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

DOCUMENT NUMBER: SD-WM-DP-164

SECTION 7 **OF** 12

TITLE: Final Report for Tank 241BY104 Rotary Mode Cores 116 & 117 [Pgs 1196 Thru 1395]

DATE: 06/25/1996

ORIGINATOR: Benar CJ

CO: WHC

RECIPIENT:

CO:

REFERENCES: ECN-629043

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 DUP Date: 01/15/96 Time: 01:41:43

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

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	17.60	97.73
3	1.50	563.00	96.87
4	2.00	1222.80	53.96
5	2.51	1537.00	20.44
6	3.01	1647.00	6.68
7	3.51	1695.70	2.87
8	4.00	1721.70	1.51
9	4.50	1733.30	0.67
10	5.00	1739.20	0.34
11	5.50	1743.40	0.24
12	6.00	1747.00	0.21
13	6.50	1749.90	0.17
14	7.00	1752.10	0.13
15	7.50	1754.20	0.12
16	8.00	1756.20	0.11
17	8.50	1757.80	0.09
18	9.00	1759.10	0.07
19	9.50	1760.70	0.09
20	10.00	1762.20	0.09
21	10.50	1763.30	0.06
22	11.00	1764.50	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 5.060281 micrograms carbon
BLANK FACTOR = 5.060281 / 11.00061 = +4.6E-01 ug/min Carbon

SAMPLE RESULTS:
(1764.5 - 5.061151)(1)/(1) = +1.7594E+03 g/L Carbon
(1764.5 - 5.061151)(1)/(1)(12) = +1.4662E+02 Molar Carbon

SS .0752

Sample Run By: _____
SL HOOD 00000

1.759e3 / 0.0752 = 2.34e4

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03702 Date: 01/15/96 Time: 04:32:34

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

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	38.80	99.23
3	1.51	688.70	94.37
4	2.00	1435.10	52.01
5	2.50	2015.70	28.80
6	3.00	2223.30	9.34
7	3.50	2322.10	4.25
8	4.00	2376.90	2.31
9	4.50	2405.60	1.19
10	5.00	2417.80	0.50
11	5.50	2422.30	0.19
12	6.00	2425.60	0.14
13	6.50	2428.10	0.10
14	7.00	2430.00	0.08
15	7.50	2431.60	0.07
16	8.00	2433.40	0.07
17	8.50	2434.50	0.05
18	9.00	2435.80	0.05
19	9.50	2436.90	0.05
20	10.00	2437.90	0.04
21	10.50	2438.60	0.03
22	11.00	2439.50	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 5.060281 micrograms carbon
BLANK FACTOR = 5.060281 / 11.00061 = +4.6E-01 ug/min Carbon

SAMPLE RESULTS:
(2439.5 - 5.060309)(1)/(1) = +2.4344E+03 g/L Carbon
(2439.5 - 5.060309)(1)/(1)(12) = +2.0287E+02 Molar Carbon

SS .1009g

Sample Run By: _____
SL HOOD 00000

1197

2434/0.1009 = 2.41e4

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0 WHC-SD-WM-DP-164, REV. 1

Sample: S95T03702 DUP Date: 01/15/96 Time: 04:57:44

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	21.40	98.13
3	1.51	489.30	95.63
4	2.00	1069.00	54.23
5	2.50	1455.70	26.56
6	3.00	1660.70	12.34
7	3.50	1753.20	5.28
8	4.00	1806.30	2.94
9	4.50	1836.20	1.63
10	5.00	1849.10	0.70
11	5.50	1853.40	0.23
12	6.00	1856.20	0.15
13	6.50	1858.30	0.11
14	7.00	1860.20	0.10
15	7.50	1861.70	0.08
16	8.00	1862.70	0.05
17	8.50	1864.10	0.08
18	9.00	1865.30	0.06
19	9.50	1866.20	0.05
20	10.00	1866.80	0.03
21	10.50	1867.80	0.05
22	11.00	1868.20	0.02

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(1868.2 - 24.31148)(1)/(1) = +1.8439E+03 g/L Carbon
(1868.2 - 24.31148)(1)/(1)(12) = +1.5366E+02 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .1015g

Sample Run By: SL HOOD 00000

1844/0.1015 = 1.82e4

1198

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03702 TRP Date: 01/15/96 Time: 05:29:07

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

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	9.20	98.91
3	1.51	274.20	96.64
4	2.01	703.50	61.02
5	2.50	1028.30	31.59
6	3.00	1211.90	15.15
7	3.50	1297.30	6.58
8	4.00	1347.30	3.71
9	4.50	1375.20	2.03
10	5.00	1387.30	0.87
11	5.50	1391.20	0.28
12	6.00	1393.00	0.13
13	6.50	1394.50	0.11
14	7.00	1395.60	0.08
15	7.50	1396.70	0.08
16	8.00	1397.80	0.08
17	8.50	1398.50	0.05
18	9.00	1399.20	0.05
19	9.50	1399.90	0.05
20	10.00	1400.60	0.05
21	10.50	1401.00	0.03
22	11.00	1401.60	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 5.060281 micrograms carbon
BLANK FACTOR = 5.060281 / 11.00061 = +4.6E-01 ug/min Carbon

SAMPLE RESULTS:
(1401.6 - 5.060295)(1)/(1) = +1.3965E+03 g/L Carbon
(1401.6 - 5.060295)(1)/(1)(12) = +1.1638E+02 Molar Carbon

Sample Run By: _____
SL HOOD 00000

SS .0796g

1397/0.0796 = 1.75e4

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>WHC-SD-WM-DP-164, REV. 1

Sample: BLK Date: 01/14/96 Time: 18:33:09

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

Analyst : SL HOOD
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	5.60	83.93
4	2.00	10.10	44.55
5	2.50	13.80	26.81
6	3.00	15.40	10.39
7	3.50	16.70	7.78
8	4.00	17.70	5.65
9	4.50	18.50	4.32
10	5.00	19.20	3.65
11	5.50	19.80	3.03
12	6.00	20.30	2.46
13	6.50	20.80	2.40
14	7.00	21.10	1.42
15	7.50	21.60	2.31
16	8.00	22.00	1.82
17	8.50	22.30	1.35
18	9.00	22.70	1.76
19	9.50	23.30	2.58
20	10.00	23.60	1.27
21	10.50	24.00	1.67
22	11.00	24.30	1.23

BLANK VALUE = 24.3 micrograms carbon
BLANK FACTOR = 24.3 / 11.00061 = +2.21E+00 ug/min Carbon

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

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: STD Date: 01/14/96 Time: 19:10:57

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	15.60	98.72
3	1.51	145.20	89.26
4	2.01	386.00	62.38
5	2.51	517.10	25.35
6	3.01	563.50	8.23
7	3.51	579.00	2.68
8	4.01	583.00	0.69
9	4.50	584.90	0.32
10	5.00	586.10	0.20
11	5.50	587.10	0.17
12	6.00	587.80	0.12
13	6.50	588.30	0.08
14	7.00	588.90	0.10
15	7.50	589.30	0.07
16	8.00	589.70	0.07
17	8.50	590.20	0.08
18	9.00	590.60	0.07
19	9.50	591.00	0.07
20	10.00	591.40	0.07
21	10.50	591.80	0.07
22	11.00	592.20	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(592.2 - 24.3154)(1)/(200) = +2.839E+00 g/L Carbon
(592.2 - 24.3154)(1)/(200)(12) = +2.366E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: B-2 Date: 01/14/96 Time: 19:35:39

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	0.50	100.00
3	1.50	3.70	86.49
4	2.00	7.90	53.16
5	2.50	10.80	26.85
6	3.00	12.50	13.60
7	3.50	13.50	7.41
8	4.00	14.10	4.26
9	4.50	14.60	3.42
10	5.00	15.10	3.31
11	5.50	15.60	3.21
12	6.00	15.90	1.89
13	6.50	16.30	2.45
14	7.00	16.70	2.40
15	7.50	16.90	1.18
16	8.00	17.20	1.74
17	8.50	17.30	0.58
18	9.00	17.70	2.26
19	9.50	17.90	1.12
20	10.00	18.20	1.65
21	10.50	18.30	0.55
22	11.00	18.60	1.61

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(18.6 - 24.30946)(1)/(1) = < 5.00 E-3 g/L Carbon
(18.6 - 24.30946)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0 WHC-SD-WM-DP-164, REV. 1

Sample: S95T03642 Date: 01/14/96 Time: 21:03:17

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	10.80	98.15
3	1.51	118.90	90.92
4	2.00	259.20	54.13
5	2.50	349.10	25.75
6	3.00	389.40	10.35
7	3.50	406.70	4.25
8	4.00	412.90	1.50
9	4.50	416.70	0.91
10	5.00	418.70	0.48
11	5.50	420.50	0.43
12	6.00	421.70	0.28
13	6.50	422.80	0.26
14	7.00	423.60	0.19
15	7.50	424.60	0.24
16	8.00	425.20	0.14
17	8.50	425.80	0.14
18	9.00	426.70	0.21
19	9.50	427.20	0.12
20	10.00	427.70	0.12
21	10.50	428.20	0.12
22	11.00	428.50	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(428.5 - 24.30946)(1)/(1) = +4.042E+02 g/L Carbon
(428.5 - 24.30946)(1)/(1)(12) = +3.368E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0801 g

Sample Run By: SL HOOD 00000

1203

404/0.0801 = 5.04e3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03642 DUP Date: 01/14/96 Time: 21:31:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	22.40	97.32
3	1.51	171.00	86.90
4	2.00	333.00	48.65
5	2.50	435.90	23.61
6	3.00	486.10	10.33
7	3.50	507.80	4.27
8	4.00	517.20	1.82
9	4.50	523.10	1.13
10	5.00	528.30	0.98
11	5.50	533.60	0.99
12	6.00	538.40	0.89
13	6.50	543.00	0.85
14	7.00	546.50	0.64
15	7.50	549.10	0.47
16	8.00	550.50	0.25
17	8.50	552.10	0.29
18	9.00	553.20	0.20
19	9.50	554.20	0.18
20	10.00	555.00	0.14
21	10.50	555.60	0.11
22	11.00	556.40	0.14

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(556.4 - 24.31162)(1)/(1) = +5.321E+02 g/L Carbon
(556.4 - 24.31162)(1)/(1)(12) = +4.434E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0879g

Sample Run By: SL HOOD 00000

532/0.0879 = 6.05e3

1204

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03542 SPK Date: 01/14/96 Time: 22:01:09

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	33.20	97.29
3	1.51	235.20	85.88
4	2.01	560.00	58.00
5	2.50	820.00	31.71
6	3.00	919.80	10.85
7	3.50	960.90	4.28
8	4.00	978.10	1.76
9	4.50	984.90	0.69
10	5.00	989.40	0.45
11	5.50	992.90	0.35
12	6.00	995.80	0.29
13	6.50	998.00	0.22
14	7.00	999.70	0.17
15	7.50	1001.00	0.13
16	8.00	1002.40	0.14
17	8.50	1003.30	0.09
18	9.00	1004.40	0.11
19	9.50	1005.50	0.11
20	10.00	1006.30	0.08
21	10.50	1007.00	0.07
22	11.00	1007.70	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(1007.7 - 24.30946)(1)/(1) = +9.8339E+02 g/L Carbon
(1007.7 - 24.30946)(1)/(1)(12) = +8.1949E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0804g

Sample Run By: _____
SL HOOD 00000

$$\frac{1007.7}{\left(\frac{428.5}{0.0804}\right)0.0804 + 300} \times 100 = 1205$$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV. 1

Sample: S95T03645 Date: 01/14/96 Time: 22:25:10

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	43.90	97.95
3	1.51	305.50	85.63
4	2.00	514.00	40.56
5	2.50	619.20	16.99
6	3.00	666.80	7.14
7	3.50	687.20	2.97
8	4.00	694.20	1.01
9	4.50	698.60	0.63
10	5.00	701.20	0.37
11	5.50	703.80	0.37
12	6.00	706.30	0.35
13	6.50	707.90	0.23
14	7.00	709.40	0.21
15	7.50	710.60	0.17
16	8.00	712.10	0.21
17	8.50	713.10	0.14
18	9.00	714.00	0.13
19	9.50	715.40	0.20
20	10.00	716.10	0.10
21	10.50	717.20	0.15
22	11.00	718.00	0.11

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(718 - 24.30919)(1)/(1) = +6.937E+02 g/L Carbon
(718 - 24.30919)(1)/(1)(12) = +5.781E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .1109g

Sample Run By: _____
SL HOOD 00000

694/0.1109 = 6.26e3

1206

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03645 DUP Date: 01/14/96 Time: 22:51:26

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	27.30	95.24
3	1.50	177.90	84.65
4	2.00	321.20	44.61
5	2.50	400.70	19.84
6	3.00	442.00	9.34
7	3.50	460.50	4.02
8	4.00	466.90	1.37
9	4.50	470.40	0.74
10	5.00	473.10	0.57
11	5.50	475.40	0.48
12	6.00	477.30	0.40
13	6.50	478.70	0.29
14	7.00	479.90	0.25
15	7.50	481.20	0.27
16	8.00	482.70	0.31
17	8.50	483.40	0.14
18	9.00	484.40	0.21
19	9.50	485.50	0.23
20	10.00	486.30	0.16
21	10.50	487.00	0.14
22	11.00	487.70	0.14

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(487.7 - 24.30973)(1)/(1) = +4.634E+02 g/L Carbon
(487.7 - 24.30973)(1)/(1)(12) = +3.862E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0737g

Sample Run By: SL HOOD 00000

463/0.0737 = 6.28e3

1207

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03633 Date: 01/14/96 Time: 23:16:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	13.80	94.93
3	1.50	139.10	90.08
4	2.00	301.20	53.82
5	2.50	401.60	25.00
6	3.00	455.70	11.87
7	3.50	485.30	6.10
8	4.00	500.70	3.08
9	4.50	510.50	1.92
10	5.00	518.10	1.47
11	5.50	525.40	1.39
12	6.00	531.60	1.17
13	6.50	537.30	1.06
14	7.00	542.50	0.96
15	7.50	547.50	0.91
16	8.00	551.60	0.74
17	8.50	555.20	0.65
18	9.00	558.10	0.52
19	9.50	561.00	0.52
20	10.00	563.50	0.44
21	10.50	565.40	0.34
22	11.00	567.20	0.32

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(567.2 - 24.3073)(1)/(1) = +5.429E+02 g/L Carbon
(567.2 - 24.3073)(1)/(1)(12) = +4.524E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0847g

Sample Run By: SL HOOD 00000

543/0.0847 = 6.41e3

1208

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03633 DUP Date: 01/14/96 Time: 23:43:04

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	32.00	96.88
3	1.51	222.70	85.63
4	2.00	377.10	40.94
5	2.50	451.00	16.39
6	3.00	491.00	8.15
7	3.51	511.30	3.97
8	4.01	523.60	2.35
9	4.50	531.10	1.41
10	5.00	537.10	1.12
11	5.50	542.20	0.94
12	6.00	546.80	0.84
13	6.50	550.70	0.71
14	7.00	553.70	0.54
15	7.50	556.70	0.54
16	8.00	559.20	0.45
17	8.50	561.20	0.36
18	9.00	563.00	0.32
19	9.50	564.90	0.34
20	10.00	566.10	0.21
21	10.50	567.40	0.23
22	11.00	568.60	0.21

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(568.6 - 24.31324)(1)/(1) = +5.443E+02 g/L Carbon
(568.6 - 24.31324)(1)/(1)(12) = +4.536E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .08829

Sample Run By: _____
SL HOOD 00000

544/0.0882 = 6.17e3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03634 Date: 01/15/96 Time: 02:21:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	95.40	99.16
3	1.51	306.80	68.90
4	2.00	359.20	14.59
5	2.50	384.00	6.46
6	3.00	397.50	3.40
7	3.50	402.90	1.34
8	4.00	406.20	0.81
9	4.50	408.80	0.64
10	5.00	410.60	0.44
11	5.50	412.50	0.46
12	6.00	414.20	0.41
13	6.50	414.80	0.14
14	7.00	416.00	0.29
15	7.50	416.80	0.19
16	8.00	417.40	0.14
17	8.50	418.40	0.24
18	9.00	418.80	0.10
19	9.50	419.90	0.26
20	10.00	420.60	0.17
21	10.50	421.20	0.14
22	11.00	421.70	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(421.7 - 24.30963)(1)/(1) = +3.974E+02 g/L Carbon
(421.7 - 24.30963)(1)/(1)(12) = +3.312E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0819g

