepblkGrL, direct, DF1
S96T003276_L, 4-4-2-8, DF10
S96T003276 4-4 2
S96T003276_D 4-4 2
S96T003276_Q 4-4 2, 4 ml sample + 1.6 ml SSTS + 2.4 ml HNO_3
S96T003277_L, 2-4-2-8, DF20
S96T003277 2-4 4
S96T003277_D 2-4 4
S96T003277_Q 2-4 4, 2 ml sample + 1.6 ml SSTS + 4.4 ml HNO_3

Data Entry Comments: Spike recovery calculation:

S96T003276 $Cr = \left(\frac{6.002}{2}\right) - \left(\frac{3.928}{2}\right) \times 100 = 103.7\%$

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Note: Spike true value is 1.0 ppm for all elements except for U = 2.0 ppm.

File #: 960620

WHC-SD-WM-DP-156, REV. 1B

Identity 1: ICV Identity 2: Quality Control 8:31 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.989	5.045	5.013	4.832	4.971	5.103	5.094	5.040
S.D.	0.006	0.005	0.009	0.007	0.010	0.023	0.006	0.031
% R.S.D.	0.115	0.107	0.184	0.138	0.211	0.443	0.123	0.619

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.137	5.061	5.067	5.115	5.160	5.092	5.207	9.720
S.D.	0.005	0.007	0.024	0.015	0.005	0.020	0.001	0.006
% R.S.D.	0.096	0.145	0.481	0.296	0.096	0.397	0.010	0.063

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.124	5.097	5.059	4.797	4.883	5.007	5.125	5.001
S.D.	0.002	0.002	0.005	0.304	0.136	0.014	0.023	0.030
% R.S.D.	0.044	0.048	0.094	6.342	2.786	0.283	0.443	0.607

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	5.093	5.429	4.959	5.076	4.950	5.067	5.106	5.024
S.D.	0.003	0.020	0.005	0.023	0.009	0.015	0.002	0.025
% R.S.D.	0.061	0.374	0.109	0.453	0.188	0.294	0.048	0.494

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.072	4.689	5.090	5.215	4.870
S.D.	0.018	0.023	0.015	0.008	0.011
% R.S.D.	0.357	0.490	0.294	0.157	0.223

JK
06-24-96
5-107 596T003276
596T003277
Worklist # 10085

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 2559 TO 2577

Identity 1: ICB Identity 2: Quality Control 8:34 PM June 21, 1996

WHC-SD-WM-DP-156, REV. 16

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.001	0.008	-0.000	-0.005	-0.000	-0.002	0.001
S.D.	0.001	0.000	0.008	0.002	0.004	0.000	0.000	0.000
% R.S.D.	208.178	42.131	103.446	996.042	76.533	212.205	10.084	44.843

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	0.002	0.001	-0.001	0.001	0.003	0.020	0.012
S.D.	0.000	0.001	0.001	0.003	0.000	0.002	0.002	0.025
% R.S.D.	15.698	74.832	85.886	602.191	35.342	58.978	7.863	210.543

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.000	-0.007	0.001	0.028	-0.005	0.001	-0.005	0.002
S.D.	0.008	0.004	0.000	0.010	0.004	0.000	0.005	0.002
% R.S.D.	2299.671	59.951	42.198	34.046	75.370	32.476	117.529	100.018

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	-0.062	0.002	-0.025	0.000	0.002	0.006	0.095
S.D.	0.000	0.006	0.001	0.008	0.000	0.000	0.001	0.014
% R.S.D.	19.145	9.677	58.219	31.481	75.003	17.542	16.768	14.245

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	0.037	0.002	0.001	-0.012
S.D.	0.001	0.005	0.001	0.000	0.011
% R.S.D.	45.989	14.653	29.818	35.494	92.339

Identity 1: LLS Identity 2: Quality Control 8:37 PM June 21, 1996

WHC-SD-WM-DP-156, REV. 16

Task name : OPTIMA

Sample Weight : 1.0000 Solution Volume : 1.00

On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.022	0.021	0.195	0.135	0.098	0.037	0.017	0.020
S.D.	0.001	0.000	0.017	0.002	0.004	0.002	0.000	0.000
% R.S.D.	3.946	0.179	8.959	1.115	4.191	5.099	0.892	0.736

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.022	0.041	0.106	0.108	0.220	0.019	0.208	0.472
S.D.	0.000	0.002	0.002	0.002	0.000	0.001	0.009	0.013
% R.S.D.	1.413	4.340	2.073	1.769	0.186	6.821	4.329	2.756

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.187	0.214	0.102	0.412	0.200	0.213	0.195	0.195
S.D.	0.002	0.002	0.000	0.019	0.007	0.001	0.006	0.000
% R.S.D.	1.243	1.065	0.214	4.680	3.269	0.262	3.248	0.000

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.102	0.194	0.018	0.202	0.020	0.009	0.110	0.608
S.D.	0.001	0.016	0.000	0.005	0.000	0.001	0.001	0.009
% R.S.D.	0.666	8.174	0.556	2.244	2.098	7.406	0.685	1.531

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.018	0.093	0.103	0.011	0.375
S.D.	0.000	0.004	0.001	0.000	0.003
% R.S.D.	0.006	4.080	0.800	1.225	0.739

Identity 1: ICSA Identity 2: Quality Control 8:40 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

WHC-SD-WM-DP-156, REV. 18

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.002	-0.013	0.020	202.054	0.001	-0.002	-0.000
S.D.	0.001	0.000	0.011	0.003	0.766	0.003	0.000	0.000
% R.S.D.	105.696	6.788	80.558	14.612	0.379	220.691	7.421	230.784

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.004	0.005	-0.000	95.638	99.495	-0.000	-0.005	-0.007
S.D.	0.001	0.001	0.002	0.147	0.338	0.003	0.007	0.058
% R.S.D.	15.904	24.922	466.438	0.154	0.339	31055.496	152.868	841.052

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.015	0.014	0.003	0.030	-0.007	97.317	0.013	193.303
S.D.	0.012	0.014	0.000	0.001	0.003	0.634	0.003	1.473
% R.S.D.	79.329	97.602	5.081	1.920	44.129	0.652	24.897	0.762

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.000	-0.044	0.000	-0.020	-0.000	-0.001	0.013	-0.005
S.D.	0.001	0.009	0.001	0.007	0.000	0.000	0.000	0.013
% R.S.D.	404.100	20.727	358.907	32.416	83.819	29.090	3.024	264.620

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.012	-0.015	-0.001	0.003	-0.048
S.D.	0.000	0.008	0.001	0.000	0.029
% R.S.D.	2.834	51.223	60.301	4.564	59.244

Identity 1: ICSAB Identity 2: Quality Control 8:43 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.002	0.002	-0.003	0.020	200.923	0.506	0.507	0.927
S.D.	0.001	0.000	0.001	0.004	0.227	0.002	0.001	0.003
% R.S.D.	50.541	4.902	46.517	20.324	0.113	0.371	0.265	0.375

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.019	1.001	0.002	97.749	99.354	0.520	0.025	-0.020
S.D.	0.002	0.006	0.004	0.164	0.104	0.002	0.004	0.023
% R.S.D.	0.221	0.589	193.355	0.168	0.105	0.460	14.124	118.342

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.024	0.023	0.516	0.044	0.015	97.853	0.023	189.778
S.D.	0.013	0.009	0.000	0.004	0.010	0.222	0.004	0.478
% R.S.D.	51.447	37.553	0.022	9.011	66.447	0.227	17.522	0.252

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.000	-0.062	1.046	1.005	-0.001	1.020	0.015	0.077
S.D.	0.001	0.012	0.001	0.005	0.000	0.002	0.002	0.011
% R.S.D.	895.170	19.831	0.051	0.546	50.411	0.176	10.523	13.976

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.524	-0.008	0.509	0.509	0.021
S.D.	0.001	0.008	0.001	0.001	0.025
% R.S.D.	0.109	102.518	0.149	0.237	120.917

Identity 1: PREPBLK Identity 2: Quality Control 8:46 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.005	0.001	0.017	0.591	0.142	-0.004	0.008	0.000
S.D.	0.000	0.000	0.002	0.001	0.018	0.002	0.000	0.000
% R.S.D.	2.662	7.391	11.738	0.085	12.541	43.070	2.685	47.211

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.006	0.003	0.002	0.013	0.298	-0.002	-0.000	0.160
S.D.	0.000	0.001	0.001	0.006	0.006	0.001	0.006	0.027
% R.S.D.	3.547	44.320	42.837	45.852	1.916	66.476	84061.137	16.553

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.027	0.009	0.004	0.028	0.081	0.109	-0.006	2.661
S.D.	0.003	0.007	0.000	0.007	0.003	0.006	0.004	0.040
% R.S.D.	9.604	82.283	3.268	24.061	3.575	5.480	59.791	1.507

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	-0.001	-0.019	-0.003	-0.013	0.004	-0.001	2.309	0.185
S.D.	0.001	0.007	0.000	0.008	0.000	0.001	0.004	0.005
% R.S.D.	74.160	38.905	6.813	59.445	3.172	69.391	0.152	2.763

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.002	0.002	-0.001	0.000	-0.055
S.D.	0.000	0.016	0.001	0.000	0.005
% R.S.D.	19.769	705.254	90.209	139.372	10.012

Identity 1: S96T003276_L Identity 2: 4-4-2-8 ml 8:50 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 10.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.009	0.002	0.167	0.578	13.093	0.000	-0.004	-0.000
S.D.	0.009	0.001	0.133	0.016	0.050	0.000	0.002	0.004
% R.S.D.	108.228	30.000	79.800	2.697	0.381	85.517	50.461	15274.375

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.007	0.016	-0.033	0.069	0.223	3.808	0.187	-0.085
S.D.	0.003	0.012	0.036	0.031	0.006	0.018	0.007	0.297
% R.S.D.	43.951	77.285	108.097	45.778	2.662	0.471	3.710	349.722

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.000	-0.114	0.005	26.976	2.117	0.038	-0.066	319.594
S.D.	0.059	0.080	0.002	0.576	0.032	0.005	0.010	2.209
% R.S.D.	43071.181	70.199	50.037	2.136	1.525	12.177	15.593	0.691

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Tl (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.079	-0.175	0.010	-0.077	-0.005	0.004	2.733	2.280
S.D.	0.004	0.120	0.005	0.060	0.002	0.005	0.027	0.199
% R.S.D.	5.437	68.531	54.290	77.358	38.783	120.365	0.978	8.709

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.008	-0.152	0.031	0.001	0.186
S.D.	0.004	0.285	0.005	0.001	0.190
% R.S.D.	42.805	187.096	17.730	209.389	101.796

Identity 1: S96T003276 Identity 2: 4-4 ml 8:54 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.010	0.002	0.002	0.562	13.183	0.002	0.013	0.003
S.D.	0.000	0.000	0.011	0.006	0.014	0.004	0.001	0.000
% R.S.D.	4.166	3.396	428.424	1.107	0.108	172.030	5.408	8.407

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.007	0.023	-0.006	0.069	0.207	3.928	0.062	0.140
S.D.	0.000	0.003	0.003	0.002	0.001	0.020	0.008	0.017
% R.S.D.	1.459	14.552	50.602	2.296	0.713	0.519	13.504	12.370

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.080	0.023	0.006	27.426	2.121	0.014	-0.012	307.396
S.D.	0.003	0.002	0.000	0.831	0.055	0.002	0.007	1.162
% R.S.D.	3.224	7.730	3.630	3.031	2.613	12.436	61.530	0.378

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.073	-0.045	0.005	0.006	0.000	0.002	2.688	2.439
S.D.	0.002	0.029	0.001	0.031	0.000	0.000	0.004	0.020
% R.S.D.	2.538	63.314	13.231	560.412	91.943	13.428	0.136	0.838

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.007	-0.020	0.025	0.001	0.038
S.D.	0.000	0.011	0.002	0.000	0.017
% R.S.D.	4.956	55.520	9.328	32.941	43.777

Identity 1: S96T003276_D Identity 2: 4-4 ml 8:57 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.018	0.002	0.027	1.751	11.786	-0.007	0.008	-0.000
S.D.	0.002	0.000	0.018	0.002	0.016	0.000	0.000	0.000
% R.S.D.	9.056	8.108	66.279	0.139	0.133	0.118	5.880	207.649

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.012	0.023	0.005	0.058	0.209	3.424	0.001	0.249
S.D.	0.001	0.003	0.002	0.006	0.001	0.012	0.001	0.060
% R.S.D.	4.923	11.735	33.465	9.831	0.428	0.345	94.593	23.986

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.020	0.005	0.004	58.956	1.909	0.027	0.013	355.089
S.D.	0.010	0.006	0.000	1.311	0.023	0.001	0.007	0.878
% R.S.D.	52.213	138.259	5.258	2.223	1.229	2.046	55.544	0.247

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.064	-0.071	-0.001	0.026	0.003	0.002	2.565	2.054
S.D.	0.002	0.019	0.001	0.028	0.000	0.001	0.005	0.016
% R.S.D.	3.352	27.190	98.140	109.589	11.024	51.333	0.209	0.769

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.005	0.059	0.035	0.000	-0.045
S.D.	0.000	0.058	0.003	0.000	0.028
% R.S.D.	0.123	98.623	7.840	72.883	63.281

Identity 1: S96T003276_A Identity 2: 4sam+1.6sst5+2.4hno3 9:00 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	2.028	2.036	2.050	2.738	15.133	2.108	2.067	1.888
S.D.	0.003	0.000	0.011	0.019	0.019	0.014	0.006	0.019
% R.S.D.	0.159	0.024	0.545	0.694	0.123	0.644	0.272	0.996

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	2.110	2.091	2.045	2.147	2.287	6.002	2.103	3.853
S.D.	0.004	0.007	0.017	0.010	0.008	0.010	0.021	0.033
% R.S.D.	0.189	0.352	0.819	0.450	0.331	0.173	0.981	0.854

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	2.115	1.983	2.029	28.310	4.051	2.065	2.087	304.344
S.D.	0.021	0.007	0.002	0.982	0.058	0.003	0.005	2.651
% R.S.D.	0.981	0.340	0.117	3.467	1.432	0.165	0.259	0.871

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	2.150	2.129	2.037	2.091	2.003	2.062	4.704	4.200
S.D.	0.020	0.021	0.003	0.013	0.004	0.001	0.016	0.061
% R.S.D.	0.923	0.974	0.123	0.626	0.183	0.065	0.338	1.444

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	2.089	1.934	2.098	2.094	1.952
S.D.	0.004	0.015	0.002	0.004	0.040
% R.S.D.	0.180	0.786	0.100	0.196	2.042

Identity 1: CCV Identity 2: Quality Control 9:05 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.039	5.084	5.078	4.896	5.007	5.207	5.102	4.989
S.D.	0.011	0.011	0.015	0.004	0.007	0.003	0.011	0.033
% R.S.D.	0.214	0.215	0.291	0.090	0.145	0.063	0.206	0.667

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.223	5.139	5.109	5.180	5.186	5.192	5.191	9.738
S.D.	0.008	0.021	0.012	0.020	0.013	0.017	0.027	0.021
% R.S.D.	0.145	0.400	0.233	0.378	0.257	0.336	0.524	0.221

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.180	5.106	5.082	4.933	4.995	5.100	5.176	4.988
S.D.	0.012	0.008	0.012	0.165	0.061	0.012	0.014	0.031
% R.S.D.	0.240	0.149	0.234	3.342	1.215	0.232	0.269	0.613

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	5.184	5.473	5.029	5.183	5.003	5.137	5.147	5.016
S.D.	0.018	0.008	0.008	0.008	0.010	0.018	0.008	0.057
% R.S.D.	0.347	0.145	0.151	0.162	0.196	0.354	0.157	1.132

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.142	4.716	5.157	5.260	4.907
S.D.	0.010	0.078	0.012	0.007	0.030
% R.S.D.	0.194	1.656	0.225	0.135	0.614

Identity 1: CCB Identity 2: Quality Control 9:09 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	0.001	0.026	0.004	0.007	-0.005	-0.002	0.000
S.D.	0.002	0.001	0.010	0.002	0.003	0.002	0.001	0.001
% R.S.D.	745.542	88.695	37.609	52.767	39.345	34.602	46.064	150.003

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	0.003	-0.001	-0.003	0.001	-0.001	0.004	-0.098
S.D.	0.000	0.001	0.003	0.004	0.000	0.002	0.003	0.072
% R.S.D.	17.270	25.797	301.190	129.494	45.621	161.636	66.145	73.744

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.009	-0.009	0.001	-0.004	0.006	0.001	-0.006	0.010
S.D.	0.018	0.012	0.001	0.002	0.003	0.001	0.004	0.007
% R.S.D.	201.374	136.530	106.826	59.593	57.717	48.218	68.867	65.458

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.003	0.001	-0.018	0.001	-0.001	0.006	0.057
S.D.	0.000	0.002	0.001	0.008	0.001	0.001	0.001	0.011
% R.S.D.	28.860	80.678	210.140	46.608	133.752	184.693	16.163	18.955

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.002	-0.023	0.003	0.001	0.005
S.D.	0.000	0.014	0.002	0.001	0.035
% R.S.D.	20.134	63.614	51.933	86.666	692.056

Identity 1: S96T003277_L Identity 2: 2-6-2-8 ml 9:12 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 20.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.157	0.005	0.390	4.008	10.949	0.022	0.018	0.056
S.D.	0.013	0.001	0.130	0.123	0.218	0.038	0.010	0.001
% R.S.D.	8.285	31.492	33.189	3.061	1.987	172.820	58.290	1.432

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.038	0.087	-0.067	0.018	0.127	6.866	0.198	-0.064
S.D.	0.011	0.038	0.017	0.023	0.001	0.078	0.178	0.328
% R.S.D.	28.870	43.976	24.934	126.660	1.158	1.140	89.848	509.538

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.594	-0.406	0.011	44.519	2.864	0.051	-0.039	810.706
S.D.	0.149	0.064	0.001	0.497	0.086	0.002	0.085	2.756
% R.S.D.	25.049	15.775	11.152	1.117	2.986	4.124	221.049	0.340

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.155	-1.426	0.031	-0.219	0.005	-0.011	1.923	5.068
S.D.	0.023	0.148	0.003	0.201	0.011	0.006	0.045	0.147
% R.S.D.	14.913	10.382	11.183	91.891	239.576	57.739	2.318	2.908

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.025	0.378	0.044	0.012	0.349
S.D.	0.009	0.117	0.022	0.005	0.219
% R.S.D.	37.887	31.051	49.828	37.934	62.609

Identity 1: S96T003277 Identity 2: 2-6 ml 9:15 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 4.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.153	0.000	0.027	5.154	10.879	-0.004	0.008	0.042
S.D.	0.004	0.001	0.002	0.043	0.006	0.008	0.003	0.001
% R.S.D.	2.659	150.000	8.892	0.830	0.051	173.461	36.890	1.992

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.014	0.068	0.000	0.037	0.238	6.952	0.061	0.257
S.D.	0.003	0.013	0.006	0.008	0.001	0.012	0.020	0.251
% R.S.D.	21.641	19.306	5447.908	20.271	0.555	0.178	33.350	97.410

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.016	0.020	0.002	45.405	2.847	0.018	0.009	786.313
S.D.	0.045	0.047	0.001	0.955	0.032	0.000	0.015	7.632
% R.S.D.	282.903	241.465	45.621	2.103	1.129	0.000	164.365	0.971

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.112	-0.108	-0.005	0.014	0.005	-0.006	1.839	3.544
S.D.	0.001	0.018	0.004	0.029	0.003	0.002	0.006	0.017
% R.S.D.	0.813	16.662	90.457	197.530	54.150	40.680	0.307	0.481

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.005	-0.141	0.002	0.000	-0.028
S.D.	0.001	0.067	0.005	0.001	0.112
% R.S.D.	15.130	47.382	213.696	235.736	400.700

Identity 1: S96T003277_D Identity 2: 2-6 ml 9:18 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 4.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.086	0.001	0.030	11.639	32.015	0.009	0.014	0.035
S.D.	0.004	0.000	0.026	0.038	0.034	0.008	0.001	0.001
% R.S.D.	4.972	30.000	85.221	0.330	0.106	86.122	4.427	2.761

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.013	0.061	-0.019	0.014	0.128	7.373	0.073	-0.001
S.D.	0.000	0.005	0.009	0.005	0.000	0.018	0.027	0.105
% R.S.D.	3.027	8.911	45.845	32.887	0.133	0.239	37.049	8123.408

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.073	-0.173	0.005	5.915	2.970	0.024	-0.030	758.943
S.D.	0.039	0.026	0.000	0.175	0.062	0.000	0.014	1.555
% R.S.D.	53.707	14.865	8.723	2.964	2.083	1.767	45.818	0.205

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.120	0.027	0.003	0.098	0.005	-0.000	2.389	3.705
S.D.	0.002	0.041	0.001	0.054	0.000	0.002	0.014	0.057
% R.S.D.	1.740	150.797	31.887	55.154	8.871	513.746	0.604	1.532

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.003	-0.158	0.007	0.001	0.036
S.D.	0.001	0.063	0.001	0.001	0.041
% R.S.D.	27.298	39.963	20.668	72.419	114.716