Sample Run By: _____
SL HOOD 00000

397/0.0819 = 4.85e3

1210

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV. 1

Sample: S95T03634 DUP Date: 01/15/96 Time: 02:46:12

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.30	0.00
2	1.01	46.00	97.17
3	1.50	257.70	82.15
4	2.00	393.50	34.51
5	2.50	452.10	12.96
6	3.00	482.00	6.20
7	3.50	494.90	2.61
8	4.00	499.90	1.00
9	4.50	502.70	0.56
10	5.00	504.50	0.36
11	5.50	506.40	0.38
12	6.00	507.90	0.30
13	6.50	509.30	0.27
14	7.00	510.90	0.31
15	7.50	511.80	0.18
16	8.00	513.00	0.23
17	8.50	514.00	0.19
18	9.00	514.90	0.17
19	9.50	515.80	0.17
20	10.00	516.60	0.15
21	10.50	517.60	0.19
22	11.00	518.50	0.17

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(518.5 - 24.3074)(1)/(1) = +4.942E+02 g/L Carbon
(518.5 - 24.3074)(1)/(1)(12) = +4.118E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0995g

Sample Run By: _____
SL HOOD 00000

4.94/0.0995 = 4.96e3

1211

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03635 Date: 01/15/96 Time: 03:53:14

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.70	0.00
2	1.01	45.30	94.04
3	1.50	301.90	85.00
4	2.00	511.40	40.97
5	2.50	596.30	14.24
6	3.00	639.10	6.70
7	3.50	659.30	3.06
8	4.00	668.30	1.35
9	4.50	671.70	0.51
10	5.00	674.80	0.46
11	5.50	677.30	0.37
12	6.00	679.40	0.31
13	6.50	681.30	0.28
14	7.00	682.80	0.22
15	7.50	684.20	0.20
16	8.00	685.30	0.16
17	8.50	686.70	0.20
18	9.00	687.90	0.17
19	9.50	689.50	0.23
20	10.00	690.30	0.12
21	10.50	691.00	0.10
22	11.00	692.00	0.14

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(692 - 24.31148)(1)/(1) = +6.677E+02 g/L Carbon
(692 - 24.31148)(1)/(1)(12) = +5.564E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .1058g

Sample Run By: SL HOOD 00000

668/0.1058 = 6.31e3

1212

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03635 DUP Date: 01/15/96 Time: 04:20:34

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	20.50	98.05
3	1.50	237.40	91.36
4	2.00	488.60	51.41
5	2.50	615.00	20.55
6	3.00	668.80	8.04
7	3.50	697.00	4.05
8	4.00	709.40	1.75
9	4.50	713.60	0.59
10	5.00	717.40	0.53
11	5.50	718.90	0.21
12	6.00	720.60	0.24
13	6.50	722.20	0.22
14	7.00	723.00	0.11
15	7.50	724.20	0.17
16	8.00	724.90	0.10
17	8.50	726.10	0.17
18	9.00	726.60	0.07
19	9.50	727.40	0.11
20	10.00	727.90	0.07
21	10.50	728.30	0.05
22	11.00	728.90	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(728.9 - 24.3074)(1)/(1) = +7.046E+02 g/L Carbon
(728.9 - 24.3074)(1)/(1)(12) = +5.872E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0965g

Sample Run By: _____
SL HOOD 00000

705 / .0965 = 7.31e3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 Date: 01/15/96 Time: 01:27:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.00	38.30	98.69
3	1.50	255.70	85.02
4	2.00	423.90	39.68
5	2.50	498.80	15.02
6	%-1437.00	534.00	6.59
7	%-1436.50	548.40	2.63
8	%-1436.00	553.70	0.96
9	%-1435.50	556.60	0.52
10	%-1435.00	559.00	0.43
11	%-1434.50	561.00	0.36
12	%-1434.00	562.60	0.28
13	%-1433.50	564.30	0.30
14	%-1433.00	566.10	0.32
15	%-1432.50	567.60	0.26
16	%-1432.00	569.20	0.28
17	%-1431.50	570.50	0.23
18	%-1431.00	571.60	0.19
19	%-1430.50	572.70	0.19
20	%-1430.00	573.30	0.10
21	%-1429.50	574.10	0.14
22	%-1429.00	575.20	0.19

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS: 24.31
(575.2 --3158.091)(1)/(1) = +3.733E+03 g/L Carbon
(575.2 --3158.091)(1)/(1)(12) = +3.111E+02 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0915g

Sample Run By: SL HOOD 00000

1214

Please recalculate
575.2 - 24.31 / 0.0915 = 6.02e3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 DUP Date: 01/15/96 Time: 01:54:16

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	109.40	99.18
3	1.50	382.00	71.36
4	2.00	443.00	13.77
5	2.50	474.00	6.54
6	3.00	489.70	3.21
7	3.50	497.50	1.57
8	4.00	502.30	0.96
9	4.50	505.40	0.61
10	5.00	507.80	0.47
11	5.50	509.70	0.37
12	6.00	511.40	0.33
13	6.50	512.30	0.18
14	7.00	513.10	0.16
15	7.50	513.90	0.16
16	8.00	514.30	0.08
17	8.50	515.20	0.17
18	9.00	515.80	0.12
19	9.50	516.40	0.12
20	10.00	516.60	0.04
21	10.50	517.40	0.15
22	11.00	518.00	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(518 - 24.30961)(1)/(1) = +4.937E+02 g/L Carbon
(518 - 24.30961)(1)/(1)(12) = +4.114E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0752

Sample Run By: SL HOOD 1215 00000

494/0.0752 = 6.57e3

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03702 Date: 01/15/96 Time: 04:45:14

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	74.00	99.59
3	1.51	252.20	70.66
4	2.00	335.90	24.92
5	2.50	382.20	12.11
6	3.00	405.30	5.70
7	3.50	413.30	1.94
8	4.00	416.60	0.79
9	4.50	418.60	0.48
10	5.00	420.10	0.36
11	5.50	421.40	0.31
12	6.00	422.30	0.21
13	6.50	423.10	0.19
14	7.00	423.70	0.14
15	7.50	424.30	0.14
16	8.00	425.10	0.19
17	8.50	425.50	0.09
18	9.00	426.00	0.12
19	9.50	426.60	0.14
20	10.00	427.20	0.14
21	10.50	427.80	0.14
22	11.00	428.40	0.14

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(428.4 - 24.31371)(1)/(1) = +4.041E+02 g/L Carbon
(428.4 - 24.31371)(1)/(1)(12) = +3.367E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .1009g

Sample Run By: _____
SL HOOD 00000

404/0.1009 = 4.00e3

1216

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03702 DUP Date: 01/15/96 Time: 05:10:03

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.21 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	14.50	100.00
3	1.51	134.70	89.24
4	2.01	282.60	52.34
5	2.51	360.10	21.52
6	3.01	403.50	10.76
7	3.51	426.10	5.30
8	4.01	435.30	2.11
9	4.50	438.70	0.78
10	5.00	441.10	0.54
11	5.50	442.00	0.20
12	6.00	442.90	0.20
13	6.50	444.00	0.25
14	7.00	444.40	0.09
15	7.50	445.10	0.16
16	8.00	445.70	0.13
17	8.50	446.70	0.22
18	9.00	447.70	0.22
19	9.50	448.10	0.09
20	10.00	448.50	0.09
21	10.50	449.00	0.11
22	11.00	449.70	0.16

USER INPUT BLANK VALUE
BLANK VALUE = 24.31135 micrograms carbon
BLANK FACTOR = 24.31135 / 11.00061 = +2.2E+00 ug/min Carbon

SAMPLE RESULTS:
(449.7 - 24.3133)(1)/(1) = +4.254E+02 g/L Carbon
(449.7 - 24.3133)(1)/(1)(12) = +3.545E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .1015g

Sample Run By: _____
SL HOOD 00000

1217

425/0.1015 = 4.19e3

LABCORE Data Entry Template for Worklist# 4875

Analyst: KRM **Instrument:** CARB2 _____ **Book #** 17N120 16N12C

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

Worklist Comment: TICTOC BY-104 KRM

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID	1	0.7	N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID	1	1.5	N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID	6.00E2	6.10E2	N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID	3.00E3	3.01E3	N/A	ug/g
95000200	BY104 ROTARY	3	SAMPLE	S95T003781	0		@TICTOC1 TIC-02	SOLID	N/A	3.05E4	5.00	ug/g
95000200	BY104 ROTARY	3	SAMPLE	S95T003781	0		@TICTOC1 TOC-02	SOLID	N/A	3.22E3	40.0	ug/g
95000200	BY104 ROTARY	4	DUP	S95T003781	0		@TICTOC1 TIC-02	SOLID	3.05E4	3.06E4	N/A	ug/g
95000200	BY104 ROTARY	4	DUP	S95T003781	0		@TICTOC1 TOC-02	SOLID	3.22E3	3.56E3	N/A	ug/g
95000200	BY104 ROTARY	5	SPK	S95T003781	0		@TICTOC1 TIC-02	SOLID	100	109	N/A	ug/g
95000200	BY104 ROTARY	5	SPK	S95T003781	0		@TICTOC1 TOC-02	SOLID	100	111	N/A	ug/g
95000200	BY104 ROTARY	6	SAMPLE	S95T003782	0		@TICTOC1 TIC-02	SOLID	N/A	6.45E3	5.00	ug/g
95000200	BY104 ROTARY	6	SAMPLE	S95T003782	0		@TICTOC1 TOC-02	SOLID	N/A	1.01E4	40.0	ug/g
95000200	BY104 ROTARY	7	DUP	S95T003782	0		@TICTOC1 TIC-02	SOLID	6.45E3	4.30E3	N/A	ug/g
95000200	BY104 ROTARY	7	DUP	S95T003782	0		@TICTOC1 TOC-02	SOLID	1.01E4	1.06E4	N/A	ug/g
95000200	BY104 ROTARY	8	SAMPLE	S95T003784	0		@TICTOC1 TIC-02	SOLID	N/A	3.92E3	5.00	ug/g
95000200	BY104 ROTARY	8	SAMPLE	S95T003784	0		@TICTOC1 TOC-02	SOLID	N/A	3.06E3	40.00	ug/g
95000200	BY104 ROTARY	9	DUP	S95T003784	0		@TICTOC1 TIC-02	SOLID	3.92E3	3.88E3	N/A	ug/g
95000200	BY104 ROTARY	9	DUP	S95T003784	0		@TICTOC1 TOC-02	SOLID	3.06E3	2.95E3	N/A	ug/g

Data Entry Comments: TIC only RUNS 1/15/96

DID TRIPL ON S95T003782 - BROWN THIN PASTE WITH HARD CHUNKS - 6.42E3

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 4875

GROUP	PROJECT	S TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
95000200	BY104 ROTARY	10 SAMPLE	S95T003785	0		@TICTOC1 TIC-02	SOLID	N/A	5.52E3	5.00	ug/g
95000200	BY104 ROTARY	10 SAMPLE	S95T003785	0		@TICTOC1 TOC-02	SOLID	N/A	3.18E3	40.0	ug/g
95000200	BY104 ROTARY	11 DUP	S95T003785	0		@TICTOC1 TIC-02	SOLID	5.52E3	5.06E3	N/A	ug/g
95000200	BY104 ROTARY	11 DUP	S95T003785	0		@TICTOC1 TOC-02	SOLID	3.18E3	3.03E3	N/A	ug/g
95000180	BY104 ROTARY	12 SAMPLE	S95T003632	0		@TICTOC1 TIC-02	SOLID	N/A	2.52E4	5.00	ug/g
95000180	BY104 ROTARY	12 SAMPLE	S95T003632	0		@TICTOC1 TOC-02	SOLID	N/A	5.42E3	40.0	ug/g
95000180	BY104 ROTARY	13 DUP	S95T003632	0		@TICTOC1 TIC-02	SOLID	2.52E4	2.36E4	N/A	ug/g
95000180	BY104 ROTARY	13 DUP	S95T003632	0		@TICTOC1 TOC-02	SOLID	5.42E3	6.06E3	N/A	ug/g
95000180	BY104 ROTARY	14 SAMPLE	S95T003528	0		@TICTOC1 TIC-02	SOLID	N/A	2.06E4	5.00	ug/g
95000180	BY104 ROTARY	14 SAMPLE	S95T003528	0		@TICTOC1 TOC-02	SOLID	N/A	2.81E4	40.0	ug/g
95000180	BY104 ROTARY	15 DUP	S95T003528	0		@TICTOC1 TIC-02	SOLID	2.06E4	1.93E4	N/A	ug/g
95000180	BY104 ROTARY	15 DUP	S95T003528	0		@TICTOC1 TOC-02	SOLID	2.81E4	2.45E4	N/A	ug/g

Final page for worklist # 4875

Analyst Signature Date 1-13-96 0530pm

Analyst Signature Date 1-14-96

Reviewed RW Schmeck 1/16/96

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-164, REV. 1

Sample: BLK Date: 01/13/96 Time: 07:02:13

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

Analyst : KR MONTEITH
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	1.50	1.00	40.00
4	2.00	1.70	41.18
5	2.50	2.00	15.00
6	3.00	2.40	16.67
7	3.50	2.70	11.11
8	4.00	3.10	12.90
9	4.50	3.30	6.06
10	5.00	3.70	10.81
11	5.50	3.90	5.13
12	6.00	4.30	9.30
13	6.50	4.60	6.52
14	7.00	4.90	6.12
15	7.50	5.10	3.92
16	8.00	5.50	7.27
17	8.50	5.80	5.17
18	9.00	6.00	3.33
19	9.50	6.30	4.76
20	10.00	6.60	4.55
21	10.50	6.90	4.35
22	11.00	7.20	4.17

BLANK VALUE = 7.2 micrograms carbon
BLANK FACTOR = 7.2 / 10.99966 = +6.5E-01 ug/min Carbon

Sample Run By: 1-13-96
KR MONTEITH 00000

SIGNATURE ABOVE REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 1220 TO 1252

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-164, REV. 1

Sample: BLK Date: 01/13/96 Time: 07:16:34

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	1.10	81.82
3	1.51	4.60	76.09
4	2.00	9.00	48.89
5	2.50	12.20	26.23
6	3.00	13.80	11.59
7	3.50	14.50	4.83
8	4.00	15.20	4.61
9	4.50	15.70	3.18
10	5.00	16.20	3.09
11	5.50	16.70	2.99
12	6.00	17.00	1.76
13	6.50	17.50	2.86
14	7.00	17.90	2.23
15	7.50	18.30	2.19
16	8.00	18.70	2.14
17	8.50	19.00	1.58
18	9.00	19.40	2.06
19	9.50	19.70	1.52
20	10.00	20.00	1.50
21	10.50	20.30	1.48
22	11.00	20.70	1.93

BLANK VALUE = 20.7 micrograms carbon
BLANK FACTOR = 20.7 / 11.00067 = +1.88E+00 ug/min Carbon

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

Sample Run By: _____
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: STD Date: 01/13/96 Time: 07:42:03

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	31.60	99.05
3	1.51	189.10	83.29
4	2.01	423.10	55.31
5	2.51	550.20	23.10
6	3.00	594.40	7.44
7	3.50	607.80	2.20
8	4.00	612.40	0.75
9	4.50	614.90	0.41
10	5.00	616.20	0.21
11	5.50	617.20	0.16
12	6.00	618.00	0.13
13	6.50	618.70	0.11
14	7.00	619.40	0.11
15	7.50	620.10	0.11
16	8.00	620.60	0.08
17	8.50	621.10	0.08
18	9.00	621.60	0.08
19	9.50	622.00	0.06
20	10.00	622.50	0.08
21	10.50	622.90	0.06
22	11.00	623.30	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(623.3 - 20.67971)(1)/(200) = +3.013E+00 g/L Carbon
(623.3 - 20.67971)(1)/(200)(12) = +2.511E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: STD Date: 01/13/96 Time: 07:30:01