Identity 1: S96T003277_A Identity 2: 2sam+1.6sst5+4.4hno3 9:21 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 4.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.183	4.044	4.010	9.414	14.756	4.186	4.072	3.775
S.D.	0.002	0.005	0.068	0.003	0.042	0.023	0.014	0.018
% R.S.D.	0.043	0.124	1.686	0.035	0.283	0.540	0.342	0.478

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.201	4.166	4.089	4.151	4.184	11.190	4.168	7.890
S.D.	0.007	0.007	0.009	0.026	0.006	0.017	0.012	0.059
% R.S.D.	0.178	0.178	0.213	0.623	0.134	0.153	0.293	0.744

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.093	4.043	4.014	49.651	6.893	4.107	4.147	782.338
S.D.	0.017	0.022	0.005	0.460	0.019	0.004	0.060	4.165
% R.S.D.	0.414	0.547	0.135	0.926	0.279	0.109	1.455	0.532

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	4.272	4.260	3.612	4.155	3.993	4.111	5.858	7.558
S.D.	0.018	0.104	0.013	0.029	0.004	0.008	0.015	0.071
% R.S.D.	0.425	2.452	0.350	0.693	0.109	0.193	0.255	0.938

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	4.138	3.796	4.149	4.117	3.695
S.D.	0.011	0.072	0.007	0.008	0.028
% R.S.D.	0.269	1.904	0.169	0.186	0.747

Identity 1: ICSA Identity 2: Quality Control 9:27 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.003	0.002	-0.022	0.025	200.586	-0.001	-0.000	0.001
S.D.	0.001	0.000	0.001	0.005	0.566	0.002	0.001	0.000
% R.S.D.	32.860	5.626	6.352	22.240	0.282	257.887	204.956	21.078

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.005	0.007	-0.000	96.680	99.842	0.007	0.034	0.056
S.D.	0.001	0.002	0.001	0.077	0.120	0.002	0.007	0.046
% R.S.D.	15.714	31.036	342.086	0.080	0.120	31.050	20.087	82.679

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.045	0.016	0.004	0.049	0.008	98.525	0.016	189.051
S.D.	0.010	0.007	0.000	0.009	0.016	0.347	0.003	0.863
% R.S.D.	23.018	46.054	3.635	17.466	205.010	0.352	20.630	0.457

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Tl (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.077	0.006	-0.000	0.001	0.001	0.015	0.081
S.D.	0.001	0.006	0.000	0.015	0.000	0.001	0.001	0.021
% R.S.D.	102.330	7.974	6.088	3075.839	49.143	49.542	8.175	26.243

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.012	-0.028	0.003	0.003	-0.012
S.D.	0.000	0.011	0.001	0.000	0.013
% R.S.D.	2.785	41.093	34.531	0.183	104.191

Identity 1: ICSAB Identity 2: Quality Control 9:30 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.005	0.002	0.004	0.021	201.488	0.509	0.507	0.925
S.D.	0.001	0.000	0.006	0.002	0.914	0.002	0.002	0.005
% R.S.D.	22.267	5.357	166.266	8.972	0.453	0.370	0.426	0.564

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.029	1.009	0.004	98.523	99.989	0.520	0.021	-0.100
S.D.	0.001	0.010	0.002	0.240	0.370	0.002	0.005	0.038
% R.S.D.	0.063	1.028	66.658	0.244	0.370	0.422	24.090	37.858

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.001	0.052	0.518	0.051	0.015	99.128	0.022	189.748
S.D.	0.012	0.006	0.002	0.008	0.009	0.129	0.008	0.982
% R.S.D.	948.297	11.379	0.465	15.602	63.373	0.130	37.055	0.517

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.001	0.002	1.053	1.020	-0.000	1.025	0.017	0.109
S.D.	0.001	0.026	0.002	0.003	0.001	0.006	0.001	0.027
% R.S.D.	155.522	1504.349	0.164	0.328	160.093	0.538	6.428	25.201

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.527	-0.031	0.512	0.512	-0.019
S.D.	0.001	0.013	0.001	0.002	0.023
% R.S.D.	0.165	42.277	0.189	0.436	120.878

Identity 1: CCV Identity 2: Quality Control 9:35 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.036	5.084	5.057	4.869	4.995	5.159	5.105	4.955
S.D.	0.006	0.016	0.006	0.002	0.016	0.015	0.012	0.022
% R.S.D.	0.118	0.312	0.121	0.042	0.323	0.299	0.240	0.445

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.190	5.124	5.113	5.172	5.190	5.158	5.267	9.770
S.D.	0.011	0.008	0.003	0.009	0.009	0.005	0.030	0.011
% R.S.D.	0.210	0.163	0.056	0.165	0.176	0.090	0.561	0.115

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.207	5.110	5.086	4.878	4.945	5.073	5.177	4.960
S.D.	0.024	0.012	0.015	0.107	0.097	0.012	0.009	0.023
% R.S.D.	0.461	0.226	0.285	2.185	1.962	0.243	0.177	0.460

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	5.152	5.433	5.012	5.145	4.984	5.118	5.137	4.993
S.D.	0.024	0.046	0.007	0.018	0.013	0.004	0.020	0.038
% R.S.D.	0.470	0.850	0.146	0.350	0.264	0.083	0.386	0.769

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.126	4.770	5.142	5.251	4.915
S.D.	0.007	0.028	0.005	0.006	0.010
% R.S.D.	0.128	0.580	0.102	0.111	0.210

WHC-SD-WM-DP-156, REV. 1B

Identity 1: CCB Identity 2: Quality Control 9:39 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.000	0.001	0.000	-0.001	0.002	-0.002	-0.000
S.D.	0.001	0.000	0.004	0.001	0.002	0.002	0.000	0.000
% R.S.D.	71.453	24.744	282.844	179.358	161.493	86.885	5.499	606.245

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.000	0.001	0.002	0.001	0.001	0.002	0.016	0.037
S.D.	0.000	0.001	0.001	0.003	0.000	0.003	0.003	0.023
% R.S.D.	32.641	49.413	42.395	352.633	8.985	150.546	17.152	60.261

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.011	0.014	0.000	0.011	-0.003	0.001	-0.004	0.016
S.D.	0.010	0.004	0.000	0.008	0.004	0.000	0.004	0.003
% R.S.D.	90.212	28.617	227.156	71.352	150.128	11.547	112.583	15.751

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	-0.043	0.001	-0.014	-0.000	-0.000	0.004	0.127
S.D.	0.001	0.004	0.000	0.018	0.000	0.001	0.001	0.013
% R.S.D.	80.064	9.882	75.337	126.295	505.280	604.523	29.740	9.931

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.002	-0.024	0.001	0.001	-0.001
S.D.	0.000	0.025	0.000	0.000	0.011
% R.S.D.	0.154	104.152	53.024	25.060	1036.804

DK Lo
06-21-96

WHC-SD-WM-DP-156, REV. 1B

06/19/96 13:43
A-0004-1

File #: 960621C, ~~FIT~~ JAT 6-4-96

LABCORE Data Entry Template for Worklist# 10087

Analyst: MSG/U **Instrument:** ICP01 6-21-96 **Book#** 56B48B

Method: LA-505-~~151/161~~ 151 JAT 6-4-96 Rev/Mod ~~B-D~~ D-3 6-21-96 6-21-96

Worklist Comment: ICP S-107 (SOLID WATER DIGEST)

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	LLS				@ICP-QC	QC		
4	ICSA				@ICP-QC	QC		
5	ICSAB				@ICP-QC	QC		
6	PREPBLK ~~TJA~~ GRL 6-21-96				@ICP-I01	SOLID		
7	SERDIL	S96T003278	0	I	@ICP-I01	SOLID		
8	SAMPLE	S96T003278	0	I	@ICP-I01	SOLID	95000141	S-107
	Analytes Requested:	AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 , MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01						
9	DUP	S96T003278	0	I	@ICP-I01	SOLID		
10	SPK	S96T003278	0	I	@ICP-I01	SOLID		
11	CCV				@ICP-QC	QC		
12	CCB				@ICP-QC	QC		
13	SERDIL	S96T003279	0	I	@ICP-I01	SOLID		
14	SAMPLE	S96T003279	0	I	@ICP-I01	SOLID	95000141	S-107
	Analytes Requested:	AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 ,						

Data Entry Comments: Sample result calculation:

S96T003278 ~~$C_x = \left(\frac{5.552}{L}\right)$~~ $C_x = 5.552 \frac{ug}{mL} \times \frac{1}{5.213 \frac{g}{L} \times \frac{mL}{1000 mL}} = 1.07e+3 \frac{ug}{g}$

SG 6/24/96

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Note: 5.213 $\frac{g}{L}$ is sample prep dilution factor which can be found in sample prep worklist.

25713

LABCORE Data Entry Template for Worklist# 10087

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
					MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01			
15	DUP	S96T003279	0	I	@ICP-I01	SOLID		
16	SPK	S96T003279	0	I	@ICP-I01	SOLID		
17	ICSA				@ICP-QC	QC		
18	ICSAB				@ICP-QC	QC		
19	CCV				@ICP-QC	QC		
20	CCB				@ICP-QC	QC		

Final page for worklist # 10087

DK Scott 06-21-96
Analyst Signature Date

Reviewed by: Saul R. Pavey 6/24/96
Analyst Signature Date

prepblkTJQ, direct, DF1
S96T003278_L, 4-4-2-8, DF10
S96T003278 4-4 2
S96T003278_D 4-4 2
S96T003278_Q 4-4 2, 4 ml sample + 1.6 ml SSTS + 2.4 ml HNO_3
S96T003279_L, 2-8, DF5
S96T003279 direct 1
S96T003279_D direct 1
S96T003279_Q direct 1.24, 5 ml sample + 1.2 ml SSTS

Data Entry Comments: Spike recovery calculation:

S96T003278 $Cr = \frac{\left(\frac{7.596}{2}\right) - \left(\frac{5.512}{2}\right)}{1} \times 100 = 102.2\%$

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Note: Spike true value is 1.0 ppm for all elements except for U = 2.0 ppm.