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	61.40	98.05
3	1.51	213.80	71.28
4	2.00	366.60	41.68
5	2.50	479.90	23.61
6	3.00	546.80	12.23
7	3.50	581.80	6.02
8	4.00	598.30	2.76
9	4.50	606.10	1.29
10	5.00	610.10	0.66
11	5.50	612.00	0.31
12	6.00	613.20	0.20
13	6.50	613.80	0.10
14	7.00	614.30	0.08
15	7.50	614.70	0.07
16	8.00	615.20	0.08
17	8.50	615.60	0.06
18	9.00	616.00	0.06
19	9.50	616.40	0.06
20	10.00	616.80	0.06
21	10.50	617.10	0.05
22	11.00	617.50	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(617.5 - 7.150456)(1)/(1000) = +6.103E-01 g/L Carbon
(617.5 - 7.150456)(1)/(1000)(12) = +5.086E-02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. I

Sample: R BLK Date: 01/13/96 Time: 09:10:31

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.00	1.30	84.62
3	1.50	5.50	76.36
4	2.00	10.70	48.60
5	2.50	13.90	23.02
6	3.00	15.70	11.46
7	3.50	16.70	5.99
8	4.00	17.30	3.47
9	4.50	17.90	3.35
10	5.00	18.30	2.19
11	5.50	18.70	2.14
12	6.00	19.20	2.60
13	6.50	19.50	1.54
14	7.00	19.90	2.01
15	7.50	20.30	1.97
16	8.00	20.50	0.98
17	8.50	20.90	1.91
18	9.00	21.20	1.42
19	9.50	21.40	0.93
20	10.00	21.70	1.38
21	10.50	22.10	1.81
22	11.00	22.20	0.45

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(22.2 - 20.68126)(1)/(1) = +1.52E+00 g/L Carbon
(22.2 - 20.68126)(1)/(1)(12) = +1.27E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: R BLK Date: 01/13/96 Time: 08:00:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.51	1.00	50.00
4	2.00	1.50	33.33
5	2.50	2.00	25.00
6	3.00	2.30	13.04
7	3.50	2.60	11.54
8	4.00	2.90	10.34
9	4.50	3.20	9.37
10	5.00	3.50	8.57
11	5.50	3.70	5.41
12	6.00	4.00	7.50
13	6.50	4.20	4.76
14	7.00	4.50	6.67
15	7.50	4.80	6.25
16	8.00	5.00	4.00
17	8.50	5.20	3.85
18	9.00	5.50	5.45
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 = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(6.5 - 7.149226)(1)/(1) = < 5.00 E-3 g/L Carbon
(6.5 - 7.149226)(1)/(1)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3781 Date: 01/13/96 Time: 09:25:18

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.00	0.00
2	1.01	18.00	100.00
3	1.51	625.90	97.12
4	2.01	1372.80	54.41
5	2.50	2119.40	35.23
6	3.00	2866.60	26.07
7	3.50	3246.60	11.70
8	4.00	3301.50	1.66
9	4.50	3326.00	0.74
10	5.00	3335.20	0.28
11	5.50	3339.90	0.14
12	6.00	3343.00	0.09
13	6.50	3345.40	0.07
14	7.00	3347.60	0.07
15	7.50	3349.30	0.05
16	8.00	3350.90	0.05
17	8.50	3352.30	0.04
18	9.00	3353.40	0.03
19	9.50	3354.60	0.04
20	10.00	3355.60	0.03
21	10.50	3356.60	0.03
22	11.00	3357.40	0.02

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(3357.4 - 7.149801)(1)/(1) = +3.3503E+03 g/L Carbon
(3357.4 - 7.149801)(1)/(1)(12) = +2.7919E+02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1226

$\frac{3350.3}{.1100} = 3.05E^4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3781 Date: 01/13/96 Time: 09:37:10

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	59.10	98.31
3	1.50	211.40	72.04
4	2.00	299.20	29.34
5	2.50	339.00	11.74
6	3.00	353.80	4.18
7	3.50	359.40	1.56
8	4.00	362.50	0.86
9	4.50	364.60	0.58
10	5.00	366.10	0.41
11	5.50	367.50	0.38
12	6.00	368.60	0.30
13	6.50	369.70	0.30
14	7.00	370.50	0.22
15	7.50	371.40	0.24
16	8.00	372.00	0.16
17	8.50	372.60	0.16
18	9.00	373.10	0.13
19	9.50	373.80	0.19
20	10.00	374.40	0.16
21	10.50	374.90	0.13
22	11.00	375.40	0.13

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(375.4 - 20.68126)(1)/(1) = +3.547E+02 g/L Carbon
(375.4 - 20.68126)(1)/(1)(12) = +2.956E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

$\frac{354.7}{.1100} = 3.22E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3781 Date: 01/13/96 Time: 09:49:26

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	204.40	99.66
3	1.51	951.40	78.52
4	2.00	1698.50	43.99
5	2.50	2445.00	30.53
6	3.00	3191.80	23.40
7	3.50	3851.90	17.14
8	4.00	3907.40	1.42
9	4.50	3926.00	0.47
10	5.00	3935.90	0.25
11	5.50	3941.70	0.15
12	6.00	3945.40	0.09
13	6.50	3948.30	0.07
14	7.00	3950.50	0.06
15	7.50	3952.30	0.05
16	8.00	3954.20	0.05
17	8.50	3955.70	0.04
18	9.00	3957.10	0.04
19	9.50	3958.30	0.03
20	10.00	3959.40	0.03
21	10.50	3960.50	0.03
22	11.00	3961.70	0.03

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(3961.7 - 7.150436)(1)/(1) = +3.9545E+03 g/L Carbon
(3961.7 - 7.150436)(1)/(1)(12) = +3.2955E+02 Molar Carbon

Sample Run By: KR MONTEITH 00000

1228

$\frac{3954.5}{.1291} = 3.06E4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3781 Date: 01/13/96 Time: 10:01:43

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	103.80	98.84
3	1.51	276.90	62.51
4	2.00	378.10	26.77
5	2.50	431.70	12.42
6	3.00	453.60	4.83
7	3.50	461.20	1.65
8	4.00	464.90	0.80
9	4.50	467.50	0.56
10	5.00	469.30	0.38
11	5.50	470.90	0.34
12	6.00	472.40	0.32
13	6.50	473.50	0.23
14	7.00	474.50	0.21
15	7.50	475.40	0.19
16	8.00	476.30	0.19
17	8.50	476.90	0.13
18	9.00	477.60	0.15
19	9.50	478.20	0.13
20	10.00	478.90	0.15
21	10.50	479.30	0.08
22	11.00	479.80	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(479.8 - 20.68138)(1)/(1) = +4.591E+02 g/L Carbon
(479.8 - 20.68138)(1)/(1)(12) = +3.826E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

$\frac{459.1}{-1291} = 3.56 \times 10^{-3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3781 + SPK Date: 01/13/96 Time: 10:13:51

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	306.60	99.74
3	1.51	1053.10	70.89
4	2.01	1799.90	41.49
5	2.51	2547.10	29.34
6	3.01	3293.90	22.67
7	3.51	3566.90	7.65
8	4.01	3606.50	1.10
9	4.50	3619.40	0.36
10	5.00	3625.10	0.16
11	5.50	3628.70	0.10
12	6.00	3631.70	0.08
13	6.50	3633.80	0.06
14	7.00	3635.80	0.06
15	7.50	3637.60	0.05
16	8.00	3639.10	0.04
17	8.50	3640.40	0.04
18	9.00	3641.60	0.03
19	9.50	3642.90	0.04
20	10.00	3643.90	0.03
21	10.50	3644.90	0.03
22	11.00	3645.90	0.03

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(3645.9 - 7.151111)(1)/(1) = +3.6387E+03 g/L Carbon
(3645.9 - 7.151111)(1)/(1)(12) = +3.0323E+02 Molar Carbon

Sample Run By: KR MONTEITH 00000

$$\frac{3645.9}{\left[\left(\frac{3357.4}{.1100}\right)(.0995) + 300\right]} = 109\% \text{ Rec}$$

1230

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2 WHC-SD-WM-DP-164, REV. 1

Sample: 3781 + SPK Date: 01/13/96 Time: 10:25:51

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.90	0.00
2	1.00	145.10	98.00
3	1.50	369.40	60.72
4	2.00	544.60	32.17
5	2.50	632.90	13.95
6	3.00	676.40	6.43
7	3.50	690.60	2.06
8	4.00	694.60	0.58
9	4.50	697.30	0.39
10	5.00	699.20	0.27
11	5.50	700.60	0.20
12	6.00	701.80	0.17
13	6.50	703.00	0.17
14	7.00	703.90	0.13
15	7.50	704.80	0.13
16	8.00	705.60	0.11
17	8.50	706.30	0.10
18	9.00	706.90	0.08
19	9.50	707.60	0.10
20	10.00	708.30	0.10
21	10.50	708.80	0.07
22	11.00	709.40	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(709.4 - 20.67575)(1)/(1) = +6.887E+02 g/L Carbon
(709.4 - 20.67575)(1)/(1)(12) = +5.739E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

709.4

$\left[\left(\frac{375.4}{1100}\right)(.0995) + 300\right]$

111 % Rec

1231

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3782 Date: 01/13/96 Time: 10:37:41

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.00	4.90	87.76
3	1.50	50.40	90.28
4	2.00	215.00	76.56
5	2.50	402.80	46.62
6	3.00	532.20	24.31
7	3.50	608.20	12.50
8	4.00	654.00	7.00
9	4.50	676.70	3.35
10	5.00	685.60	1.30
11	5.50	690.60	0.72
12	6.00	694.00	0.49
13	6.50	696.80	0.40
14	7.00	699.20	0.34
15	7.50	701.30	0.30
16	8.00	703.00	0.24
17	8.50	704.80	0.26
18	9.00	706.10	0.18
19	9.50	707.50	0.20
20	10.00	708.80	0.18
21	10.50	710.00	0.17
22	11.00	711.10	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(711.1 - 7.149246)(1)/(1) = +7.040E+02 g/L Carbon
(711.1 - 7.149246)(1)/(1)(12) = +5.866E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1232

$\frac{704.0}{.1092} = 6.45E^{3}$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3782 Date: 01/13/96 Time: 10:49:27

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.90	0.00
2	1.01	93.30	97.96
3	1.51	584.40	84.03
4	2.00	859.90	32.04
5	2.50	983.90	12.60
6	3.00	1047.50	6.07
7	3.50	1081.40	3.13
8	4.00	1093.20	1.08
9	4.50	1099.80	0.60
10	5.00	1104.50	0.43
11	5.50	1108.40	0.35
12	6.00	1111.10	0.24
13	6.50	1113.20	0.19
14	7.00	1114.90	0.15
15	7.50	1116.60	0.15
16	8.00	1117.70	0.10
17	8.50	1118.80	0.10
18	9.00	1120.00	0.11
19	9.50	1121.10	0.10
20	10.00	1122.20	0.10
21	10.50	1123.20	0.09
22	11.00	1124.00	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(1124 - 20.67793)(1)/(1) = +1.1033E+03 g/L Carbon
(1124 - 20.67793)(1)/(1)(12) = +9.1944E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

1233

$\frac{1103.3}{.1092} = 1.01E4$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3782 Date: 01/13/96 Time: 11:01:26

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	3.20	68.75
3	1.50	10.80	70.37
4	2.00	61.60	82.47
5	2.51	141.00	56.31
6	3.01	200.90	29.82
7	3.50	235.30	14.62
8	4.00	251.20	6.33
9	4.50	258.20	2.71
10	5.00	262.30	1.56
11	5.50	265.20	1.09
12	6.00	267.30	0.79
13	6.50	269.10	0.67
14	7.00	270.90	0.66
15	7.50	272.40	0.55
16	8.00	273.80	0.51
17	8.50	275.20	0.51
18	9.00	276.40	0.43
19	9.50	277.60	0.43
20	10.00	278.60	0.36
21	10.50	279.60	0.36
22	11.00	280.60	0.36

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(280.6 - 7.150436)(1)/(1) = +2.734E+02 g/L Carbon
(280.6 - 7.150436)(1)/(1)(12) = +2.279E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

$\frac{273.4}{.0636} = 4.30E^{3}$

1234

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3782 Date: 01/13/96 Time: 11:13:09

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	132.70	99.10
3	1.51	414.30	67.97
4	2.00	545.20	24.01
5	2.50	612.80	11.03
6	3.00	649.00	5.58
7	3.50	664.10	2.27
8	4.00	669.30	0.78
9	4.50	672.70	0.51
10	5.00	678.10	0.80
11	5.50	682.80	0.69
12	6.00	685.50	0.39
13	6.50	687.50	0.29
14	7.00	689.10	0.23
15	7.50	690.40	0.19
16	8.00	691.60	0.17
17	8.50	692.60	0.14
18	9.00	693.60	0.14
19	9.50	694.40	0.12
20	10.00	695.30	0.13
21	10.50	696.00	0.10
22	11.00	696.80	0.11

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(696.8 - 20.67438)(1)/(1) = +6.761E+02 g/L Carbon
(696.8 - 20.67438)(1)/(1)(12) = +5.634E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

$\frac{676.1}{.0636} = 1.06 \times 4$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3782 TRIPL Date: 01/13/96 Time: 11:25:00

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	3.00	70.00
3	1.50	23.60	87.29
4	2.00	157.50	85.02
5	2.50	369.40	57.36
6	3.00	502.30	26.46
7	3.50	577.20	12.98
8	4.00	624.70	7.60
9	4.50	651.90	4.17
10	5.00	663.40	1.73
11	5.50	669.20	0.87
12	6.00	673.40	0.62
13	6.50	676.70	0.49
14	7.00	679.60	0.43
15	7.50	682.20	0.38
16	8.00	684.50	0.34
17	8.50	686.70	0.32
18	9.00	688.90	0.32
19	9.50	690.60	0.25
20	10.00	692.30	0.25
21	10.50	693.90	0.23
22	11.00	695.30	0.20

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(695.3 - 7.149801)(1)/(1) = +6.882E+02 g/L Carbon
(695.3 - 7.149801)(1)/(1)(12) = +5.735E+01 Molar Carbon

Sample Run By: KR MONTEITH 00000

1236

$\frac{688.2}{.1072} = 6.42 \times 3$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3784 Date: 01/13/96 Time: 11:36:45

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.70	0.00
2	1.01	4.80	64.58
3	1.51	22.90	79.04
4	2.01	71.60	68.02
5	2.50	134.80	46.88
6	3.00	197.80	31.85
7	3.50	246.80	19.85
8	4.00	273.90	9.89
9	4.50	285.30	4.00
10	5.00	290.70	1.86
11	5.50	293.70	1.02
12	6.00	296.10	0.81
13	6.50	298.10	0.67
14	7.00	300.00	0.63
15	7.50	301.50	0.50
16	8.00	303.00	0.50
17	8.50	304.30	0.43
18	9.00	305.60	0.43
19	9.50	306.80	0.39
20	10.00	308.10	0.42
21	10.50	309.10	0.32
22	11.00	310.20	0.35

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(310.2 - 7.150952)(1)/(1) = +3.030E+02 g/L Carbon
(310.2 - 7.150952)(1)/(1)(12) = +2.525E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1237

$\frac{303.0}{.0772} \simeq 3.92E3$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3784 Date: 01/13/96 Time: 11:48:24

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	21.30	94.37
3	1.50	98.30	78.33
4	2.00	157.60	37.63
5	2.50	192.70	18.21
6	3.00	208.60	7.62
7	3.51	215.20	3.07
8	4.00	219.40	1.91
9	4.50	222.70	1.48
10	5.00	224.80	0.93
11	5.50	227.10	1.01
12	6.00	229.30	0.96
13	6.50	231.10	0.78
14	7.00	232.60	0.64
15	7.50	233.60	0.43
16	8.00	235.60	0.85
17	8.50	237.80	0.93
18	9.00	244.20	2.62
19	9.50	249.60	2.16
20	10.00	252.80	1.27
21	10.50	254.90	0.82
22	11.00	256.60	0.66

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(256.6 - 20.67931)(1)/(1) = +2.359E+02 g/L Carbon
(256.6 - 20.67931)(1)/(1)(12) = +1.966E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

1238

$\frac{235.9}{.0772} = 3.063$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3784 Date: 01/13/96 Time: 12:00:09

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
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	34.70	86.46
4	2.00	90.10	61.49
5	2.50	154.40	41.65
6	3.00	221.90	30.42
7	3.50	296.10	25.06
8	4.00	361.60	18.11
9	4.50	410.00	11.80
10	5.00	439.60	6.73
11	5.50	453.10	2.98
12	6.00	459.30	1.35
13	6.50	463.40	0.88
14	7.00	466.50	0.66
15	7.50	468.90	0.51
16	8.00	471.20	0.49
17	8.50	473.20	0.42
18	9.00	475.10	0.40
19	9.50	477.00	0.40
20	10.00	478.60	0.33
21	10.50	480.30	0.35
22	11.00	481.90	0.33

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(481.9 - 7.149286)(1)/(1) = +4.748E+02 g/L Carbon
(481.9 - 7.149286)(1)/(1)(12) = +3.956E+01 Molar Carbon

Sample Run By: KR MONTEITH 00000

$\frac{479.0}{.1223} = 3.88 \times 3$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3784 Date: 01/13/96 Time: 13:17:32

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.50	0.00
2	1.01	78.00	96.79
3	1.51	206.50	62.23
4	2.01	280.70	26.43
5	2.51	321.40	12.66
6	3.01	341.00	5.75
7	3.51	349.00	2.29
8	4.01	353.80	1.36
9	4.50	357.50	1.03
10	5.00	360.70	0.89
11	5.50	363.50	0.77
12	6.00	366.00	0.68
13	6.50	368.10	0.57
14	7.00	370.20	0.57
15	7.50	372.00	0.48
16	8.00	373.60	0.43
17	8.50	375.20	0.43
18	9.00	376.50	0.35
19	9.50	377.70	0.32
20	10.00	379.00	0.34
21	10.50	380.10	0.29
22	11.00	381.10	0.26

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(381.1 - 20.6847)(1)/(1) = +3.604E+02 g/L Carbon
(381.1 - 20.6847)(1)/(1)(12) = +3.003E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

$\frac{360.4}{.1223} = 2.95E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3785 Date: 01/13/96 Time: 13:30:46

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	2.90	86.21
3	1.50	16.00	81.88
4	2.00	86.30	81.46
5	2.50	213.90	59.65
6	3.00	318.20	32.78
7	3.50	399.40	20.33
8	4.00	460.90	13.34
9	4.50	500.40	7.89
10	5.00	520.50	3.86
11	5.50	528.00	1.42
12	6.00	531.50	0.66
13	6.50	533.90	0.45
14	7.00	536.00	0.39
15	7.50	538.30	0.43
16	8.00	541.10	0.52
17	8.50	543.20	0.39
18	9.00	544.60	0.26
19	9.50	545.80	0.22
20	10.00	547.00	0.22
21	10.50	548.10	0.20
22	11.00	549.00	0.16

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(549 - 7.14873)(1)/(1) = +5.419E+02 g/L Carbon
(549 - 7.14873)(1)/(1)(12) = +4.515E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1241

$\frac{541.9}{.0982} = 5.52E^{3}$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3785 Date: 01/13/96 Time: 13:42:40

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.60	0.00
2	1.01	72.80	97.80
3	1.51	178.10	59.12
4	2.00	243.90	26.98
5	2.50	283.60	14.00
6	3.00	302.90	6.37
7	3.50	309.80	2.23
8	4.00	313.70	1.24
9	4.50	316.30	0.82
10	5.00	318.70	0.75
11	5.50	320.50	0.56
12	6.00	322.10	0.50
13	6.50	323.60	0.46
14	7.00	325.00	0.43
15	7.50	326.10	0.34
16	8.00	327.20	0.34
17	8.50	328.30	0.34
18	9.00	329.30	0.30
19	9.50	330.30	0.30
20	10.00	331.00	0.21
21	10.50	331.80	0.24
22	11.00	332.60	0.24

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(332.6 - 20.67438)(1)/(1) = +3.119E+02 g/L Carbon
(332.6 - 20.67438)(1)/(1)(12) = +2.599E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

1242

$\frac{311.9}{.0982} = 3.18E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3785 Date: 01/13/96 Time: 13:54:28

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	3.50	77.14
3	1.50	16.30	78.53
4	2.00	98.30	83.42
5	2.50	204.80	52.00
6	3.00	325.90	37.16
7	3.50	437.00	25.42
8	4.00	505.20	13.50
9	4.50	548.10	7.83
10	5.00	569.40	3.74
11	5.50	576.30	1.20
12	6.00	580.20	0.67
13	6.50	582.90	0.46
14	7.00	585.20	0.39
15	7.50	587.10	0.32
16	8.00	589.10	0.34
17	8.50	590.60	0.25
18	9.00	592.10	0.25
19	9.50	593.30	0.20
20	10.00	594.60	0.22
21	10.50	595.80	0.20
22	11.00	596.90	0.18

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(596.9 - 7.149762)(1)/(1) = +5.898E+02 g/L Carbon
(596.9 - 7.149762)(1)/(1)(12) = +4.915E+01 Molar Carbon

Sample Run By: KR MONTEITH 00000

$\frac{5.09.8}{.1165} = 5.06 E^{3}$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

Sample: 3785 *Date: 01/13/96* *Time: 14:06:55*

WHC-SD-WM-DP-164, REV. 1

Sample Size = 1 uL *Analyst : KR MONTEITH*
Dil Factor = 1 *Min Readings = 22*
Blank ID # = *Max Readings = 22*
Blank Value = 1.88 ug/minute C *% Difference = 10*

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.00	0.00
2	1.01	90.20	97.78
3	1.51	215.90	58.22
4	2.01	286.60	24.67
5	2.51	327.00	12.35
6	3.01	345.30	5.30
7	3.50	351.70	1.82
8	4.00	355.10	0.96
9	4.50	357.90	0.78
10	5.00	360.10	0.61
11	5.50	362.10	0.55
12	6.00	363.60	0.41
13	6.50	365.00	0.38
14	7.00	366.20	0.33
15	7.50	367.30	0.30
16	8.00	368.40	0.30
17	8.50	369.40	0.27
18	9.00	370.50	0.30
19	9.50	371.40	0.24
20	10.00	372.20	0.21
21	10.50	372.90	0.19
22	11.00	373.60	0.19

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(373.6 - 20.68115)(1)/(1) = +3.529E+02 g/L Carbon
(373.6 - 20.68115)(1)/(1)(12) = +2.941E+01 Molar Carbon
< < < < WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!! > > > >

Sample Run By: _____
KR MONTEITH *00000*

1244

$\frac{352.9}{.1165} = 3.03e^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3632 Date: 01/13/96 Time: 14:18:41

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	80.50	99.01
3	1.51	748.40	89.24
4	2.00	1494.90	49.94
5	2.50	2241.90	33.32
6	3.00	2849.30	21.32
7	3.50	2948.30	3.36
8	4.00	2999.40	1.70
9	4.50	3022.80	0.77
10	5.00	3031.40	0.28
11	5.50	3036.80	0.18
12	6.00	3041.20	0.14
13	6.50	3044.70	0.11
14	7.00	3047.80	0.10
15	7.50	3050.70	0.10
16	8.00	3053.20	0.08
17	8.50	3055.30	0.07
18	9.00	3057.40	0.07
19	9.50	3059.30	0.06
20	10.00	3061.00	0.06
21	10.50	3062.60	0.05
22	11.00	3063.90	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(3063.9 - 7.149246)(1)/(1) = +3.0568E+03 g/L Carbon
(3063.9 - 7.149246)(1)/(1)(12) = +2.5473E+02 Molar Carbon

Sample Run By: KR MONTEITH 00000

1245

$\frac{3056.8}{.1215} = 2.52E4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3632 Date: 01/13/96 Time: 14:30:48

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	5.40	0.00
2	1.01	207.90	97.40
3	1.51	465.50	55.34
4	2.00	570.20	18.36
5	2.50	624.00	8.62
6	3.00	650.30	4.04
7	3.50	658.00	1.17
8	4.00	661.70	0.56
9	4.50	664.30	0.39
10	5.00	666.50	0.33
11	5.50	668.30	0.27
12	6.00	669.80	0.22
13	6.50	671.10	0.19
14	7.00	672.20	0.16
15	7.50	673.10	0.13
16	8.00	674.10	0.15
17	8.50	675.10	0.15
18	9.00	675.80	0.10
19	9.50	676.70	0.13
20	10.00	677.40	0.10
21	10.50	678.20	0.12
22	11.00	679.10	0.13

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(679.1 - 20.67782)(1)/(1) = +6.584E+02 g/L Carbon
(679.1 - 20.67782)(1)/(1)(12) = +5.487E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

1246

$\frac{658.4}{.1215} = 5.42E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3632 Date: 01/13/96 Time: 14:42:49

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	46.10	97.40
3	1.51	519.30	91.12
4	2.01	1105.00	53.00
5	2.51	1481.10	25.39
6	3.01	1657.10	10.62
7	3.51	1742.00	4.87
8	4.00	1791.80	2.78
9	4.50	1814.90	1.27
10	5.00	1821.90	0.38
11	5.50	1825.90	0.22
12	6.00	1828.90	0.16
13	6.50	1831.30	0.13
14	7.00	1833.90	0.14
15	7.50	1835.80	0.10
16	8.00	1837.70	0.10
17	8.50	1839.40	0.09
18	9.00	1841.00	0.09
19	9.50	1843.40	0.13
20	10.00	1845.40	0.11
21	10.50	1847.30	0.10
22	11.00	1848.90	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(1848.9 - 7.150991)(1)/(1) = +1.8417E+03 g/L Carbon
(1848.9 - 7.150991)(1)/(1)(12) = +1.5348E+02 Molar Carbon

Sample Run By: KR MONTEITH 00000

1841.7 / .0780 2.36E4

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3632 Date: 01/13/96 Time: 14:55:11

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.60	0.00
2	1.01	146.40	98.22
3	1.50	329.70	55.60
4	2.01	406.30	18.85
5	2.51	450.10	9.73
6	3.00	470.00	4.23
7	3.50	475.50	1.16
8	4.00	478.60	0.65
9	4.50	480.70	0.44
10	5.00	482.40	0.35
11	5.50	483.80	0.29
12	6.00	485.10	0.27
13	6.50	486.10	0.21
14	7.00	487.10	0.21
15	7.50	488.00	0.18
16	8.00	488.80	0.16
17	8.50	489.60	0.16
18	9.00	490.30	0.14
19	9.50	491.10	0.16
20	10.00	491.70	0.12
21	10.50	492.30	0.12
22	11.00	493.00	0.14

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(493 - 20.67931)(1)/(1) = +4.723E+02 g/L Carbon
(493 - 20.67931)(1)/(1)(12) = +3.936E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

1248

$\frac{472.3}{.0780} = 6.06E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV. 2.0 WHC-SD-WM-DP-164, REV. 1

Sample: 3528 Date: 01/13/96 Time: 16:17:22

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	22.60	98.67
3	1.50	217.90	89.63
4	2.00	581.20	62.51
5	2.50	887.60	34.52
6	3.00	1063.90	16.57
7	3.50	1154.50	7.85
8	4.00	1213.10	4.83
9	4.50	1250.00	2.95
10	5.00	1267.80	1.40
11	5.50	1273.30	0.43
12	6.00	1276.20	0.23
13	6.50	1278.10	0.15
14	7.00	1279.50	0.11
15	7.50	1280.70	0.09
16	8.00	1281.80	0.09
17	8.50	1282.60	0.06
18	9.00	1283.70	0.09
19	9.50	1284.50	0.06
20	10.00	1285.30	0.06
21	10.50	1286.10	0.06
22	11.00	1286.70	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(1286.7 - 7.148611)(1)/(1) = +1.2796E+03 g/L Carbon
(1286.7 - 7.148611)(1)/(1)(12) = +1.0663E+02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

$\frac{1279.6}{.0622} = 2.06e^{4}$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3528 Date: 01/13/96 Time: 16:29:21

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.70	0.00
2	1.01	304.00	99.44
3	1.51	875.00	65.26
4	2.00	1207.10	27.51
5	2.50	1364.90	11.56
6	3.00	1456.30	6.28
7	3.50	1520.60	4.23
8	4.00	1570.20	3.16
9	4.50	1609.80	2.46
10	5.00	1642.50	1.99
11	5.50	1668.80	1.58
12	6.00	1690.50	1.28
13	6.50	1707.50	1.00
14	7.00	1720.90	0.78
15	7.50	1731.40	0.61
16	8.00	1739.90	0.49
17	8.50	1746.80	0.40
18	9.00	1752.70	0.34
19	9.50	1757.50	0.27
20	10.00	1762.00	0.26
21	10.50	1765.40	0.19
22	11.00	1768.70	0.19

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(1768.7 - 20.67782)(1)/(1) = +1.7480E+03 g/L Carbon
(1768.7 - 20.67782)(1)/(1)(12) = +1.4567E+02 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

1250

$\frac{1748.0}{.0622} = 2.8164$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3528 Date: 01/13/96 Time: 16:41:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .65 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.90	0.00
2	1.01	23.10	87.45
3	1.51	107.20	78.45
4	2.01	229.50	53.29
5	2.51	337.60	32.02
6	3.01	414.40	18.53
7	3.51	469.30	11.70
8	4.01	505.50	7.16
9	4.50	524.10	3.55
10	5.00	529.20	0.96
11	5.50	531.30	0.40
12	6.00	532.80	0.28
13	6.50	534.10	0.24
14	7.00	535.50	0.26
15	7.50	536.60	0.20
16	8.00	537.70	0.20
17	8.50	538.80	0.20
18	9.00	539.70	0.17
19	9.50	542.40	0.50
20	10.00	549.70	1.33
21	10.50	552.40	0.49
22	11.00	555.70	0.59

USER INPUT BLANK VALUE
BLANK VALUE = 7.150436 micrograms carbon
BLANK FACTOR = 7.150436 / 11.00067 = +6.5E-01 ug/min Carbon

SAMPLE RESULTS:
(555.7 - 7.151111)(1)/(1) = +5.485E+02 g/L Carbon
(555.7 - 7.151111)(1)/(1)(12) = +4.571E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1251

$\frac{548.5}{.0284} = 1.93E^{4}$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0 WHC-SD-WM-DP-164, REV. 1

Sample: 3528 Date: 01/13/96 Time: 16:57:41

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.88 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	193.90	0.00
2	1.01	343.50	43.55
3	1.50	405.00	15.19
4	2.00	446.00	9.19
5	2.50	485.90	8.21
6	3.01	520.60	6.67
7	3.51	548.80	5.14
8	4.01	572.50	4.14
9	4.50	599.80	4.55
10	5.00	620.10	3.27
11	5.50	635.60	2.44
12	6.00	648.20	1.94
13	6.50	659.30	1.68
14	7.00	669.40	1.51
15	7.50	677.90	1.25
16	8.00	685.70	1.14
17	8.50	692.30	0.95
18	9.00	698.40	0.87
19	9.50	703.80	0.77
20	10.00	708.50	0.66
21	10.50	712.90	0.62
22	11.00	717.00	0.57

USER INPUT BLANK VALUE
BLANK VALUE = 20.68126 micrograms carbon
BLANK FACTOR = 20.68126 / 11.00067 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(717 - 20.68115)(1)/(1) = +6.963E+02 g/L Carbon
(717 - 20.68115)(1)/(1)(12) = +5.803E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