Identity 1: ICB Identity 2: Quality Control 6:45 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.004	0.002	0.001	0.005	-0.006	0.001	-0.000	0.001
S.D.	0.001	0.001	0.009	0.002	0.005	0.002	0.001	0.001
% R.S.D.	29.935	46.153	624.089	45.326	91.134	174.383	251.705	70.053

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.002	0.002	0.001	0.003	0.003	0.001	0.006	0.080
S.D.	0.001	0.002	0.002	0.003	0.001	0.001	0.007	0.047
% R.S.D.	27.116	110.689	170.030	85.655	34.431	152.717	106.256	57.868

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.008	0.008	0.002	0.023	-0.003	0.003	0.003	-0.006
S.D.	0.011	0.009	0.001	0.002	0.004	0.001	0.005	0.005
% R.S.D.	148.426	115.025	59.529	8.927	135.546	36.252	162.908	78.055

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	-0.044	0.000	0.015	0.003	0.001	0.006	0.055
S.D.	0.000	0.013	0.001	0.011	0.001	0.000	0.001	0.019
% R.S.D.	22.206	29.579	1993.387	70.420	32.302	50.924	12.983	34.200

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.000	-0.008	0.002	0.003	-0.029
S.D.	0.001	0.019	0.001	0.001	0.027
% R.S.D.	532.719	240.501	35.161	37.920	93.051

Identity 1: LLS Identity 2: Quality Control 6:49 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.020	0.021	0.204	0.105	0.094	0.039	0.018	0.021
S.D.	0.001	0.000	0.007	0.001	0.010	0.000	0.000	0.000
% R.S.D.	4.600	0.359	3.503	1.382	10.598	0.009	0.289	0.705

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.021	0.043	0.105	0.104	0.204	0.021	0.207	0.361
S.D.	0.001	0.001	0.001	0.003	0.000	0.001	0.002	0.028
% R.S.D.	3.459	3.276	0.798	3.326	0.055	5.720	1.170	7.738

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.191	0.199	0.102	0.408	0.199	0.209	0.197	0.193
S.D.	0.008	0.006	0.000	0.023	0.006	0.000	0.003	0.002
% R.S.D.	4.329	3.227	0.078	5.534	3.022	0.202	1.655	1.124

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.102	0.231	0.019	0.210	0.019	0.011	0.106	0.536
S.D.	0.001	0.017	0.000	0.022	0.000	0.000	0.001	0.013
% R.S.D.	1.053	7.256	2.325	10.583	1.544	3.720	1.061	2.427

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.019	0.101	0.184	0.011	0.374
S.D.	0.001	0.018	0.002	0.000	0.020
% R.S.D.	4.099	18.304	1.462	3.283	5.251

Identity 1: ICSA Identity 2: Quality Control 6:53 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	0.002	-0.017	0.015	200.727	0.001	-0.001	0.000
S.D.	0.001	0.000	0.010	0.004	0.386	0.000	0.001	0.000
% R.S.D.	2152.273	3.093	57.704	28.110	0.192	0.903	58.535	163.180

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.004	0.002	0.008	95.274	99.051	0.002	0.023	-0.048
S.D.	0.001	0.002	0.002	0.045	0.106	0.002	0.013	0.038
% R.S.D.	13.768	89.712	32.310	0.047	0.107	108.165	58.889	78.962

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.007	0.008	0.003	0.067	0.025	97.146	0.022	194.219
S.D.	0.008	0.006	0.000	0.009	0.004	0.327	0.006	2.165
% R.S.D.	121.787	82.907	3.951	14.097	17.462	0.336	24.934	1.115

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.003	-0.037	0.001	0.011	-0.001	0.001	0.014	0.034
S.D.	0.002	0.027	0.001	0.010	0.001	0.001	0.001	0.001
% R.S.D.	62.899	73.612	134.087	93.158	69.468	63.906	3.987	4.229

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.012	-0.043	0.003	0.004	0.009
S.D.	0.001	0.019	0.000	0.000	0.021
% R.S.D.	4.578	43.328	14.126	3.764	218.402

Identity 1: ICSAB Identity 2: Quality Control 6:56 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	0.002	-0.009	0.021	202.465	0.499	0.508	0.945
S.D.	0.001	0.000	0.009	0.001	0.578	0.004	0.001	0.002
% R.S.D.	2493.855	4.774	102.642	4.549	0.285	0.754	0.153	0.179

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.017	1.007	0.005	97.005	99.306	0.516	0.009	0.087
S.D.	0.002	0.009	0.002	0.369	0.335	0.004	0.007	0.044
% R.S.D.	0.148	0.895	35.425	0.381	0.337	0.734	76.327	50.623

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.008	0.038	0.517	0.018	0.013	97.666	0.016	192.897
S.D.	0.011	0.007	0.002	0.002	0.004	0.305	0.006	0.223
% R.S.D.	134.747	18.870	0.305	11.051	32.333	0.312	38.370	0.116

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	-0.000	-0.000	1.044	1.020	0.000	1.019	0.015	0.032
S.D.	0.001	0.013	0.001	0.005	0.000	0.002	0.001	0.008
% R.S.D.	136.397	2821.067	0.063	0.465	39.511	0.189	8.249	23.779

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.524	-0.010	0.507	0.510	-0.017
S.D.	0.003	0.025	0.002	0.001	0.018
% R.S.D.	0.543	244.527	0.490	0.174	110.357

WHC-SD-WM-DP-156, REV. 16

Identity 1: PREPBLK Identity 2: Quality Control 7:02 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.000	0.017	0.581	0.224	-0.003	0.008	0.003
S.D.	0.001	0.000	0.008	0.002	0.007	0.000	0.001	0.000
% R.S.D.	161.111	519.615	45.584	0.335	3.084	0.146	8.763	11.576

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.003	-0.001	0.003	0.013	0.014	0.001	0.000	0.048
S.D.	0.000	0.001	0.002	0.004	0.002	0.000	0.007	0.037
% R.S.D.	11.112	136.706	49.666	27.326	13.474	60.852	4845.600	77.552

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.035	0.011	0.002	0.026	0.045	0.011	-0.006	4.678
S.D.	0.010	0.009	0.000	0.004	0.003	0.002	0.005	0.021
% R.S.D.	29.188	84.278	14.156	13.672	7.531	18.226	92.996	0.442

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.000	-0.009	-0.003	-0.005	0.002	-0.001	2.725	0.165
S.D.	0.001	0.012	0.001	0.009	0.000	0.001	0.007	0.012
% R.S.D.	1052.946	140.104	29.474	174.353	21.240	53.898	0.251	7.019

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.002	0.012	-0.001	0.000	-0.054
S.D.	0.000	0.006	0.001	0.000	0.016
% R.S.D.	10.242	48.606	101.289	147.021	28.677

Identity 1: S96T003278_L Identity 2: 4-4-2-8 ml 7:06 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 10.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.038	0.000	0.084	1.217	38.606	-0.011	0.004	0.032
S.D.	0.013	0.001	0.022	0.024	0.028	0.019	0.002	0.003
% R.S.D.	33.694	519.615	26.018	1.977	0.073	171.823	61.352	9.968

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.036	0.043	0.053	0.067	0.123	5.465	0.023	0.899
S.D.	0.004	0.013	0.022	0.014	0.001	0.038	0.031	0.493
% R.S.D.	11.659	31.530	41.678	21.426	0.909	0.699	135.798	54.870

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.016	-0.067	0.000	0.922	2.847	0.042	-0.089	625.511
S.D.	0.091	0.088	0.002	0.047	0.006	0.001	0.014	7.984
% R.S.D.	556.562	131.813	1165.118	5.082	0.219	2.510	15.318	1.276

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.126	-0.070	0.004	-0.057	0.001	-0.003	1.417	3.715
S.D.	0.001	0.122	0.007	0.006	0.004	0.003	0.007	0.170
% R.S.D.	1.179	175.396	195.261	9.789	512.833	115.977	0.498	4.582

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.019	0.115	0.017	0.005	-0.177
S.D.	0.002	0.199	0.014	0.001	0.283
% R.S.D.	9.196	173.257	79.551	23.933	159.557

WHC-SD-WM-DP-156, REV. 1B

Identity 1: S96T003278 Identity 2: 4-4 ml 7:10 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.010	0.000	0.028	1.815	38.913	-0.004	0.021	0.032
S.D.	0.001	0.000	0.010	0.006	0.068	0.004	0.001	0.001
% R.S.D.	11.122	75.000	35.626	0.328	0.174	87.135	2.841	1.937

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.044	0.033	-0.003	0.012	0.154	5.552	0.017	0.097
S.D.	0.001	0.003	0.003	0.001	0.000	0.008	0.018	0.035
% R.S.D.	2.033	8.698	100.771	8.956	0.146	0.149	107.235	35.707

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.024	-0.087	0.001	0.911	2.862	0.026	-0.013	597.428
S.D.	0.019	0.013	0.000	0.035	0.020	0.001	0.005	2.799
% R.S.D.	78.334	14.742	40.198	3.817	0.683	2.395	38.657	0.468

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.135	0.004	-0.001	-0.012	0.000	-0.000	1.363	3.876
S.D.	0.001	0.016	0.001	0.008	0.001	0.000	0.003	0.008
% R.S.D.	1.006	371.441	153.315	67.975	147.511	86681.611	0.239	0.194

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.004	-0.004	0.006	0.001	0.010
S.D.	0.000	0.047	0.001	0.000	0.008
% R.S.D.	9.870	1133.625	11.254	21.826	76.421

Identity 1: S96T003278_D Identity 2: 4-4 ml 7:13 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00 WHC-SD-WM-DP-156, REV. 16
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.024	0.000	0.022	10.479	42.696	-0.002	0.024	0.046
S.D.	0.001	0.000	0.012	0.010	0.047	0.004	0.001	0.000
% R.S.D.	2.125	229.129	56.672	0.095	0.110	173.577	2.630	0.634

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.011	0.033	0.004	0.018	0.027	5.786	0.019	0.325
S.D.	0.001	0.005	0.002	0.002	0.000	0.020	0.009	0.035
% R.S.D.	5.960	15.048	42.052	10.555	0.817	0.349	48.280	10.888

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.034	0.055	0.002	1.055	2.981	0.011	-0.004	638.104
S.D.	0.011	0.010	0.000	0.003	0.023	0.000	0.012	1.141
% R.S.D.	32.720	18.815	9.755	0.313	0.760	1.991	311.147	0.179

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.137	0.013	-0.003	0.031	0.006	-0.001	3.955	3.876
S.D.	0.003	0.012	0.001	0.010	0.000	0.002	0.010	0.040
% R.S.D.	2.473	92.940	33.502	32.874	3.817	211.768	0.244	1.032

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.004	0.018	0.001	0.001	-0.057
S.D.	0.000	0.050	0.001	0.000	0.022
% R.S.D.	8.458	274.484	114.528	0.391	39.109

Identity 1: S96T003278_A Identity 2: 4sam+1.6sst5+2.4hno3 7:17 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	2.013	2.033	2.051	4.113	41.282	2.065	2.064	1.957
S.D.	0.005	0.003	0.009	0.021	0.023	0.010	0.005	0.005
% R.S.D.	0.239	0.163	0.463	0.499	0.055	0.482	0.237	0.251

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	2.071	2.048	2.011	2.031	2.097	7.596	2.019	3.917
S.D.	0.001	0.012	0.002	0.017	0.002	0.026	0.007	0.033
% R.S.D.	0.065	0.601	0.083	0.858	0.110	0.347	0.332	0.845