1252

$\frac{696.3}{.0284} = 24.5E4$

LABCORE Data Entry Template for Worklist# 4880

Analyst: KRM **Instrument:** CARB2 **Book #** 17N12 D 16N12 C

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

WHC-SD-WM-DP-164, REV. 1

Worklist Comment: TICTOC1 BY-104 KRM

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID	1	0.0	N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID	1	0.1	N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID	6.00E2	6.04E2	N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID	3.00E3	2.93E3	N/A	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003637	0		@TICTOC1 TIC-02	SOLID	N/A	3.45E4	5.00	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003637	0		@TICTOC1 TOC-02	SOLID	N/A	5.27E3	40.00	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003637	0		@TICTOC1 TIC-02	SOLID	3.45E4	3.60E4	N/A	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003637	0		@TICTOC1 TOC-02	SOLID	5.27E3	6.08E3	N/A	ug/g
95000180	BY104 ROTARY	5	SPK	S95T003637	0		@TICTOC1 TIC-02	SOLID	100	90.6	N/A	ug/g
95000180	BY104 ROTARY	5	SPK	S95T003637	0		@TICTOC1 TOC-02	SOLID	100	82.0	N/A	ug/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003641	0		@TICTOC1 TIC-02	SOLID	N/A	2.14E4	5.00	ug/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003641	0		@TICTOC1 TOC-02	SOLID	N/A	5.71E3	40.0	ug/g
95000180	BY104 ROTARY	7	DUP	S95T003641	0		@TICTOC1 TIC-02	SOLID	2.14E4	2.23E4	N/A	ug/g
95000180	BY104 ROTARY	7	DUP	S95T003641	0		@TICTOC1 TOC-02	SOLID	5.71E3	5.81E3	N/A	ug/g
95000200	BY104 ROTARY	8	SAMPLE	S95T003783	0		@TICTOC1 TIC-02	SOLID	N/A	1.08E4	5.0	ug/g
95000200	BY104 ROTARY	8	SAMPLE	S95T003783	0		@TICTOC1 TOC-02	SOLID	N/A	6.49E3	40.0	ug/g
95000200	BY104 ROTARY	9	DUP	S95T003783	0		@TICTOC1 TIC-02	SOLID	1.08E4	1.23E4	N/A	ug/g
95000200	BY104 ROTARY	9	DUP	S95T003783	0		@TICTOC1 TOC-02	SOLID	6.49E3	6.02E3	N/A	ug/g

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 4880

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT

Final page for worklist # 4880

1-14-96
Analyst Signature Date
17:00

1-14-96
Analyst Signature Date

Reviewed RW Schroeder 1/15/96

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0 WHC-SD-WM-DP-164, REV. 1
<<< BLANK ANALYSIS >>>

Sample: BLK Date: 01/14/96 Time: 06:35:02

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	0.50	60.00
3	1.51	1.00	50.00
4	2.00	1.40	28.57
5	2.50	1.90	26.32
6	3.00	2.10	9.52
7	3.50	2.40	12.50
8	4.00	2.80	14.29
9	4.50	3.00	6.67
10	5.00	3.30	9.09
11	5.50	3.60	8.33
12	6.00	3.80	5.26
13	6.50	4.10	7.32
14	7.00	4.50	8.89
15	7.50	4.70	4.26
16	8.00	5.00	6.00
17	8.50	5.20	3.85
18	9.00	5.50	5.45
19	9.50	5.80	5.17
20	10.00	6.00	3.33
21	10.50	6.30	4.76
22	11.00	6.70	5.97

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 1252 TO 1274

BLANK VALUE = 6.7 micrograms carbon
BLANK FACTOR = 6.7 / 11.0015 = +6.1E-01 ug/min Carbon

Sample Run By: 1-14-96
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-164, REV. 1

Sample: BLK Date: 01/14/96 Time: 06:47:17

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	2.80	92.86
3	1.51	9.60	70.83
4	2.00	14.40	33.33
5	2.50	16.70	13.77
6	3.00	18.20	8.24
7	3.50	19.50	6.67
8	4.00	20.40	4.41
9	4.50	21.30	4.23
10	5.00	21.90	2.74
11	5.50	22.40	2.23
12	6.00	22.80	1.75
13	6.50	23.50	2.98
14	7.00	23.90	1.67
15	7.50	24.30	1.65
16	8.00	24.60	1.22
17	8.50	25.00	1.60
18	9.00	25.40	1.57
19	9.50	25.80	1.55
20	10.00	26.00	0.77
21	10.50	26.30	1.14
22	11.00	26.70	1.50

BLANK VALUE = 26.7 micrograms carbon
BLANK FACTOR = 26.7 / 10.99884 = +2.43E+00 ug/min Carbon

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

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: STD Date: 01/14/96 Time: 07:04:34

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.00	23.70	98.73
3	1.50	138.20	82.85
4	2.00	281.10	50.84
5	2.50	401.50	29.99
6	3.00	484.10	17.06
7	3.50	539.50	10.27
8	4.00	575.50	6.26
9	4.50	594.70	3.23
10	5.00	601.90	1.20
11	5.50	605.00	0.51
12	6.00	606.50	0.25
13	6.50	607.30	0.13
14	7.00	607.80	0.08
15	7.50	608.20	0.07
16	8.00	608.50	0.05
17	8.50	608.80	0.05
18	9.00	609.10	0.05
19	9.50	609.50	0.07
20	10.00	609.80	0.05
21	10.50	610.00	0.03
22	11.00	610.40	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(610.4 - 6.710298)(1)/(1000) = +6.037E-01 g/L Carbon
(610.4 - 6.710298)(1)/(1000)(12) = +5.031E-02 Molar Carbon

Sample Run By: KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: STD Date: 01/14/96 Time: 07:16:51

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	30.60	99.35
3	1.51	182.10	83.20
4	2.00	403.50	54.87
5	2.50	521.10	22.57
6	3.00	570.80	8.71
7	3.50	595.30	4.12
8	4.00	602.20	1.15
9	4.50	604.70	0.41
10	5.00	605.90	0.20
11	5.50	606.80	0.15
12	6.00	607.70	0.15
13	6.50	608.30	0.10
14	7.00	608.90	0.10
15	7.50	609.50	0.10
16	8.00	609.90	0.07
17	8.50	610.40	0.08
18	9.00	610.90	0.08
19	9.50	611.30	0.07
20	10.00	611.60	0.05
21	10.50	612.00	0.07
22	11.00	612.40	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(612.4 - 26.72919)(1)/(200) = +2.928E+00 g/L Carbon
(612.4 - 26.72919)(1)/(200)(12) = +2.440E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: R BLK Date: 01/14/96 Time: 07:32:36

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
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	1.50	1.00	40.00
4	2.01	1.60	37.50
5	2.51	2.00	20.00
6	3.00	2.40	16.67
7	3.50	2.70	11.11
8	4.00	2.90	6.90
9	4.50	3.20	9.37
10	5.00	3.40	5.88
11	5.50	3.80	10.53
12	6.00	4.10	7.32
13	6.50	4.30	4.65
14	7.00	4.60	6.52
15	7.50	4.80	4.17
16	8.00	5.10	5.88
17	8.50	5.40	5.56
18	9.00	5.70	5.26
19	9.50	5.90	3.39
20	10.00	6.20	4.84
21	10.50	6.40	3.13
22	11.00	6.70	4.48

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(6.7 - 6.709795)(1)/(1) = < 5.00 E-3 g/L Carbon
(6.7 - 6.709795)(1)/(1)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. I

Sample: R BLK Date: 01/14/96 Time: 07:44:40

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

Analyst : KR MONTEITH
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	6.30	80.95
4	2.00	12.30	48.78
5	2.50	16.10	23.60
6	3.00	18.40	12.50
7	3.50	19.60	6.12
8	4.00	20.50	4.39
9	4.50	21.10	2.84
10	5.00	21.60	2.31
11	5.50	22.20	2.70
12	6.00	22.70	2.20
13	6.50	23.40	2.99
14	7.00	23.70	1.27
15	7.50	24.10	1.66
16	8.00	24.50	1.63
17	8.50	24.90	1.61
18	9.00	25.30	1.58
19	9.50	25.60	1.17
20	10.00	25.90	1.16
21	10.50	26.20	1.15
22	11.00	26.60	1.50

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(26.6 - 26.73171)(1)/(1) = < 5.00 E-3 g/L Carbon
(26.6 - 26.73171)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3637 Date: 01/14/96 Time: 11:13:19

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	7.00	74.29
3	1.50	113.50	93.83
4	2.00	610.50	81.41
5	2.50	1165.10	47.60
6	3.00	1456.70	20.02
7	3.50	1574.10	7.46
8	4.00	1634.80	3.71
9	4.50	1670.40	2.13
10	5.00	1687.60	1.02
11	5.50	1694.10	0.38
12	6.00	1699.20	0.30
13	6.50	1702.90	0.22
14	7.00	1706.40	0.21
15	7.50	1709.60	0.19
16	8.00	1712.30	0.16
17	8.50	1715.00	0.16
18	9.00	1717.10	0.12
19	9.50	1719.10	0.12
20	10.00	1721.20	0.12
21	10.50	1722.90	0.10
22	11.00	1724.50	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(1724.5 - 6.709219)(1)/(1) = +1.7178E+03 g/L Carbon
(1724.5 - 6.709219)(1)/(1)(12) = +1.4315E+02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

$\frac{1717.8}{.0498} = 3.45e^4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3637 Date: 01/14/96 Time: 11:25:22

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.30	0.00
2	1.01	65.60	96.49
3	1.50	166.30	60.55
4	2.00	224.20	25.83
5	2.50	253.90	11.70
6	3.00	265.50	4.37
7	3.50	270.10	1.70
8	4.00	272.60	0.92
9	4.50	274.70	0.76
10	5.00	276.40	0.62
11	5.50	278.10	0.61
12	6.00	279.50	0.50
13	6.50	280.90	0.50
14	7.00	281.90	0.35
15	7.50	283.10	0.42
16	8.00	283.90	0.28
17	8.50	285.00	0.39
18	9.00	285.90	0.31
19	9.50	286.60	0.24
20	10.00	287.60	0.35
21	10.50	288.50	0.31
22	11.00	289.10	0.21

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(289.1 - 26.72703)(1)/(1) = +2.624E+02 g/L Carbon
(289.1 - 26.72703)(1)/(1)(12) = +2.186E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

1262

$\frac{262.4}{.0498} = 5.27E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3637 Date: 01/14/96 Time: 11:37:16

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	11.70	90.60
3	1.51	402.50	97.09
4	2.01	1146.80	64.90
5	2.50	1684.10	31.90
6	3.00	1877.60	10.31
7	3.50	1958.60	4.14
8	4.00	2006.40	2.38
9	4.50	2031.20	1.22
10	5.00	2040.20	0.44
11	5.50	2045.40	0.25
12	6.00	2049.50	0.20
13	6.50	2053.00	0.17
14	7.00	2056.10	0.15
15	7.50	2058.70	0.13
16	8.00	2061.10	0.12
17	8.50	2063.20	0.10
18	9.00	2065.20	0.10
19	9.50	2066.90	0.08
20	10.00	2068.30	0.07
21	10.50	2069.70	0.07
22	11.00	2071.10	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(2071.1 - 6.709293)(1)/(1) = +2.0644E+03 g/L Carbon
(2071.1 - 6.709293)(1)/(1)(12) = +1.7203E+02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1263

$\frac{2064.4}{.0573} = 3.60E4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3637 Date: 01/14/96 Time: 11:49:19

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.00	0.00
2	1.01	94.00	97.87
3	1.51	240.30	60.88
4	2.00	307.00	21.73
5	2.50	342.20	10.29
6	3.00	356.00	3.88
7	3.50	360.40	1.22
8	4.00	362.50	0.58
9	4.50	364.10	0.44
10	5.00	365.50	0.38
11	5.50	366.80	0.35
12	6.00	367.70	0.24
13	6.50	368.70	0.27
14	7.00	369.70	0.27
15	7.50	370.70	0.27
16	8.00	371.50	0.22
17	8.50	372.30	0.21
18	9.00	373.10	0.21
19	9.50	373.70	0.16
20	10.00	374.50	0.21
21	10.50	375.20	0.19
22	11.00	375.90	0.19

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(375.9 - 26.73148)(1)/(1) = +3.492E+02 g/L Carbon
(375.9 - 26.73148)(1)/(1)(12) = +2.910E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

1264

$\frac{349.2}{.0573} = 6.09E^{3}$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3637 + SPK Date: 01/14/96 Time: 13:22:27

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.10	0.00
2	1.01	2.90	96.55
3	1.51	109.20	97.34
4	2.00	476.20	77.07
5	2.50	841.50	43.41
6	3.00	1041.00	19.16
7	3.50	1129.70	7.85
8	4.00	1180.90	4.34
9	4.50	1211.80	2.55
10	5.00	1224.80	1.06
11	5.50	1229.30	0.37
12	6.00	1231.80	0.20
13	6.50	1233.70	0.15
14	7.00	1235.30	0.13
15	7.50	1236.80	0.12
16	8.00	1237.90	0.09
17	8.50	1238.70	0.06
18	9.00	1239.40	0.06
19	9.50	1240.10	0.06
20	10.00	1240.60	0.04
21	10.50	1241.00	0.03
22	11.00	1241.50	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(1241.5 - 6.709814)(1)/(1) = +1.2348E+03 g/L Carbon
(1241.5 - 6.709814)(1)/(1)(12) = +1.0290E+02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

$$\frac{1241.5}{\left[\left(\frac{1224.5}{.0498}\right)(.0305) + 300\right]} = 90.6\% \text{ Rec}$$

.0305 g/min

1265

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3637 + SPK Date: 01/14/96 Time: 13:34:54

Sample Size = 1 uL Analyst : KR MONTEITH
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 2.43 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.80	0.00
2	1.01	61.40	97.07
3	1.51	197.80	68.96
4	2.00	300.60	34.20
5	2.50	349.80	14.07
6	3.00	374.90	6.70
7	3.50	382.60	2.01
8	4.00	385.20	0.67
9	4.50	386.60	0.36
10	5.00	387.60	0.26
11	5.50	388.50	0.23
12	6.00	389.00	0.13
13	6.50	389.50	0.13
14	7.00	389.80	0.08
15	7.50	390.40	0.15
16	8.00	390.80	0.10
17	8.50	391.40	0.15
18	9.00	391.90	0.13
19	9.50	392.30	0.10
20	10.00	392.60	0.08
21	10.50	392.90	0.08
22	11.00	393.10	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(393.1 - 26.72956)(1)/(1) = +3.664E+02 g/L Carbon
(393.1 - 26.72956)(1)/(1)(12) = +3.053E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: KR MONTEITH 00000

393.1

$\left[\left(\frac{2891}{0498}\right)(.0309) + 300\right]$ = 82.0 % Rec **1266**

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. I

Sample: 3641 Date: 01/14/96 Time: 13:46:43

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	2.80	92.86
3	1.51	134.90	97.92
4	2.00	712.30	81.06
5	2.50	1288.90	44.74
6	3.00	1585.60	18.71
7	3.50	1715.40	7.57
8	4.00	1785.10	3.90
9	4.50	1829.60	2.43
10	5.00	1854.50	1.34
11	5.50	1864.00	0.51
12	6.00	1868.80	0.26
13	6.50	1872.40	0.19
14	7.00	1875.30	0.15
15	7.50	1877.40	0.11
16	8.00	1879.40	0.11
17	8.50	1881.10	0.09
18	9.00	1882.40	0.07
19	9.50	1883.60	0.06
20	10.00	1884.60	0.05
21	10.50	1885.20	0.03
22	11.00	1886.00	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(1886 - 6.71041)(1)/(1) = +1.8793E+03 g/L Carbon
(1886 - 6.71041)(1)/(1)(12) = +1.5661E+02 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

$\frac{1879.3}{.0877} = 2.14_{E}4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3641 Date: 01/14/96 Time: 13:58:55

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	78.10	98.98
3	1.51	292.40	73.29
4	2.00	405.10	27.82
5	2.50	462.70	12.45
6	3.00	495.30	6.58
7	3.50	508.10	2.52
8	4.00	512.20	0.80
9	4.50	515.00	0.54
10	5.00	517.00	0.39
11	5.50	518.90	0.37
12	6.00	520.10	0.23
13	6.50	521.40	0.25
14	7.00	522.50	0.21
15	7.50	523.40	0.17
16	8.00	524.40	0.19
17	8.50	525.30	0.17
18	9.00	526.00	0.13
19	9.50	526.50	0.09
20	10.00	527.00	0.09
21	10.50	527.60	0.11
22	11.00	527.90	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(527.9 - 26.72718)(1)/(1) = +5.012E+02 g/L Carbon
(527.9 - 26.72718)(1)/(1)(12) = +4.176E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

501.2 / .0877 = 5.71E3

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3641 Date: 01/14/96 Time: 14:12:18

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	5.00	84.00
3	1.51	180.40	97.23
4	2.00	713.00	74.70
5	2.50	1337.30	46.68
6	3.00	1747.60	23.48
7	3.50	1923.60	9.15
8	4.00	2003.50	3.99
9	4.50	2053.50	2.43
10	5.00	2082.70	1.40
11	5.50	2094.20	0.55
12	6.00	2099.80	0.27
13	6.50	2103.90	0.19
14	7.00	2107.30	0.16
15	7.50	2110.00	0.13
16	8.00	2112.50	0.12
17	8.50	2114.30	0.09
18	9.00	2115.90	0.08
19	9.50	2117.30	0.07
20	10.00	2118.40	0.05
21	10.50	2119.40	0.05
22	11.00	2120.40	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(2120.4 - 6.709851)(1)/(1) = +2.1137E+03 g/L Carbon
(2120.4 - 6.709851)(1)/(1)(12) = +1.7614E+02 Molar Carbon

Sample Run By: KR MONTEITH 00000

1269

$\frac{2113.7}{.0249} = 2.23 \times 4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3641 Date: 01/14/96 Time: 14:24:13

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	52.50	98.48
3	1.51	281.40	81.34
4	2.01	428.60	34.34
5	2.51	495.90	13.57
6	3.01	536.00	7.48
7	3.50	555.60	3.53
8	4.00	561.20	1.00
9	4.50	564.50	0.58
10	5.00	566.70	0.39
11	5.50	568.50	0.32
12	6.00	570.20	0.30
13	6.50	571.40	0.21
14	7.00	572.50	0.19
15	7.50	573.40	0.16
16	8.00	574.40	0.17
17	8.50	575.20	0.14
18	9.00	576.00	0.14
19	9.50	576.70	0.12
20	10.00	577.30	0.10
21	10.50	577.90	0.10
22	11.00	578.50	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(578.5 - 26.73178)(1)/(1) = +5.518E+02 g/L Carbon
(578.5 - 26.73178)(1)/(1)(12) = +4.598E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

1270

$\frac{551.8}{.0949} = 5.8/E^3$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV. 1

Sample: 3783 Date: 01/14/96 Time: 14:36:01

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	2.00	65.00
3	1.50	9.80	79.59
4	2.00	107.90	90.92
5	2.50	308.60	65.04
6	3.00	479.80	35.68
7	3.50	591.10	18.83
8	4.00	657.10	10.04
9	4.50	701.40	6.32
10	5.00	727.70	3.61
11	5.50	738.70	1.49
12	6.00	743.70	0.67
13	6.50	746.60	0.39
14	7.00	749.00	0.32
15	7.50	751.30	0.31
16	8.00	753.00	0.23
17	8.50	754.50	0.20
18	9.00	755.90	0.19
19	9.50	757.10	0.16
20	10.00	758.20	0.15
21	10.50	759.10	0.12
22	11.00	760.00	0.12

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(760 - 6.71041)(1)/(1) = +7.533E+02 g/L Carbon
(760 - 6.71041)(1)/(1)(12) = +6.277E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

1271

$\frac{753.3}{.0695} = 1.08E4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3783 Date: 01/14/96 Time: 14:48:15

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.20	0.00
2	1.01	59.40	97.98
3	1.51	194.40	69.44
4	2.00	293.00	33.65
5	2.50	355.50	17.58
6	3.00	397.50	10.57
7	3.50	423.60	6.16
8	4.00	437.40	3.16
9	4.50	445.10	1.73
10	5.00	451.00	1.31
11	5.50	455.90	1.07
12	6.00	459.40	0.76
13	6.50	462.50	0.67
14	7.00	465.10	0.56
15	7.50	467.40	0.49
16	8.00	469.40	0.43
17	8.50	471.20	0.38
18	9.00	472.90	0.36
19	9.50	474.40	0.32
20	10.00	475.80	0.29
21	10.50	477.00	0.25
22	11.00	478.10	0.23

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(478.1 - 26.72911)(1)/(1) = +4.514E+02 g/L Carbon
(478.1 - 26.72911)(1)/(1)(12) = +3.761E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

$\frac{451.4}{.0695} = 6.49E^{3}$

1272

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3783 Date: 01/14/96 Time: 16:30:22

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .61 ug/minute C

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	1.50	86.67
3	1.51	32.10	95.33
4	2.00	208.40	84.60
5	2.50	500.10	58.33
6	3.00	736.40	32.09
7	3.50	876.50	15.98
8	4.00	949.80	7.72
9	4.50	999.20	4.94
10	5.00	1031.70	3.15
11	5.50	1049.00	1.65
12	6.00	1055.80	0.64
13	6.50	1060.50	0.44
14	7.00	1063.70	0.30
15	7.50	1066.60	0.27
16	8.00	1069.40	0.26
17	8.50	1071.50	0.20
18	9.00	1073.40	0.18
19	9.50	1075.30	0.18
20	10.00	1076.70	0.13
21	10.50	1077.80	0.10
22	11.00	1079.00	0.11

USER INPUT BLANK VALUE
BLANK VALUE = 6.709293 micrograms carbon
BLANK FACTOR = 6.709293 / 10.99884 = +6.1E-01 ug/min Carbon

SAMPLE RESULTS:
(1079 - 6.709926)(1)/(1) = +1.0723E+03 g/L Carbon
(1079 - 6.709926)(1)/(1)(12) = +8.9358E+01 Molar Carbon

Sample Run By: _____
KR MONTEITH 00000

$\frac{1072.3}{.0869} = 1.23E4$

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV. 1

Sample: 3783 Date: 01/14/96 Time: 16:41:47

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

Analyst : KR MONTEITH
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	1.50	66.67
3	1.50	33.80	95.56
4	2.00	171.30	80.27
5	2.50	299.20	42.75
6	3.00	379.90	21.24
7	3.50	434.20	12.51
8	4.00	471.10	7.83
9	4.50	494.20	4.67
10	5.00	507.20	2.56
11	5.50	515.50	1.61
12	6.00	521.80	1.21
13	6.50	527.30	1.04
14	7.00	531.50	0.79
15	7.50	534.60	0.58
16	8.00	537.70	0.58
17	8.50	540.30	0.48
18	9.00	542.50	0.41
19	9.50	544.50	0.37
20	10.00	546.40	0.35
21	10.50	548.00	0.29
22	11.00	549.50	0.27

USER INPUT BLANK VALUE
BLANK VALUE = 26.72718 micrograms carbon
BLANK FACTOR = 26.72718 / 10.99884 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(549.5 - 26.73163)(1)/(1) = +5.228E+02 g/L Carbon
(549.5 - 26.73163)(1)/(1)(12) = +4.356E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
KR MONTEITH 00000

$\frac{522.8}{.0869} = 6.02E^3$

1274

LABCORE Data Entry Template for Worklist# 5014

Analyst: SLH **Instrument:** CARB2 **Book #** TIC17N12-D TOC16N12-D

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

Worklist Comment: @TICTOC1 FOR BY-104. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID	1	0.5	N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID	1	6.0	N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID	6.00e2	5.46e2	N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID	3.00e3	2.90e3	N/A	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003640	0		@TICTOC1 TIC-02	SOLID	N/A	2.16e4	5.00	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003640	0		@TICTOC1 TOC-02	SOLID	N/A	7.59e3	40.0	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003640	0		@TICTOC1 TIC-02	SOLID	2.16e4	1.95e4	N/A	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003640	0		@TICTOC1 TOC-02	SOLID	7.59e3	6.68e3	N/A	ug/g

Final page for worklist # 5014

See attached WL for analyst signature

Analyst Signature **Date**

Analyst Signature **Date** 1-22-96

Reviewed RW Schroeder 1/23/96

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 5014

Analyst: SLH **Instrument:** CARB2 _____ **Book #** TIC 17N12-D
TOC 16N12-D

Method: LA-342-100 Rev/Mod C-O

Worklist Comment: @TICTOC1 FOR BY-104. RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID			N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID			N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID			N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID			N/A	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003638	0		@TICTOC1 TIC-02	SOLID	N/A			ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003638	0		@TICTOC1 TOC-02	SOLID	N/A			ug/g
95000180	BY104 ROTARY	4	DUP	S95T003638	0		@TICTOC1 TIC-02	SOLID			N/A	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003638	0		@TICTOC1 TOC-02	SOLID			N/A	ug/g
95000180	BY104 ROTARY	5	SAMPLE	S95T003640	0		@TICTOC1 TIC-02	SOLID	N/A			ug/g
95000180	BY104 ROTARY	5	SAMPLE	S95T003640	0		@TICTOC1 TOC-02	SOLID	N/A			ug/g
95000180	BY104 ROTARY	6	DUP	S95T003640	0		@TICTOC1 TIC-02	SOLID			N/A	ug/g
95000180	BY104 ROTARY	6	DUP	S95T003640	0		@TICTOC1 TOC-02	SOLID			N/A	ug/g
95000180	BY104 ROTARY	7	SPK	S95T003640	0		@TICTOC1 TIC-02	SOLID			N/A	ug/g
95000180	BY104 ROTARY	7	SPK	S95T003640	0		@TICTOC1 TOC-02	SOLID			N/A	ug/g

Final page for worklist # 5014

Sandra L Hood Boatright
Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments: Spike done on S95T03638
not S95T03640

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
<<< BLANK ANALYSIS >>> WHC-SD-WM-DP-164, REV. 1

Sample: BLK Date: 01/21/96 Time: 10:39:06

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

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.40	0.00
2	1.01	1.30	69.23
3	1.51	1.90	31.58
4	2.00	2.40	20.83
5	2.50	2.90	17.24
6	3.01	3.20	9.37
7	3.51	3.50	8.57
8	4.01	3.80	7.89
9	4.50	4.10	7.32
10	5.00	4.40	6.82
11	5.50	4.60	4.35
12	6.00	4.90	6.12
13	6.50	5.20	5.77
14	7.00	5.50	5.45
15	7.50	5.80	5.17
16	8.00	6.00	3.33
17	8.50	6.30	4.76
18	9.00	6.60	4.55
19	9.50	6.90	4.35
20	10.00	7.10	2.82
21	10.50	7.40	4.05
22	11.00	7.60	2.63

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 1277 **TO** 1292.

BLANK VALUE = 7.6 micrograms carbon
BLANK FACTOR = 7.6 / 11.00171 = +6.9E-01 ug/min Carbon

Sample Run By: Sandra L Hood Boatright 1-21-96
SL HOOD 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. |

Sample: STD Date: 01/21/96 Time: 11:53:27

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	46.30	98.06
3	1.50	223.00	79.24
4	2.00	374.20	40.41
5	2.50	467.60	19.97
6	3.00	515.20	9.24
7	3.50	536.50	3.97
8	4.00	544.20	1.41
9	4.50	547.20	0.55
10	5.00	548.30	0.20
11	5.50	549.00	0.13
12	6.00	549.90	0.16
13	6.50	550.40	0.09
14	7.00	550.80	0.07
15	7.50	551.20	0.07
16	8.00	551.60	0.07
17	8.50	551.80	0.04
18	9.00	552.10	0.05
19	9.50	552.40	0.05
20	10.00	552.60	0.04
21	10.50	552.90	0.05
22	11.00	553.20	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(553.2 - 7.589747)(1)/(1000) = +5.456E-01 g/L Carbon
(553.2 - 7.589747)(1)/(1000)(12) = +4.547E-02 Molar Carbon

Sample Run By: _____
SL HOOD 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: B-2 Date: 01/21/96 Time: 13:18:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.10	0.00
2	1.01	3.00	63.33
3	1.51	4.10	26.83
4	2.00	4.70	12.77
5	2.50	4.90	4.08
6	3.00	5.10	3.92
7	3.50	5.30	3.77
8	4.00	5.40	1.85
9	4.50	5.50	1.82
10	5.00	5.60	1.79
11	5.50	5.70	1.75
12	6.00	5.90	3.39
13	6.50	6.00	1.67
14	7.00	6.10	1.64
15	7.50	6.30	3.17
16	8.00	6.40	1.56
17	8.50	6.50	1.54
18	9.00	6.70	2.99
19	9.50	6.80	1.47
20	10.00	6.90	1.45
21	10.50	7.00	1.43
22	11.00	7.10	1.41

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(7.1 - 7.589874)(1)/(1) = < 5.00 E-3 g/L Carbon
(7.1 - 7.589874)(1)/(1)(12) = < 4.17 E-4 Molar Carbon

Sample Run By: _____
SL HOOD 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. I

Sample: S95T03638 Date: 01/21/96 Time: 13:49:08

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.20	0.00
2	1.01	275.50	99.93
3	1.51	1022.40	73.05
4	2.00	1768.90	42.20
5	2.50	2516.20	29.70
6	3.00	3262.80	22.88
7	3.50	4009.70	18.63
8	4.00	4648.60	13.74
9	4.50	4696.70	1.02
10	5.00	4723.50	0.57
11	5.50	4742.20	0.39
12	6.00	4756.30	0.30
13	6.50	4766.90	0.22
14	7.00	4773.70	0.14
15	7.50	4777.90	0.09
16	8.00	4781.00	0.06
17	8.50	4783.20	0.05
18	9.00	4784.90	0.04
19	9.50	4786.40	0.03
20	10.00	4787.80	0.03
21	10.50	4788.90	0.02
22	11.00	4789.90	0.02

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(4789.9 - 7.591095)(1)/(1) = +4.7823E+03 g/L Carbon
(4789.9 - 7.591095)(1)/(1)(12) = +3.9853E+02 Molar Carbon

SS .2070g

Sample Run By: _____
SL HOOD 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 DUP Date: 01/21/96 Time: 14:15:15

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	96.30	99.17
3	1.51	791.90	87.84
4	2.00	1539.00	48.54
5	2.50	2285.30	32.66
6	3.00	2956.80	22.71
7	3.50	3058.80	3.33
8	4.00	3108.50	1.60
9	4.50	3129.60	0.67
10	5.00	3139.20	0.31
11	5.50	3145.50	0.20
12	6.00	3150.50	0.16
13	6.50	3154.60	0.13
14	7.00	3157.90	0.10
15	7.50	3160.80	0.09
16	8.00	3163.00	0.07
17	8.50	3165.10	0.07
18	9.00	3166.90	0.06
19	9.50	3168.40	0.05
20	10.00	3170.10	0.05
21	10.50	3171.50	0.04
22	11.00	3172.80	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(3172.8 - 7.590463)(1)/(1) = +3.1652E+03 g/L Carbon
(3172.8 - 7.590463)(1)/(1)(12) = +2.6377E+02 Molar Carbon

SS .1370g

Sample Run By: _____
SL HOOD 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 SPK Date: 01/21/96 Time: 14:49:29

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	89.80	99.33
3	1.51	734.80	87.78
4	2.00	1437.10	48.87
5	2.50	1815.30	20.83
6	3.00	1975.70	8.12
7	3.50	2053.00	3.77
8	4.00	2090.20	1.78
9	4.50	2104.00	0.66
10	5.00	2110.20	0.29
11	5.50	2114.70	0.21
12	6.00	2117.90	0.15
13	6.50	2120.60	0.13
14	7.00	2122.80	0.10
15	7.50	2124.70	0.09
16	8.00	2126.20	0.07
17	8.50	2127.70	0.07
18	9.00	2129.00	0.06
19	9.50	2130.10	0.05
20	10.00	2131.20	0.05
21	10.50	2132.20	0.05
22	11.00	2132.90	0.03

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(2132.9 - 7.591179)(1)/(1) = +2.1253E+03 g/L Carbon
(2132.9 - 7.591179)(1)/(1)(12) = +1.7711E+02 Molar Carbon

SS .0804g

Sample Run By: _____
SL HOOD 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03640 Date: 01/21/96 Time: 15:14:30

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.70	0.00
2	1.01	37.90	98.15
3	1.50	469.70	91.93
4	2.00	1150.70	59.18
5	2.50	1536.50	25.11
6	3.00	1687.70	8.96
7	3.50	1760.80	4.15
8	4.00	1798.80	2.11
9	4.50	1813.80	0.83
10	5.00	1820.40	0.36
11	5.50	1825.10	0.26
12	6.00	1828.50	0.19
13	6.50	1831.40	0.16
14	7.00	1834.10	0.15
15	7.50	1836.10	0.11
16	8.00	1838.00	0.10
17	8.50	1839.80	0.10
18	9.00	1841.40	0.09
19	9.50	1842.60	0.07
20	10.00	1844.00	0.08
21	10.50	1845.10	0.06
22	11.00	1846.20	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(1846.2 - 7.589789)(1)/(1) = +1.8386E+03 g/L Carbon
(1846.2 - 7.589789)(1)/(1)(12) = +1.5322E+02 Molar Carbon

SS .0850g

Sample Run By: _____
SL HOOD 00000

1839/0.0850 = 2.16e4

1283

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164 REV 1

Sample: S95T03640 DUP Date: 01/21/96 Time: 15:46:41

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .69 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	52.90	99.05
3	1.51	665.70	92.05
4	2.01	1412.60	52.87
5	2.51	2067.70	31.68
6	3.00	2261.00	8.55
7	3.50	2344.30	3.55
8	4.00	2390.50	1.93
9	4.50	2411.60	0.87
10	5.00	2420.50	0.37
11	5.50	2426.50	0.25
12	6.00	2431.10	0.19
13	6.50	2434.70	0.15
14	7.00	2438.10	0.14
15	7.50	2440.50	0.10
16	8.00	2442.70	0.09
17	8.50	2444.40	0.07
18	9.00	2446.00	0.07
19	9.50	2447.50	0.06
20	10.00	2448.80	0.05
21	10.50	2449.90	0.04
22	11.00	2451.00	0.04

USER INPUT BLANK VALUE
BLANK VALUE = 7.591137 micrograms carbon
BLANK FACTOR = 7.591137 / 11.00165 = +6.9E-01 ug/min Carbon

SAMPLE RESULTS:
(2451 - 7.591684)(1)/(1) = +2.4434E+03 g/L Carbon
(2451 - 7.591684)(1)/(1)(12) = +2.0362E+02 Molar Carbon

So .1256g

Sample Run By: _____
SL HOOD 00000

2443/0.1256 = 1.95e4

1284

^^

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

WHC-SD-WM-DP-164, REV.