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	2.104	1.993	2.029	2.777	4.863	2.022	2.094	602.820
S.D.	0.011	0.013	0.003	0.063	0.087	0.002	0.005	1.120
% R.S.D.	0.534	0.634	0.169	2.259	1.785	0.096	0.215	0.186

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	2.191	2.062	1.427	2.077	1.996	2.013	3.340	5.648
S.D.	0.010	0.035	0.003	0.034	0.002	0.008	0.008	0.026
% R.S.D.	0.459	1.711	0.243	1.656	0.109	0.376	0.231	0.460

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	2.035	1.947	2.054	2.047	1.960
S.D.	0.001	0.060	0.005	0.005	0.020
% R.S.D.	0.060	3.071	0.221	0.223	1.019

Identity 1: CCV Identity 2: Quality Control 7:28 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.030	5.092	5.089	4.903	5.042	5.199	5.118	5.096
S.D.	0.009	0.010	0.038	0.008	0.012	0.012	0.007	0.015
% R.S.D.	0.189	0.198	0.750	0.158	0.234	0.237	0.137	0.285

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.224	5.118	5.065	5.111	5.176	5.172	5.065	9.681
S.D.	0.009	0.005	0.004	0.002	0.008	0.015	0.010	0.031
% R.S.D.	0.165	0.090	0.071	0.048	0.157	0.285	0.191	0.316

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.207	5.107	5.094	5.061	5.081	5.098	5.174	5.071
S.D.	0.022	0.008	0.009	0.085	0.059	0.011	0.022	0.015
% R.S.D.	0.419	0.147	0.171	1.677	1.164	0.208	0.419	0.296

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	5.212	5.540	5.024	5.108	5.016	5.118	5.110	5.043
S.D.	0.019	0.046	0.009	0.012	0.009	0.018	0.009	0.012
% R.S.D.	0.364	0.837	0.176	0.233	0.189	0.357	0.180	0.240

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.119	4.776	5.139	5.254	4.906
S.D.	0.011	0.040	0.007	0.009	0.008
% R.S.D.	0.220	0.836	0.132	0.166	0.170

Identity 1: CCB Identity 2: Quality Control 7:34 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	0.001	0.021	-0.001	0.004	0.000	-0.001	0.001
S.D.	0.002	0.000	0.018	0.003	0.007	0.003	0.001	0.000
% R.S.D.	563.447	13.323	84.756	339.805	190.486	51281.543	111.065	34.416

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	-0.002	-0.004	0.004	0.001	0.002	0.022	-0.049
S.D.	0.001	0.004	0.000	0.001	0.000	0.002	0.005	0.007
% R.S.D.	59.638	156.681	0.081	31.873	36.078	93.585	21.688	14.518

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.038	-0.005	0.001	0.019	0.000	0.001	-0.006	0.005
S.D.	0.007	0.003	0.000	0.002	0.002	0.000	0.001	0.003
% R.S.D.	17.133	49.205	19.610	12.332	625.803	19.245	21.500	49.482

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	-0.014	0.005	0.011	-0.000	0.001	0.002	0.022
S.D.	0.001	0.003	0.000	0.001	0.001	0.001	0.001	0.011
% R.S.D.	76.185	19.472	5.598	9.933	489.886	126.401	30.426	48.435

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	0.024	0.003	0.001	0.004
S.D.	0.000	0.026	0.001	0.000	0.020
% R.S.D.	24.868	109.884	24.030	17.490	485.216

WHC-SD-WM-DP-156, REV. 1B

Identity 1: S96T003279_L Identity 2: 2-8 ml 7:37 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 5.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.020	0.001	0.073	0.932	19.750	-0.011	0.002	0.010
S.D.	0.003	0.000	0.042	0.007	0.003	0.009	0.001	0.001
% R.S.D.	14.589	28.868	57.197	0.793	0.016	86.285	54.169	14.002

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.005	0.030	-0.002	0.013	0.082	2.391	0.089	0.390
S.D.	0.003	0.006	0.004	0.011	0.000	0.007	0.015	0.204
% R.S.D.	48.178	18.961	191.256	82.408	0.257	0.273	16.960	52.243

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.007	0.104	0.002	1.062	1.663	0.013	0.008	292.445
S.D.	0.056	0.050	0.001	0.032	0.051	0.001	0.013	0.440
% R.S.D.	830.195	47.763	50.635	2.999	3.048	3.936	165.674	0.150

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.094	-0.044	0.005	-0.082	0.005	-0.008	3.114	2.807
S.D.	0.005	0.104	0.003	0.024	0.001	0.001	0.015	0.082
% R.S.D.	5.035	236.789	57.679	29.719	29.399	15.900	0.474	2.914

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.011	-0.211	0.008	0.001	-0.071
S.D.	0.001	0.056	0.002	0.000	0.069
% R.S.D.	8.027	26.522	28.220	3.546	96.744

Identity 1: S96T003279 Identity 2: direct 7:41 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.005	0.001	0.012	0.935	20.182	-0.002	0.010	0.012
S.D.	0.001	0.000	0.007	0.003	0.009	0.002	0.000	0.000
% R.S.D.	15.750	13.887	53.805	0.306	0.045	86.095	4.619	2.105

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.009	0.041	-0.001	0.010	0.094	2.446	0.003	0.246
S.D.	0.000	0.002	0.002	0.002	0.000	0.006	0.011	0.034
% R.S.D.	2.024	5.208	187.516	18.974	0.090	0.231	400.322	13.712

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.013	-0.002	0.002	0.990	1.668	0.006	-0.012	286.259
S.D.	0.014	0.006	0.000	0.022	0.018	0.000	0.001	1.798
% R.S.D.	112.397	256.055	8.792	2.259	1.098	3.396	5.889	0.628

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.095	0.017	-0.001	0.028	0.002	-0.000	3.088	2.583
S.D.	0.002	0.011	0.000	0.011	0.000	0.001	0.008	0.026
% R.S.D.	2.217	67.491	39.121	38.552	20.306	293.307	0.266	0.999

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	-0.013	0.002	0.001	-0.003
S.D.	0.000	0.005	0.001	0.000	0.019
% R.S.D.	13.548	36.042	57.196	37.747	687.404

Identity 1: S96T003279_D Identity 2: direct 7:45 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.008	0.001	0.033	0.625	19.630	-0.002	0.019	0.013
S.D.	0.001	0.000	0.001	0.001	0.013	0.004	0.000	0.000
% R.S.D.	16.058	12.245	2.529	0.111	0.065	172.718	2.306	1.947

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.011	0.050	-0.004	0.014	0.101	2.433	0.016	0.227
S.D.	0.001	0.002	0.001	0.002	0.000	0.007	0.007	0.066
% R.S.D.	6.043	3.761	22.936	12.440	0.251	0.283	43.983	29.222

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.002	0.003	0.004	3.875	1.635	0.017	0.000	285.898
S.D.	0.017	0.014	0.000	0.102	0.022	0.000	0.003	1.417
% R.S.D.	888.834	444.207	8.673	2.644	1.346	2.191	803.022	0.495

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.096	0.022	-0.000	0.032	0.002	0.000	2.325	2.684
S.D.	0.000	0.019	0.001	0.010	0.000	0.001	0.008	0.036
% R.S.D.	0.090	85.169	220.448	31.744	17.140	1209.565	0.346	1.334

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	0.015	0.015	0.001	-0.014
S.D.	0.000	0.022	0.001	0.000	0.028
% R.S.D.	0.533	148.009	7.271	14.091	204.565

Identity 1: S96T003279_A Identity 2: 5sam + 1.2sst5 7:48 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.24
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	1.212	1.226	1.261	2.144	21.189	1.241	1.252	1.184
S.D.	0.002	0.002	0.016	0.004	0.022	0.004	0.003	0.011
% R.S.D.	0.148	0.177	1.293	0.195	0.104	0.326	0.256	0.911

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.260	1.263	1.229	1.247	1.343	3.643	1.227	2.564
S.D.	0.001	0.012	0.010	0.016	0.003	0.011	0.018	0.054
% R.S.D.	0.046	0.945	0.845	1.255	0.221	0.315	1.451	2.111

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	1.225	1.230	1.226	2.142	2.832	1.226	1.250	290.520
S.D.	0.016	0.008	0.003	0.041	0.038	0.002	0.006	2.360
% R.S.D.	1.304	0.638	0.258	1.916	1.355	0.160	0.498	0.812

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Tl (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	1.328	1.350	0.829	1.254	1.205	1.226	4.289	3.797
S.D.	0.004	0.018	0.007	0.017	0.001	0.004	0.014	0.030
% R.S.D.	0.294	1.316	0.894	1.346	0.078	0.357	0.324	0.790

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	1.233	1.191	1.240	1.248	1.154
S.D.	0.003	0.027	0.002	0.000	0.033
% R.S.D.	0.205	2.260	0.133	0.035	2.861

Identity 1: ICSA Identity 2: Quality Control 7:53 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.005	0.002	0.009	0.031	200.119	-0.002	-0.001	0.000
S.D.	0.000	0.000	0.005	0.001	0.463	0.003	0.000	0.000
% R.S.D.	2.720	3.093	53.541	4.636	0.231	178.640	12.542	194.903

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.004	0.005	0.004	95.903	99.069	0.003	0.014	0.145
S.D.	0.001	0.003	0.001	0.029	0.134	0.002	0.015	0.003
% R.S.D.	12.151	48.773	20.411	0.031	0.135	58.414	105.557	2.383

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.002	0.024	0.003	0.043	0.022	98.070	0.030	190.377
S.D.	0.005	0.002	0.000	0.004	0.008	0.287	0.008	0.739
% R.S.D.	240.378	10.236	2.829	9.071	38.124	0.292	26.068	0.388

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.000	-0.056	0.014	0.021	0.001	0.001	0.016	0.118
S.D.	0.002	0.012	0.001	0.012	0.000	0.000	0.001	0.014
% R.S.D.	623.271	21.530	5.306	57.237	4.809	28.039	4.387	11.600

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.012	0.004	0.000	0.003	-0.033
S.D.	0.000	0.016	0.001	0.000	0.005
% R.S.D.	2.749	435.931	165.609	7.284	13.938

Identity 1: ICSAB Identity 2: Quality Control 7:56 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.000	0.002	-0.021	0.025	200.685	0.497	0.507	0.938
S.D.	0.001	0.000	0.003	0.002	0.260	0.003	0.001	0.004
% R.S.D.	220.391	5.092	15.889	8.898	0.129	0.656	0.149	0.417

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	1.009	0.999	-0.000	96.793	98.953	0.515	0.001	0.095
S.D.	0.004	0.004	0.003	0.033	0.107	0.008	0.004	0.028
% R.S.D.	0.366	0.430	5180.521	0.034	0.108	1.482	262.384	29.910