Sample: BLK Date: 01/21/96 Time: 11:25:09

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

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	3.90	87.18
3	1.51	9.90	60.61
4	2.01	14.50	31.72
5	2.51	16.90	14.20
6	3.01	18.10	6.63
7	3.51	18.90	4.23
8	4.01	19.80	4.55
9	4.50	20.40	2.94
10	5.00	21.20	3.77
11	5.50	21.90	3.20
12	6.00	22.60	3.10
13	6.50	23.10	2.16
14	7.00	23.50	1.70
15	7.50	24.00	2.08
16	8.00	24.30	1.23
17	8.50	24.70	1.62
18	9.00	25.10	1.59
19	9.50	25.40	1.18
20	10.00	25.70	1.17
21	10.50	26.00	1.15
22	11.00	26.20	0.76

BLANK VALUE = 26.2 micrograms carbon
BLANK FACTOR = 26.2 / 11.00165 = +2.38E+00 ug/min Carbon

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

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. X

Sample: STD Date: 01/21/96 Time: 13:04:56

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.38 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.30	0.00
2	1.01	25.60	98.83
3	1.51	182.40	85.96
4	2.00	427.60	57.34
5	2.50	548.20	22.00
6	3.00	583.90	6.11
7	3.50	593.90	1.68
8	4.00	597.40	0.59
9	4.50	599.20	0.30
10	5.00	600.70	0.25
11	5.50	601.70	0.17
12	6.00	602.60	0.15
13	6.50	603.30	0.12
14	7.00	603.80	0.08
15	7.50	604.30	0.08
16	8.00	604.70	0.07
17	8.50	605.20	0.08
18	9.00	605.60	0.07
19	9.50	605.90	0.05
20	10.00	606.30	0.07
21	10.50	606.60	0.05
22	11.00	606.90	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 26.18392 micrograms carbon
BLANK FACTOR = 26.18392 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(606.9 - 26.1816)(1)/(200) = +2.904E+00 g/L Carbon
(606.9 - 26.1816)(1)/(200)(12) = +2.420E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: B-2 Date: 01/21/96 Time: 13:34:40

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.38 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	3.10	83.87
3	1.50	8.10	61.73
4	2.00	11.90	31.93
5	2.50	13.30	10.53
6	3.00	14.30	6.99
7	3.50	15.20	5.92
8	4.00	16.20	6.17
9	4.50	16.90	4.14
10	5.00	17.30	2.31
11	5.50	17.70	2.26
12	6.00	18.00	1.67
13	6.50	18.30	1.64
14	7.00	18.60	1.61
15	7.50	18.90	1.59
16	8.00	19.10	1.05
17	8.50	19.30	1.04
18	9.00	19.50	1.03
19	9.50	19.70	1.02
20	10.00	19.90	1.01
21	10.50	20.00	0.50
22	11.00	20.20	0.99

USER INPUT BLANK VALUE
BLANK VALUE = 26.18392 micrograms carbon
BLANK FACTOR = 26.18392 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(20.2 - 26.17928)(1)/(1) = < 5.00 E-3 g/L Carbon
(20.2 - 26.17928)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 Date: 01/21/96 Time: 14:01:38

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.38 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	4.00	0.00
2	1.01	362.30	98.90
3	1.51	743.10	51.24
4	2.00	905.00	17.89
5	2.50	972.10	6.90
6	3.00	1001.10	2.90
7	3.50	1012.70	1.15
8	4.00	1018.70	0.59
9	4.50	1023.00	0.42
10	5.00	1025.80	0.27
11	5.50	1027.90	0.20
12	6.00	1030.00	0.20
13	6.50	1031.60	0.16
14	7.00	1033.00	0.14
15	7.50	1034.60	0.15
16	8.00	1035.70	0.11
17	8.50	1036.90	0.12
18	9.00	1038.10	0.12
19	9.50	1039.00	0.09
20	10.00	1040.00	0.10
21	10.50	1040.80	0.08
22	11.00	1041.70	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 26.18392 micrograms carbon
BLANK FACTOR = 26.18392 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(1041.7 - 26.17724)(1)/(1) = +1.0155E+03 g/L Carbon
(1041.7 - 26.17724)(1)/(1)(12) = +8.4627E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .20709

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL [redacted]ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 DUP Date: 01/21/96 Time: 14:28:07

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.38 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	54.00	98.52
3	1.51	295.10	81.70
4	2.00	538.40	45.19
5	2.50	670.90	19.75
6	3.00	735.00	8.72
7	3.50	764.90	3.91
8	4.00	778.20	1.71
9	4.50	784.60	0.82
10	5.00	788.50	0.49
11	5.50	791.10	0.33
12	6.00	793.40	0.29
13	6.50	795.30	0.24
14	7.00	796.80	0.19
15	7.50	798.10	0.16
16	8.00	799.50	0.18
17	8.50	800.50	0.12
18	9.00	801.50	0.12
19	9.50	802.40	0.11
20	10.00	803.40	0.12
21	10.50	804.30	0.11
22	11.00	805.00	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 26.18392 micrograms carbon
BLANK FACTOR = 26.18392 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(805 - 26.17913)(1)/(1) = +7.788E+02 g/L Carbon
(805 - 26.17913)(1)/(1)(12) = +6.490E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS = .1370g

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03638 SPK Date: 01/21/96 Time: 15:02:01

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.38 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.90	0.00
2	1.01	102.10	99.12
3	1.51	385.50	73.51
4	2.00	636.30	39.42
5	2.51	730.50	12.90
6	3.01	773.20	5.52
7	3.51	788.00	1.88
8	4.01	793.50	0.69
9	4.50	797.20	0.46
10	5.00	803.20	0.75
11	5.50	806.90	0.46
12	6.00	808.90	0.25
13	6.50	810.20	0.16
14	7.00	811.50	0.16
15	7.50	812.40	0.11
16	8.00	813.40	0.12
17	8.50	814.00	0.07
18	9.00	814.90	0.11
19	9.50	815.60	0.09
20	10.00	816.20	0.07
21	10.50	817.10	0.11
22	11.00	817.60	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 26.18392 micrograms carbon
BLANK FACTOR = 26.18392 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(817.6 - 26.18378)(1)/(1) = +7.914E+02 g/L Carbon
(817.6 - 26.18378)(1)/(1)(12) = +6.595E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0804g

Sample Run By: _____
SL HOOD 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03640 Date: 01/21/96 Time: 15:32:10

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.39 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	54.50	98.17
3	1.50	280.10	80.54
4	2.00	485.40	42.30
5	2.50	582.00	16.60
6	3.00	629.90	7.60
7	3.50	649.30	2.99
8	4.00	655.10	0.89
9	4.50	658.20	0.47
10	5.00	660.60	0.36
11	5.50	662.20	0.24
12	6.00	663.60	0.21
13	6.50	664.80	0.18
14	7.00	665.90	0.17
15	7.50	666.90	0.15
16	8.00	667.70	0.12
17	8.50	668.40	0.10
18	9.00	669.20	0.12
19	9.50	669.90	0.10
20	10.00	670.50	0.09
21	10.50	671.00	0.07
22	11.00	671.70	0.10

USER INPUT BLANK VALUE
BLANK VALUE = 26.29394 micrograms carbon
BLANK FACTOR = 26.29394 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(671.7 - 26.28927)(1)/(1) = +6.454E+02 g/L Carbon
(671.7 - 26.28927)(1)/(1)(12) = +5.378E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .0850g

Sample Run By: _____
SL HOOD 00000

671.7 - 26.3 / 0.0850 = 7.59e3

1291

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: S95T03640 DUP Date: 01/21/96 Time: 16:52:37

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 2.38 ug/minute C

Analyst : SL HOOD
Min Readings = 22
Max Readings = 22
% Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	1.00	0.00
2	1.01	66.80	98.50
3	1.50	352.40	81.04
4	2.00	618.40	43.01
5	2.50	745.00	16.99
6	3.00	806.30	7.60
7	3.50	835.50	3.49
8	4.00	844.80	1.10
9	4.50	849.30	0.53
10	5.00	852.20	0.34
11	5.50	854.40	0.26
12	6.00	856.00	0.19
13	6.50	857.30	0.15
14	7.00	858.50	0.14
15	7.50	859.70	0.14
16	8.00	860.50	0.09
17	8.50	861.40	0.10
18	9.00	862.20	0.09
19	9.50	862.90	0.08
20	10.00	863.70	0.09
21	10.50	864.30	0.07
22	11.00	865.00	0.08

USER INPUT BLANK VALUE
BLANK VALUE = 26.18392 micrograms carbon
BLANK FACTOR = 26.18392 / 11.00165 = +2.4E+00 ug/min Carbon

SAMPLE RESULTS:
(865 - 26.17724)(1)/(1) = +8.388E+02 g/L Carbon
(865 - 26.17724)(1)/(1)(12) = +6.990E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

SS .1256g

Sample Run By: SL HOOD 00000

839/0.1256 = 6.68e3

1292

LABCORE Data Entry Template for Worklist# 5015

Analyst: pjm **Instrument:** CARB2 **Book #** TOC 16N12D TIC 17N12D

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

Worklist Comment: @TICTOC BY-104 RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID	1	1.5	N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID	1	4.0	N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID	6.00e2	6.08e2	N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID	3.00e3	2.92e3	N/A	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003646	0		@TICTOC1 TIC-02	SOLID	N/A	2.06e4	5.00	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003646	0		@TICTOC1 TOC-02	SOLID	N/A	6.10e3	40.0	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003646	0		@TICTOC1 TIC-02	SOLID	2.06e4	2.25e4	N/A	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003646	0		@TICTOC1 TOC-02	SOLID	6.10e3	6.00e3	N/A	ug/g
95000180	BY104 ROTARY	5	SPK	S95T003646	0		@TICTOC1 TIC-02	SOLID	100	103.8	N/A	ug/g
95000180	BY104 ROTARY	5	SPK	S95T003646	0		@TICTOC1 TOC-02	SOLID	100	98.0	N/A	ug/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003647	0		@TICTOC1 TIC-02	SOLID	N/A	6.49e3	5.00	ug/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003647	0		@TICTOC1 TOC-02	SOLID	N/A	1.28e4	40.0	ug/g
95000180	BY104 ROTARY	7	DUP	S95T003647	0		@TICTOC1 TIC-02	SOLID	6.49e3	1.19e4	N/A	ug/g
95000180	BY104 ROTARY	7	DUP	S95T003647	0		@TICTOC1 TOC-02	SOLID	1.28e4	1.22e4	N/A	ug/g
95000180	BY104 ROTARY	8	TRIPL	S95T003647	0		@TICTOC1 TIC-02	SOLID	6.49e3	4.93e3	N/A	ug/g
95000180	BY104 ROTARY	8	TRIPL	S95T003647	0		@TICTOC1 TOC-02	SOLID	N/A	N/A	N/A	ug/g

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 5015

GROUP	PROJECT	S TYPE	SAMPLE#	R A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT

Final page for worklist # 5015

See attached WL for analysts signature
Analyst Signature Date

[signature] 1-22-96
Analyst Signature Date
Reviewed RW Schroeder 1/29/96

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Data Entry Template for Worklist# 5015

Analyst: RJMcCown **Instrument:** CARB2 _____ **Book #** 16N12 TOC 17N12 TIC

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

Worklist Comment: @TICTOC BY-104 RCJ

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	BLNK				@TICTOC1 TIC-02	SOLID	1	1.5	N/A	ug/g
		1	BLNK				@TICTOC1 TOC-02	SOLID	1	4.0	N/A	ug/g
		2	STD				@TICTOC1 TIC-02	SOLID	6.00e2	6.08e2	N/A	ug/g
		2	STD				@TICTOC1 TOC-02	SOLID	3.00e3	2.92e3	N/A	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003646	0		@TICTOC1 TIC-02	SOLID	N/A	~~6.10e3~~ 2.06e4	5.00 RWS 1/22/96	ug/g
95000180	BY104 ROTARY	3	SAMPLE	S95T003646	0		@TICTOC1 TOC-02	SOLID	N/A	6.10e3	4.00e1	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003646	0		@TICTOC1 TIC-02	SOLID	2.06e4	2.25e4	N/A	ug/g
95000180	BY104 ROTARY	4	DUP	S95T003646	0		@TICTOC1 TOC-02	SOLID	6.10e3	6.00e3	N/A	ug/g
95000180	BY104 ROTARY	5	SPK	S95T003646	0		@TICTOC1 TIC-02	SOLID	100	103.8	N/A	ug/g
95000180	BY104 ROTARY	5	SPK	S95T003646	0		@TICTOC1 TOC-02	SOLID	100	98.0	N/A	ug/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003647	0		@TICTOC1 TIC-02	SOLID	N/A	6.49e3	5.00	ug/g
95000180	BY104 ROTARY	6	SAMPLE	S95T003647	0		@TICTOC1 TOC-02	SOLID	N/A	1.28e4	4.00e1	ug/g
95000180	BY104 ROTARY	7	DUP	S95T003647	0		@TICTOC1 TIC-02	SOLID	6.49e3		N/A	ug/g
95000180	BY104 ROTARY	7	DUP	S95T003647	0		@TICTOC1 TOC-02	SOLID	1.28e4	1.22e4	N/A	ug/g

Final page for worklist # 5015

RJMcCown 1/22/96
Analyst Signature **Date**

Analyst Signature **Date**

Data Entry Comments:

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

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

Sample: BASE Date: 01/21/96 Time: 19:58:24

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

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	1.10	72.73
3	1.50	4.50	75.56
4	2.00	9.70	53.61
5	2.50	12.70	23.62
6	3.00	14.40	11.81
7	3.50	15.50	7.10
8	4.00	16.40	5.49
9	4.50	17.00	3.53
10	5.00	17.50	2.86
11	5.50	17.90	2.23
12	6.00	18.30	2.19
13	6.50	18.60	1.61
14	7.00	19.00	2.11
15	7.50	19.20	1.04
16	8.00	19.50	1.54
17	8.50	19.80	1.52
18	9.00	20.10	1.49
19	9.50	20.30	0.99
20	10.00	20.50	0.98
21	10.50	20.70	0.97
22	11.00	20.90	0.96