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.017	0.026	0.516	0.036	-0.008	96.746	0.010	191.803
S.D.	0.006	0.005	0.000	0.014	0.006	0.205	0.007	0.709
% R.S.D.	35.643	19.162	0.032	40.326	84.275	0.212	74.326	0.370

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.001	-0.044	1.038	1.012	0.000	1.011	0.015	0.045
S.D.	0.001	0.015	0.002	0.021	0.000	0.002	0.001	0.002
% R.S.D.	120.407	34.720	0.213	2.037	91.360	0.156	6.243	5.489

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.521	0.015	0.503	0.507	-0.048
S.D.	0.001	0.010	0.002	0.001	0.018
% R.S.D.	0.140	62.274	0.413	0.256	36.834

Identity 1: CCV Identity 2: Quality Control 8:01 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.968	5.001	5.031	4.830	4.968	5.101	5.056	5.001
S.D.	0.009	0.011	0.008	0.005	0.016	0.004	0.016	0.031
% R.S.D.	0.189	0.214	0.158	0.112	0.314	0.074	0.316	0.618

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.162	5.074	5.052	5.132	5.138	5.104	5.184	9.602
S.D.	0.006	0.011	0.008	0.019	0.010	0.009	0.014	0.020
% R.S.D.	0.111	0.220	0.161	0.367	0.201	0.185	0.272	0.213

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	5.072	5.036	5.012	4.674	4.845	5.017	5.126	5.015
S.D.	0.008	0.010	0.013	0.105	0.061	0.003	0.029	0.025
% R.S.D.	0.153	0.193	0.254	2.256	1.267	0.067	0.561	0.492

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	5.085	5.375	4.986	5.077	4.931	5.062	5.115	5.106
S.D.	0.008	0.007	0.005	0.022	0.005	0.002	0.018	0.032
% R.S.D.	0.157	0.134	0.096	0.434	0.098	0.046	0.350	0.620

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.082	4.762	5.093	5.198	4.858
S.D.	0.003	0.016	0.002	0.009	0.013
% R.S.D.	0.064	0.341	0.037	0.168	0.263

Identity 1: CCB Identity 2: Quality Control 8:09 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.001	0.011	-0.005	0.008	-0.002	-0.001	0.001
S.D.	0.001	0.000	0.003	0.001	0.006	0.002	0.000	0.000
% R.S.D.	137.230	47.908	31.589	18.224	68.081	87.186	58.071	64.499

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	0.001	0.002	0.001	0.001	-0.003	0.021	-0.091
S.D.	0.000	0.001	0.002	0.001	0.001	0.001	0.011	0.030
% R.S.D.	14.294	117.736	93.530	59.950	53.050	46.993	50.048	33.014

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.017	-0.011	0.001	0.012	0.003	0.001	0.002	0.016
S.D.	0.012	0.008	0.001	0.007	0.003	0.001	0.002	0.003
% R.S.D.	74.266	68.423	55.579	59.515	121.286	52.678	149.820	15.743

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.006	-0.036	0.005	0.016	-0.000	0.000	0.008	0.065
S.D.	0.001	0.008	0.001	0.013	0.000	0.000	0.001	0.009
% R.S.D.	17.409	21.230	15.347	83.365	111.063	104.750	9.839	14.379

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	0.016	0.005	0.001	0.014
S.D.	0.000	0.010	0.000	0.000	0.005
% R.S.D.	42.888	61.901	5.498	31.182	39.142

06-21-96

FILE NO: 960621B.DAT

06/19/96 13:46
A-0004-1

WHC-SD-WM-DP-156, REV. 1B

LABCORE Data Entry Template for Worklist# 10089

Analyst: T. WORRELL **Instrument:** ICP01 _____ **Book#** 56B48B

Method: LA-505-151/~~161~~ Rev/Mod D-3
JW 6-21-96

Worklist Comment: ICP S-107 (SOLID WATER DIGEST)

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	ICV				@ICP-QC	QC		
2	ICB				@ICP-QC	QC		
3	LLS				@ICP-QC	QC		
4	ICSA				@ICP-QC	QC		
5	ICSAB				@ICP-QC	QC		
6	PREPBLKARL				@ICP-I01	SOLID		
7	SERDIL	S96T00~~3281~~ 3280	0	I	@ICP-I01	SOLID		
8	SAMPLE	S96T003280	0	I	@ICP-I01	SOLID	95000141	S-107
		Analytes Requested:			AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 , MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01		
9	DUP	S96T003280	0	I	@ICP-I01	SOLID		
10	SPK	S96T003280	0	I	@ICP-I01	SOLID		
11	CCV				@ICP-QC	QC		
12	CCB				@ICP-QC	QC		
13	SERDIL	S96T003281	0	I	@ICP-I01	SOLID		
14	SAMPLE	S96T003281	0	I	@ICP-I01	SOLID	95000141	S-107
		Analytes Requested:			AG-I-01 , AL-I-01 , AS-I-01 , B-I-01 , BA-I-01 , BE-I-01 , BI-I-01 , CA-I-01 , CD-I-01 , CE-I-01 , CO-I-01 , CR-I-01 , CU-I-01 , FE-I-01 , K-I-01 , LA-I-01 , LI-I-01 ,		

Data Entry Comments: Sample result calculation:

S96T003281 Al = $20.281 \frac{ug}{ml} \times \frac{1}{4.743 \frac{g}{L} \times \frac{1L}{1000ml}} = 4.28 \times 10^{3} \frac{ug}{g}$

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Note: 4.743 g/L is sample prep dilution factor which can be found in sample prep worklist.

LABCORE Data Entry Template for Worklist# 10089

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
					MG-I-01 , MN-I-01 , MO-I-01 , NA-I-01 , ND-I-01 , NI-I-01 , P-I-01 , PB-I-01 , S-I-01 , SB-I-01 , SE-I-01 , SI-I-01 , SM-I-01 , SR-I-01 , TI-I-01 , TL-I-01 , U-I-01 , V-I-01 , ZN-I-01 , ZR-I-01			
15	DUP	S96T003281	0	I	@ICP-I01	SOLID		
16	SPK	S96T003281	0	I	@ICP-I01	SOLID		
17	ICSA				@ICP-QC	QC		
18	ICSAB				@ICP-QC	QC		
19	CCV				@ICP-QC	QC		
20	CCB				@ICP-QC	QC		

Final page for worklist # 10089

Analyst Signature: [signature] Date: 6-21-96

Reviewed by: [signature] Analyst Signature: [signature] Date: 6/21/96

		DF
S96T003280	DIL 5X	10
	SAM	2
	DUP	2
	P SPK	2
S96T003281	DIL 5X	10
	SAM	2
	DUP	2
	P SPK	2

Data Entry Comments: Spike recovery calculation

S96T003280 $\%R = \left(\frac{22.315}{2}\right) - \left(\frac{20.281}{2}\right) \times 100 = 101.7\%$

S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

Note: Spike true value is 1.0 ppm for all elements except for ICSA. $\%R = 2.0$ ppm.

WHC-SD-WM-DP-156, REV 1B

Identity 1: ICV Identity 2: Quality Control 1:19 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	4.967	4.981	4.940	4.794	4.867	4.934	5.124	5.008
S.D.	0.017	0.014	0.040	0.017	0.021	0.019	0.016	0.033
% R.S.D.	0.350	0.286	0.812	0.357	0.440	0.384	0.312	0.655

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	4.991	4.995	5.204	5.251	5.177	4.973	5.704	9.910
S.D.	0.016	0.024	0.013	0.022	0.018	0.026	0.033	0.038
% R.S.D.	0.328	0.475	0.256	0.417	0.348	0.517	0.580	0.380

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.998	5.126	5.023	4.641	4.679	4.817	5.031	4.942
S.D.	0.017	0.009	0.014	0.099	0.015	0.019	0.012	0.040
% R.S.D.	0.343	0.172	0.284	2.133	0.319	0.401	0.241	0.813

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	4.827	5.285	4.901	5.093	4.819	5.010	5.218	4.961
S.D.	0.013	0.007	0.016	0.037	0.014	0.019	0.015	0.044
% R.S.D.	0.276	0.131	0.331	0.731	0.284	0.373	0.292	0.881

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.008	4.769	5.053	5.202	4.914
S.D.	0.023	0.041	0.020	0.013	0.011
% R.S.D.	0.469	0.856	0.397	0.247	0.227

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 2602 TO 2621

John Worell
6-21-96

FILE NO. 960621B.DAT

ST9600328~~0~~1 } S-107

Identity 1: ICB Identity 2: Quality Control 1:22 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.000	0.004	-0.027	0.000	-0.034	0.012	0.004	0.004
S.D.	0.001	0.001	0.004	0.002	0.005	0.002	0.001	0.001
% R.S.D.	918.588	19.912	13.537	365.905	13.416	15.712	26.609	22.013

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.003	0.001	-0.003	0.002	0.006	0.007	0.014	-0.100
S.D.	0.001	0.002	0.001	0.002	0.001	0.001	0.003	0.025
% R.S.D.	37.185	127.796	42.598	82.469	16.145	14.307	24.867	25.194

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.031	-0.019	0.004	-0.006	0.000	0.003	0.005	-0.013
S.D.	0.008	0.003	0.001	0.009	0.002	0.001	0.001	0.001
% R.S.D.	25.562	18.090	18.930	144.263	896.760	21.430	18.367	9.619

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.003	0.095	0.006	0.014	0.002	0.005	0.006	-0.170
S.D.	0.001	0.005	0.001	0.008	0.001	0.001	0.001	0.012
% R.S.D.	33.288	4.827	17.270	58.820	68.622	25.104	14.963	7.331

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.003	0.065	0.003	0.003	-0.024
S.D.	0.000	0.006	0.001	0.001	0.018
% R.S.D.	14.244	8.900	26.465	29.352	73.162

Identity 1: LLS Identity 2: Quality Control 1:25 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.022	0.021	0.160	0.106	0.052	0.041	0.022	0.021
S.D.	0.001	0.000	0.011	0.005	0.005	0.002	0.000	0.000
% R.S.D.	2.456	0.302	7.035	4.405	9.849	4.690	0.402	0.681

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.021	0.042	0.104	0.110	0.207	0.019	0.230	0.439
S.D.	0.000	0.001	0.003	0.002	0.000	0.001	0.009	0.015
% R.S.D.	1.690	1.987	2.831	1.416	0.089	7.511	3.826	3.484

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.200	0.200	0.103	0.376	0.195	0.207	0.200	0.180
S.D.	0.006	0.002	0.000	0.008	0.002	0.000	0.009	0.004
% R.S.D.	2.868	0.917	0.061	2.031	1.204	0.237	4.652	2.469

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.099	0.285	0.021	0.200	0.020	0.015	0.109	0.390
S.D.	0.002	0.011	0.000	0.008	0.000	0.001	0.002	0.011
% R.S.D.	2.171	3.929	1.325	3.889	2.290	4.870	1.823	2.866

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.021	0.172	0.103	0.011	0.400
S.D.	0.000	0.015	0.001	0.000	0.018
% R.S.D.	2.270	8.960	0.869	1.208	4.406

Identity 1: ICSA Identity 2: Quality Control 1:27 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.000	0.002	-0.044	0.019	199.928	0.005	0.001	0.001
S.D.	0.001	0.000	0.008	0.004	0.400	0.003	0.000	0.000
% R.S.D.	233.503	5.310	19.074	21.964	0.200	66.529	34.385	26.680

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.006	0.004	0.000	98.030	101.344	0.004	0.018	-0.078
S.D.	0.001	0.001	0.002	0.451	0.279	0.003	0.009	0.048
% R.S.D.	9.127	16.322	5659.003	0.461	0.275	80.698	48.409	61.829

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.025	0.004	0.004	0.044	0.001	91.906	0.034	192.044
S.D.	0.011	0.009	0.000	0.011	0.006	0.496	0.009	1.026
% R.S.D.	41.840	249.384	6.822	25.132	600.153	0.540	25.231	0.534

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	0.102	0.004	0.041	-0.001	0.004	0.009	-0.262
S.D.	0.000	0.003	0.001	0.005	0.000	0.000	0.000	0.024
% R.S.D.	9.966	3.003	17.248	12.178	52.834	5.963	2.857	9.094

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.011	0.032	0.001	0.003	-0.013
S.D.	0.001	0.002	0.001	0.000	0.024
% R.S.D.	6.691	5.569	58.523	4.764	193.590

Identity 1: ICSAB Identity 2: Quality Control 1:30 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.005	0.002	-0.043	0.013	198.252	0.488	0.512	0.927
S.D.	0.001	0.000	0.006	0.002	0.526	0.003	0.000	0.003
% R.S.D.	14.600	3.093	13.386	14.660	0.265	0.681	0.053	0.326

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.990	0.990	0.001	100.746	101.383	0.509	0.021	-0.109
S.D.	0.001	0.003	0.001	0.152	0.064	0.001	0.009	0.034
% R.S.D.	0.118	0.255	160.494	0.151	0.063	0.288	44.013	31.486

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.029	-0.020	0.511	0.030	-0.000	91.733	0.043	188.752
S.D.	0.006	0.006	0.000	0.010	0.007	0.199	0.004	0.723
% R.S.D.	18.998	28.211	0.018	31.858	1484.127	0.217	8.694	0.383

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	0.085	1.040	1.038	-0.002	1.010	0.011	-0.211
S.D.	0.001	0.009	0.001	0.024	0.000	0.002	0.000	0.015
% R.S.D.	24.477	10.151	0.133	2.299	4.885	0.181	2.094	7.175

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.517	0.075	0.505	0.507	0.014
S.D.	0.000	0.021	0.001	0.001	0.020
% R.S.D.	0.060	28.377	0.164	0.235	136.935

Identity 1: prepblkarl Identity 2: direct 1:33 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.001	0.000	-0.005	0.307	0.220	0.004	0.003	0.003
S.D.	0.001	0.000	0.005	0.001	0.059	0.002	0.001	0.000
% R.S.D.	242.265	45.826	111.025	0.218	26.642	43.240	16.306	4.836

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.002	0.005	-0.002	0.101	0.095	-0.001	-0.011	-0.030
S.D.	0.000	0.002	0.002	0.028	0.027	0.003	0.001	0.023
% R.S.D.	22.183	36.595	90.915	27.820	28.243	409.764	11.456	76.806

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.026	0.001	0.002	-0.002	0.024	0.086	-0.001	3.719
S.D.	0.012	0.005	0.000	0.009	0.005	0.026	0.001	0.058
% R.S.D.	46.949	898.950	11.105	368.633	22.048	29.951	85.609	1.554

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.001	0.092	-0.000	0.028	0.000	0.004	2.328	-0.109
S.D.	0.001	0.009	0.001	0.005	0.000	0.000	0.008	0.002
% R.S.D.	130.647	9.485	635.832	17.962	92.876	10.522	0.348	2.275

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	0.042	-0.004	0.000	-0.061
S.D.	0.000	0.028	0.001	0.000	0.018
% R.S.D.	49.126	66.744	20.375	76.769	30.135

Identity 1: s96t003280_L Identity 2: 5ml-5ml-2ml-8ml 1:39 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.006	0.001	-0.050	0.131	3.988	0.022	0.006	0.005
S.D.	0.001	0.000	0.019	0.000	0.006	0.004	0.000	0.000
% R.S.D.	18.721	11.175	38.872	0.111	0.142	17.240	7.442	8.503

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.023	0.001	-0.009	0.010	0.041	1.288	0.052	-0.357
S.D.	0.003	0.006	0.005	0.003	0.001	0.008	0.016	0.110
% R.S.D.	15.180	472.674	50.435	33.752	1.968	0.590	31.541	30.808

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.081	-0.088	0.002	0.461	0.441	0.007	0.016	87.243
S.D.	0.032	0.019	0.001	0.035	0.005	0.001	0.002	0.598
% R.S.D.	40.106	21.927	22.666	7.682	1.090	13.229	15.484	0.685

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.025	0.175	0.009	0.045	-0.004	0.008	0.608	0.272
S.D.	0.001	0.027	0.001	0.005	0.001	0.001	0.001	0.030
% R.S.D.	4.188	15.637	16.402	12.108	25.614	17.308	0.111	11.133

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	-0.102	0.005	0.000	0.056
S.D.	0.000	0.021	0.001	0.000	0.060
% R.S.D.	24.551	20.364	17.621	20.931	106.313

Identity 1: s96t003280 Identity 2: 5ml-5ml 1:42 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.002	-0.038	0.717	20.281	0.007	0.008	0.014
S.D.	0.001	0.000	0.027	0.003	0.027	0.000	0.000	0.000
% R.S.D.	66.757	3.039	69.140	0.418	0.134	0.038	4.712	1.940

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.057	0.013	-0.008	0.005	0.071	6.431	0.005	-0.039
S.D.	0.000	0.005	0.002	0.003	0.002	0.002	0.006	0.020
% R.S.D.	0.629	39.878	21.553	62.160	2.503	0.037	132.455	50.661

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.014	-0.019	0.004	2.233	2.226	0.008	-0.005	424.033
S.D.	0.003	0.002	0.000	0.029	0.034	0.001	0.006	1.562
% R.S.D.	24.128	11.348	2.477	1.308	1.517	18.319	128.937	0.368

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.113	0.344	0.005	0.030	-0.001	0.005	3.002	3.048
S.D.	0.001	0.024	0.001	0.017	0.001	0.000	0.003	0.020
% R.S.D.	1.151	7.111	19.916	56.798	88.335	0.005	0.086	0.658

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.001	0.091	0.015	0.000	0.008
S.D.	0.000	0.040	0.000	0.001	0.013
% R.S.D.	27.687	43.495	0.580	226.481	151.264

Identity 1: s96t003280_d Identity 2: 5ml-5ml 1:45 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.002	-0.070	0.569	23.991	0.013	0.012	0.023
S.D.	0.001	0.000	0.011	0.003	0.052	0.007	0.001	0.000
% R.S.D.	28.909	4.441	16.313	0.466	0.219	49.723	6.067	0.927

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.012	0.008	-0.001	0.002	0.056	6.896	0.010	-0.194
S.D.	0.000	0.001	0.005	0.002	0.000	0.001	0.013	0.023
% R.S.D.	3.793	11.756	472.764	110.716	0.149	0.019	132.015	11.638

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.003	-0.048	0.003	2.182	2.342	0.010	0.002	454.273
S.D.	0.010	0.006	0.000	0.049	0.005	0.000	0.004	0.550
% R.S.D.	311.753	11.759	4.949	2.228	0.220	0.000	167.480	0.121

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.120	0.390	0.002	0.040	-0.003	0.003	2.616	3.350
S.D.	0.002	0.016	0.001	0.013	0.001	0.002	0.003	0.020
% R.S.D.	1.794	4.046	38.010	31.924	19.824	53.699	0.110	0.592

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	-0.002	0.059	0.008	0.000	-0.034
S.D.	0.001	0.042	0.001	0.001	0.009
% R.S.D.	37.094	71.096	13.144	1568.802	27.126

Identity 1: s96t003280_a Identity 2: 5ml-2ml-3ml 1:48 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	2.035	2.032	1.951	2.994	22.315	2.043	2.098	1.949
S.D.	0.005	0.001	0.019	0.016	0.016	0.019	0.003	0.012
% R.S.D.	0.227	0.031	0.981	0.545	0.072	0.941	0.139	0.602

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	2.077	2.065	2.145	2.188	2.169	8.553	2.306	3.781
S.D.	0.009	0.014	0.012	0.015	0.005	0.029	0.007	0.053
% R.S.D.	0.450	0.698	0.553	0.695	0.227	0.334	0.319	1.404

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	2.044	2.025	2.036	4.234	4.187	1.992	2.042	422.919
S.D.	0.020	0.010	0.002	0.056	0.023	0.005	0.007	2.213
% R.S.D.	0.979	0.483	0.079	1.331	0.546	0.259	0.355	0.523

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	2.085	2.452	1.472	2.118	1.966	2.064	5.120	5.275
S.D.	0.006	0.057	0.008	0.002	0.003	0.008	0.011	0.032
% R.S.D.	0.298	2.341	0.560	0.108	0.162	0.408	0.213	0.604

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	2.078	2.075	2.099	2.099	2.002
S.D.	0.008	0.024	0.006	0.005	0.026
% R.S.D.	0.385	1.135	0.278	0.250	1.294

Identity 1: CCV Identity 2: Quality Control 1:51 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	5.032	5.025	4.980	4.846	4.929	4.965	5.171	5.023
S.D.	0.013	0.010	0.046	0.005	0.005	0.017	0.006	0.019
% R.S.D.	0.261	0.205	0.930	0.107	0.097	0.344	0.125	0.369

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	5.060	5.070	5.271	5.339	5.232	5.044	5.812	10.012
S.D.	0.011	0.023	0.025	0.018	0.012	0.024	0.033	0.032
% R.S.D.	0.211	0.457	0.466	0.341	0.233	0.471	0.560	0.315

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	4.995	5.184	5.066	4.835	4.779	4.874	5.061	5.077
S.D.	0.012	0.013	0.010	0.145	0.058	0.014	0.011	0.033
% R.S.D.	0.242	0.254	0.201	2.993	1.223	0.289	0.225	0.644

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	4.872	5.329	4.965	5.164	4.863	5.077	5.287	5.049
S.D.	0.011	0.019	0.010	0.037	0.011	0.022	0.008	0.043
% R.S.D.	0.231	0.352	0.203	0.716	0.234	0.429	0.152	0.860

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	5.083	4.769	5.112	5.261	4.915
S.D.	0.016	0.061	0.013	0.014	0.020
% R.S.D.	0.315	1.271	0.256	0.260	0.398

Identity 1: CCB Identity 2: Quality Control 1:54 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.001	0.002	-0.016	-0.001	-0.031	0.011	0.003	0.003
S.D.	0.002	0.000	0.009	0.001	0.004	0.002	0.000	0.000
% R.S.D.	118.926	14.693	56.677	69.081	14.122	17.237	13.001	14.622

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.001	0.000	-0.003	-0.001	0.003	0.003	0.014	-0.143
S.D.	0.000	0.003	0.001	0.002	0.000	0.002	0.004	0.054
% R.S.D.	23.595	10590.003	42.431	166.510	13.297	47.923	24.625	37.577

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.037	-0.017	0.002	0.011	0.002	0.001	-0.003	0.003
S.D.	0.014	0.008	0.000	0.007	0.000	0.000	0.005	0.003
% R.S.D.	37.982	48.649	13.882	59.400	11.487	17.321	186.456	114.590

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	0.035	0.034	0.000	-0.000	0.004	0.003	-0.187
S.D.	0.001	0.008	0.001	0.007	0.000	0.001	0.001	0.015
% R.S.D.	29.572	22.660	1.879	3591.728	74.365	25.849	23.492	7.779

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.001	0.037	0.003	0.002	0.019
S.D.	0.000	0.015	0.001	0.000	0.022
% R.S.D.	56.574	39.713	26.926	14.557	117.206

Identity 1: s96t003281_L Identity 2: 5ml-5ml-2ml-8ml 1:58 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 10.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.116	0.002	0.022	11.347	21.500	0.067	0.013	0.021
S.D.	0.007	0.001	0.068	0.052	0.023	0.000	0.003	0.002
% R.S.D.	5.800	37.500	317.848	0.456	0.109	0.027	22.208	11.472

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.049	0.070	-0.034	0.062	0.328	5.918	-0.191	-0.191
S.D.	0.002	0.022	0.000	0.017	0.002	0.027	0.085	0.143
% R.S.D.	3.069	31.719	0.197	27.714	0.668	0.450	44.516	74.689

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	-0.145	-0.042	0.002	29.861	1.976	0.011	-0.011	498.864
S.D.	0.023	0.026	0.001	0.207	0.002	0.002	0.025	2.900
% R.S.D.	15.829	60.944	49.167	0.692	0.121	16.667	224.597	0.581

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.096	0.929	0.086	0.014	0.001	0.017	4.129	0.741
S.D.	0.007	0.095	0.002	0.099	0.003	0.007	0.027	0.057
% R.S.D.	7.328	10.227	2.089	735.396	201.466	41.822	0.651	7.730

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.001	0.268	-0.028	-0.002	-0.435
S.D.	0.003	0.260	0.009	0.002	0.146
% R.S.D.	393.554	97.221	30.745	129.798	33.551

WHC-SD-WM-DP-156, REV. 1 6

Identity 1: s96t003281 Identity 2: 5ml-5ml 2:02 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.113	0.002	-0.057	12.017	22.179	0.013	0.017	0.020
S.D.	0.001	0.000	0.007	0.057	0.092	0.007	0.001	0.000
% R.S.D.	1.181	7.698	12.781	0.477	0.416	49.698	3.525	0.681

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.023	0.040	-0.011	0.057	0.129	5.949	0.062	-0.183
S.D.	0.001	0.001	0.002	0.005	0.000	0.035	0.023	0.050
% R.S.D.	2.687	2.304	15.826	8.787	0.326	0.589	37.504	27.202

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.079	-0.062	0.005	29.471	1.895	0.010	0.019	479.356
S.D.	0.016	0.014	0.000	0.645	0.028	0.001	0.009	2.832
% R.S.D.	20.397	23.221	5.945	2.188	1.476	9.799	47.252	0.591

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.098	0.325	0.010	0.077	0.002	0.005	4.112	2.390
S.D.	0.005	0.020	0.001	0.027	0.001	0.000	0.021	0.006
% R.S.D.	5.337	6.302	5.212	35.702	41.411	0.042	0.514	0.240

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.005	0.119	0.017	-0.000	0.038
S.D.	0.000	0.016	0.000	0.000	0.034
% R.S.D.	6.702	13.092	1.930	70.059	88.931

WHC-SD-WM-DP-155, REV. 1B

Identity 1: s96t003281_d Identity 2: 5ml-5ml 2:05 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.050	0.001	-0.046	7.445	19.446	0.013	0.009	0.017
S.D.	0.001	0.000	0.016	0.018	0.048	0.000	0.001	0.000
% R.S.D.	2.642	11.538	35.461	0.236	0.247	0.060	6.120	0.820

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.008	0.031	-0.003	0.022	0.093	5.565	0.029	-0.084
S.D.	0.000	0.009	0.003	0.003	0.000	0.009	0.012	0.062
% R.S.D.	3.400	27.577	114.767	13.209	0.157	0.156	39.482	74.357

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.014	-0.018	0.006	16.569	1.853	0.003	0.007	432.653
S.D.	0.021	0.017	0.000	0.445	0.016	0.000	0.007	2.243
% R.S.D.	147.992	91.392	4.409	2.685	0.885	7.531	89.730	0.518

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.097	0.424	0.007	0.056	0.004	0.003	2.924	2.216
S.D.	0.002	0.013	0.001	0.025	0.000	0.001	0.004	0.035
% R.S.D.	1.703	3.037	18.777	43.850	7.955	54.057	0.134	1.588

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.001	0.012	0.013	-0.001	-0.096
S.D.	0.000	0.035	0.002	0.000	0.025
% R.S.D.	37.800	286.291	18.424	1.483	25.757

Identity 1: s96t003281_A Identity 2: 5ml-2ml-3ml 2:08 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 2.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	2.141	2.035	1.970	14.328	24.271	2.001	2.121	1.951
S.D.	0.005	0.007	0.017	0.075	0.113	0.008	0.006	0.006
% R.S.D.	0.220	0.333	0.859	0.523	0.464	0.384	0.272	0.308

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	2.037	2.076	2.123	2.195	2.204	7.944	2.363	3.896
S.D.	0.002	0.007	0.010	0.013	0.005	0.043	0.007	0.020
% R.S.D.	0.112	0.333	0.485	0.602	0.210	0.547	0.295	0.525

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	2.030	2.042	2.047	31.875	3.833	1.957	2.062	488.432
S.D.	0.015	0.005	0.007	0.487	0.077	0.006	0.027	1.557
% R.S.D.	0.731	0.228	0.326	1.529	2.008	0.297	1.328	0.319

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	2.038	2.437	1.469	2.133	1.959	2.023	6.185	4.389
S.D.	0.005	0.074	0.004	0.006	0.005	0.009	0.006	0.013
% R.S.D.	0.238	3.033	0.255	0.304	0.256	0.440	0.103	0.285

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	2.054	2.016	2.078	2.083	2.028
S.D.	0.007	0.082	0.005	0.005	0.052
% R.S.D.	0.320	4.071	0.260	0.229	2.551

Identity 1: ICSA Identity 2: Quality Control 2:11 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	0.000	0.002	-0.038	0.028	201.866	0.006	0.001	0.001
S.D.	0.001	0.000	0.024	0.004	0.294	0.002	0.001	0.000
% R.S.D.	158.847	1.560	64.888	15.870	0.146	31.775	68.460	24.223

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	-0.006	0.003	0.005	101.169	102.952	0.005	0.016	-0.020
S.D.	0.001	0.003	0.001	0.221	0.123	0.002	0.005	0.033
% R.S.D.	10.299	117.133	18.597	0.219	0.120	48.295	30.154	163.826

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.016	0.024	0.004	0.037	0.008	94.180	0.044	189.190
S.D.	0.008	0.005	0.000	0.002	0.015	0.204	0.006	1.863
% R.S.D.	52.116	20.175	4.383	5.739	196.132	0.217	13.705	0.984

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.001	0.086	0.031	0.011	-0.000	0.002	0.014	-0.110
S.D.	0.002	0.005	0.000	0.008	0.001	0.001	0.001	0.020
% R.S.D.	146.236	6.231	1.531	73.300	824.590	39.618	5.927	18.235

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.009	0.073	-0.000	0.003	-0.026
S.D.	0.000	0.018	0.001	0.000	0.013
% R.S.D.	3.893	24.363	203.165	4.960	49.299

Identity 1: ICSAB Identity 2: Quality Control 2:14 PM June 21, 1996
Task name : OPTIMA
Sample Weight : 1.0000 Solution Volume : 1.00
On-Peak Integrations : 3 Off-Peak Integrations : 1

	Zr (ppm)	Sr (ppm)	Bi (ppm)	Si (ppm)	Al (ppm)	Co (ppm)	Cu (ppm)	Li (ppm)
Mean	-0.003	0.002	-0.062	0.020	200.791	0.487	0.516	0.930
S.D.	0.001	0.000	0.010	0.002	0.322	0.004	0.001	0.006
% R.S.D.	37.698	4.323	15.920	12.090	0.160	0.790	0.276	0.616

	Zn (ppm)	Ni (ppm)	La (ppm)	Fe (ppm)	Ca (ppm)	Cr (ppm)	Nd (ppm)	U (ppm)
Mean	0.993	0.998	0.005	100.972	101.845	0.508	0.030	-0.057
S.D.	0.002	0.000	0.004	0.248	0.163	0.001	0.002	0.052
% R.S.D.	0.187	0.031	72.785	0.246	0.160	0.192	8.006	91.239

	Ce (ppm)	Sm (ppm)	Ba (ppm)	P (ppm)	S (ppm)	Mg (ppm)	As (ppm)	Na (ppm)
Mean	0.005	0.014	0.516	0.054	0.002	92.168	0.055	189.920
S.D.	0.014	0.010	0.000	0.016	0.010	0.306	0.011	0.832
% R.S.D.	263.063	72.975	0.085	30.159	557.999	0.332	20.001	0.438

	Mo (ppm)	Se (ppm)	Ag (ppm)	Pb (ppm)	Ti (ppm)	Cd (ppm)	B (ppm)	K (ppm)
Mean	0.002	0.087	1.045	1.049	-0.001	1.017	0.011	-0.191
S.D.	0.001	0.013	0.001	0.014	0.000	0.002	0.000	0.026
% R.S.D.	40.274	15.089	0.143	1.335	20.026	0.194	1.727	13.590

	Mn (ppm)	Sb (ppm)	V (ppm)	Be (ppm)	Tl (ppm)
Mean	0.519	0.086	0.505	0.510	0.003
S.D.	0.001	0.025	0.001	0.000	0.013
% R.S.D.	0.118	29.148	0.145	0.094	463.787