SIGNATURE BELOW REPRESENTS CHEMICAL TECHNOLOGIST/CHEMIST THAT COMPLETED/VERIFIED THE CALIBRATION/ANALYSIS ON PAGES 1296 TO 1312

BLANK VALUE = 20.9 micrograms carbon
BLANK FACTOR = 20.9 / 10.99963 = +1.90E+00 ug/min Carbon

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

Sample Run By: PJ McCown 1/22/96
PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 16N12D STD Date: 01/21/96 Time: 20:48:46

Sample Size = 200 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.9 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	1.00	1.10	81.82
3	1.50	27.30	95.97
4	2.00	155.10	82.40
5	2.50	391.40	60.37
6	3.00	510.10	23.27
7	3.50	562.00	9.23
8	4.00	588.40	4.49
9	4.50	596.50	1.36
10	5.00	599.00	0.42
11	5.50	600.20	0.20
12	6.00	601.00	0.13
13	6.50	601.70	0.12
14	7.00	602.20	0.08
15	7.50	602.70	0.08
16	8.00	603.20	0.08
17	8.50	603.60	0.07
18	9.00	604.10	0.08
19	9.50	604.50	0.07
20	10.00	604.70	0.03
21	10.50	605.20	0.08
22	11.00	605.50	0.05

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(605.5 - 20.89582)(1)/(200) = +2.923E+00 g/L Carbon
(605.5 - 20.89582)(1)/(200)(12) = +2.436E-01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown 1/21/96
PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: BLANK Date: 01/21/96 Time: 21:16:59

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.9 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	0.60	33.33
3	1.50	2.20	72.73
4	2.00	5.90	62.71
5	2.50	9.10	35.16
6	3.00	11.00	17.27
7	3.50	11.90	7.56
8	4.00	12.50	4.80
9	4.50	12.90	3.10
10	5.00	13.30	3.01
11	5.50	13.80	3.62
12	6.00	14.10	2.13
13	6.50	14.50	2.76
14	7.00	14.90	2.68
15	7.50	15.10	1.32
16	8.00	15.40	1.95
17	8.50	15.70	1.91
18	9.00	16.00	1.88
19	9.50	16.20	1.23
20	10.00	16.40	1.22
21	10.50	16.60	1.20
22	11.00	16.90	1.78

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(16.9 - 20.90162)(1)/(1) = < 5.00 E-3 g/L Carbon
(16.9 - 20.90162)(1)/(1)(12) = < 4.17 E-4 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV. I

Sample: 3646 SAMPLE Date: 01/21/96 Time: 22:57:23

Sample Size = 1 uL Analyst : PJ MCCOWN
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 1.9 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.80	0.00
2	1.01	15.40	94.81
3	1.50	122.40	87.42
4	2.00	220.90	44.59
5	2.50	280.60	21.28
6	3.00	312.40	10.18
7	3.50	324.60	3.76
8	4.00	328.60	1.22
9	4.50	331.20	0.79
10	5.00	332.90	0.51
11	5.50	334.20	0.39
12	6.00	335.40	0.36
13	6.50	336.40	0.30
14	7.00	337.10	0.21
15	7.50	337.80	0.21
16	8.00	338.40	0.18
17	8.50	339.00	0.18
18	9.00	339.50	0.15
19	9.50	340.00	0.15
20	10.00	340.40	0.12
21	10.50	340.80	0.12
22	11.00	341.10	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(341.1 - 20.90116)(1)/(1) = +3.202E+02 g/L Carbon
(341.1 - 20.90116)(1)/(1)(12) = +2.668E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

320.2 / .05258 = 6.10e3 ug/g

1299

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3646 DUP Date: 01/21/96 Time: 23:31:41

Sample Size = 1 uL Analyst : PJ MCCOWN
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 1.9 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.60	0.00
2	1.01	3.40	82.35
3	1.51	42.60	92.02
4	2.00	114.60	62.83
5	2.50	180.70	36.58
6	3.00	225.80	19.97
7	3.50	249.90	9.64
8	4.00	258.00	3.14
9	4.50	261.20	1.23
10	5.00	262.90	0.65
11	5.50	264.20	0.49
12	6.00	265.40	0.45
13	6.50	266.40	0.38
14	7.00	267.10	0.26
15	7.50	267.90	0.30
16	8.00	268.30	0.15
17	8.50	268.90	0.22
18	9.00	269.60	0.26
19	9.50	269.80	0.07
20	10.00	270.30	0.18
21	10.50	270.60	0.11
22	11.00	271.00	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(271 - 20.89977)(1)/(1) = +2.501E+02 g/L Carbon
(271 - 20.89977)(1)/(1)(12) = +2.084E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCowen
PJ MCCOWN 00000

250.1
.04178 = 5.998 or 6.00 e3 1300

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3646 SPIKE Date: 01/22/96 Time: 00:22:45

Sample Size = 1 uL Analyst : PJ MCCOWN
Dil Factor = 1 Min Readings = 22
Blank ID # = Max Readings = 22
Blank Value = 1.9 ug/minute C % Difference = 10

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	0.50	0.00
2	1.01	7.30	93.15
3	1.51	70.00	89.57
4	2.01	229.30	69.47
5	2.50	417.70	45.10
6	3.01	522.80	20.10
7	3.50	576.80	9.36
8	4.00	606.80	4.94
9	4.50	618.90	1.96
10	5.00	622.80	0.63
11	5.50	625.60	0.45
12	6.00	627.50	0.30
13	6.50	628.90	0.22
14	7.00	630.30	0.22
15	7.50	631.60	0.21
16	8.00	632.50	0.14
17	8.50	633.40	0.14
18	9.00	634.40	0.16
19	9.50	635.10	0.11
20	10.00	635.70	0.09
21	10.50	636.30	0.09
22	11.00	636.90	0.09

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(636.9 - 20.89968)(1)/(1) = +6.160E+02 g/L Carbon
(636.9 - 20.89968)(1)/(1)(12) = +5.133E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

.0539g

$$\frac{636.9}{\left(\frac{341.1}{0.0525}\right)0.0539 + 300} \times 100 = 97.95$$

1301

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3647 SAMPLE Date: 01/22/96 Time: 03:24:18

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.9 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	6.10	90.16
3	1.51	46.20	86.80
4	2.00	131.40	64.84
5	2.50	263.90	50.21
6	3.00	388.20	32.02
7	3.50	479.10	18.97
8	4.00	549.30	12.78
9	4.50	604.20	9.09
10	5.00	646.70	6.57
11	5.50	678.10	4.63
12	6.00	700.60	3.21
13	6.50	716.50	2.22
14	7.00	728.80	1.69
15	7.50	738.50	1.31
16	8.00	746.80	1.11
17	8.50	754.00	0.95
18	9.00	760.00	0.79
19	9.50	765.20	0.68
20	10.00	769.80	0.60
21	10.50	773.50	0.48
22	11.00	777.20	0.48

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(777.2 - 20.8978)(1)/(1) = +7.563E+02 g/L Carbon
(777.2 - 20.8978)(1)/(1)(12) = +6.303E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

756.3 / .0592g = 1.28e4

1302

TOC- TOTAL ORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3647 DUP Date: 01/22/96 Time: 04:05:42

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = 1.9 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	24.60	93.50
3	1.51	88.20	72.11
4	2.00	191.70	53.99
5	2.50	316.10	39.35
6	3.00	419.90	24.72
7	3.50	500.40	16.09
8	4.00	563.30	11.17
9	4.50	614.00	8.26
10	5.00	654.20	6.14
11	5.50	685.10	4.51
12	6.00	708.30	3.28
13	6.50	726.40	2.49
14	7.00	741.20	2.00
15	7.50	753.50	1.63
16	8.00	764.10	1.39
17	8.50	773.10	1.16
18	9.00	780.90	1.00
19	9.50	788.00	0.90
20	10.00	793.80	0.73
21	10.50	799.90	0.76
22	11.00	805.40	0.68

USER INPUT BLANK VALUE
BLANK VALUE = 20.8993 micrograms carbon
BLANK FACTOR = 20.8993 / 10.99963 = +1.9E+00 ug/min Carbon

SAMPLE RESULTS:
(805.4 - 20.89783)(1)/(1) = +7.845E+02 g/L Carbon
(805.4 - 20.89783)(1)/(1)(12) = +6.538E+01 Molar Carbon
<<<< WARNING - BLANK VALUE EXCEEDS 1.5 ug/min Carbon!!!!!>>>>

Sample Run By: PJ McCown
PJ MCCOWN 00000

784.5 / .06448 = 1.218e4

1303

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

WHC-SD-WM-DP-164, REV. 1

Sample: BASE Date: 01/21/96 Time: 19:39:46

Sample Size = 1 uL
Dil Factor = 1
Blank ID # = BASE
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	1.10	45.45
4	2.01	1.50	26.67
5	2.51	1.90	21.05
6	3.01	2.30	17.39
7	3.50	2.50	8.00
8	4.00	2.80	10.71
9	4.50	3.10	9.68
10	5.00	3.40	8.82
11	5.50	3.60	5.56
12	6.00	3.90	7.69
13	6.50	4.20	7.14
14	7.00	4.50	6.67
15	7.50	4.80	6.25
16	8.00	5.10	5.88
17	8.50	5.30	3.77
18	9.00	5.70	7.02
19	9.50	5.90	3.39
20	10.00	6.10	3.28
21	10.50	6.30	3.17
22	11.00	6.50	3.08

BLANK VALUE = 6.5 micrograms carbon
BLANK FACTOR = 6.5 / 10.99878 = +5.9E-01 ug/min Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 17N12D STD Date: 01/21/96 Time: 20:35:23

Sample Size = 1000 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	2.10	61.90
3	1.51	27.00	92.22
4	2.00	126.40	78.64
5	2.50	270.00	53.19
6	3.00	399.30	32.38
7	3.50	483.70	17.45
8	4.00	542.40	10.82
9	4.50	580.30	6.53
10	5.00	600.30	3.33
11	5.50	607.50	1.19
12	6.00	609.80	0.38
13	6.50	610.90	0.18
14	7.00	611.50	0.10
15	7.50	611.90	0.07
16	8.00	612.20	0.05
17	8.50	612.50	0.05
18	9.00	612.80	0.05
19	9.50	613.10	0.05
20	10.00	613.50	0.07
21	10.50	613.80	0.05
22	11.00	614.00	0.03

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(614 - 6.489279)(1)/(1000) = +6.075E-01 g/L Carbon
(614 - 6.489279)(1)/(1000)(12) = +5.063E-02 Molar Carbon

Sample Run By: PJ McCown 1/21/96
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: BLANK Date: 01/21/96 Time: 21:02:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	0.90	55.56
3	1.51	2.50	64.00
4	2.01	3.40	26.47
5	2.50	4.10	17.07
6	3.00	4.50	8.89
7	3.50	4.80	6.25
8	4.00	5.00	4.00
9	4.50	5.30	5.66
10	5.00	5.50	3.64
11	5.50	5.70	3.51
12	6.00	5.90	3.39
13	6.50	6.10	3.28
14	7.00	6.40	4.69
15	7.50	6.50	1.54
16	8.00	6.70	2.99
17	8.50	6.90	2.90
18	9.00	7.30	5.48
19	9.50	7.40	1.35
20	10.00	7.60	2.63
21	10.50	7.80	2.56
22	11.00	8.00	2.50

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(8 - 6.490504)(1)/(1) = +1.5E+00 g/L Carbon
(8 - 6.490504)(1)/(1)(12) = +1.3E-01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3646 SAMPLE Date: 01/21/96 Time: 22:43:23

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	13.00	96.92
3	1.51	177.10	92.66
4	2.00	494.80	64.21
5	2.50	756.60	34.60
6	3.00	908.70	16.74
7	3.50	986.50	7.89
8	4.00	1032.40	4.45
9	4.50	1056.20	2.25
10	5.00	1065.30	0.85
11	5.50	1069.20	0.36
12	6.00	1072.30	0.29
13	6.50	1074.50	0.20
14	7.00	1076.70	0.20
15	7.50	1078.20	0.14
16	8.00	1079.60	0.13
17	8.50	1080.70	0.10
18	9.00	1081.70	0.09
19	9.50	1082.60	0.08
20	10.00	1083.40	0.07
21	10.50	1084.00	0.06
22	11.00	1084.70	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(1084.7 - 6.489352)(1)/(1) = +1.0782E+03 g/L Carbon
(1084.7 - 6.489352)(1)/(1)(12) = +8.9851E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

1080 / .0525g = 2.06e4

1307

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3646 DUP Date: 01/21/96 Time: 23:14:13

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	9.50	96.84
3	1.51	151.80	93.74
4	2.00	422.50	64.07
5	2.50	650.20	35.02
6	3.00	778.40	16.47
7	3.50	850.60	8.49
8	4.00	894.90	4.95
9	4.50	919.30	2.65
10	5.00	928.90	1.03
11	5.50	932.90	0.43
12	6.00	935.50	0.28
13	6.50	937.60	0.22
14	7.00	939.30	0.18
15	7.50	940.70	0.15
16	8.00	942.00	0.14
17	8.50	943.00	0.11
18	9.00	944.10	0.12
19	9.50	945.00	0.10
20	10.00	945.60	0.06
21	10.50	946.30	0.07
22	11.00	946.90	0.06

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(946.9 - 6.49036)(1)/(1) = +9.404E+02 g/L Carbon
(946.9 - 6.49036)(1)/(1)(12) = +7.837E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

940 / .0417g = 2.25e4

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3646 SPIKE Date: 01/22/96 Time: 00:02:19

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	1.00	8.20	93.90
3	1.50	205.90	96.02
4	2.00	610.70	66.28
5	2.50	968.00	36.91
6	3.00	1195.30	19.02
7	3.50	1306.60	8.52
8	4.00	1374.70	4.95
9	4.50	1415.60	2.89
10	5.00	1436.70	1.47
11	5.50	1444.60	0.55
12	6.00	1449.00	0.30
13	6.50	1452.30	0.23
14	7.00	1454.90	0.18
15	7.50	1457.10	0.15
16	8.00	1459.10	0.14
17	8.50	1460.90	0.12
18	9.00	1462.40	0.10
19	9.50	1463.60	0.08
20	10.00	1464.70	0.08
21	10.50	1465.70	0.07
22	11.00	1466.70	0.07

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(1466.7 - 6.489784)(1)/(1) = +1.4602E+03 g/L Carbon
(1466.7 - 6.489784)(1)/(1)(12) = +1.2168E+02 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

.0539g

1309

$$\frac{1466.7}{\left(\frac{1084.7}{0.0525}\right)0.0539 + 300} \times 100 = 103.8$$

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3647 SAMPLE Date: 01/22/96 Time: 03:10:22

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 ug/minute C

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

== Reading	==== Analysis Time	==== Coulometer	==== % Difference ==
1	0.51	2.00	0.00
2	1.01	6.20	67.74
3	1.51	38.60	83.94
4	2.00	107.30	64.03
5	2.50	192.00	44.11
6	3.00	259.70	26.07
7	3.50	308.60	15.85
8	4.00	341.40	9.61
9	4.50	360.10	5.19
10	5.00	368.60	2.31
11	5.50	373.00	1.18
12	6.00	376.10	0.82
13	6.50	378.80	0.71
14	7.00	380.90	0.55
15	7.50	382.70	0.47
16	8.00	384.40	0.44
17	8.50	386.40	0.52
18	9.00	387.50	0.28
19	9.50	388.60	0.28
20	10.00	389.60	0.26
21	10.50	390.40	0.20
22	11.00	391.00	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(391 - 6.489892)(1)/(1) = +3.845E+02 g/L Carbon
(391 - 6.489892)(1)/(1)(12) = +3.204E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

384.5 / .0592g = 6.49e3

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0
WHC-SD-WM-DP-164, REV.1

Sample: 3647 DUP Date: 01/22/96 Time: 03:51:47

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	2.90	82.76
3	1.50	54.00	94.63
4	2.00	204.90	73.65
5	2.50	392.10	47.74
6	3.00	526.00	25.46
7	3.50	613.50	14.26
8	4.00	672.70	8.80
9	4.50	713.00	5.65
10	5.00	736.70	3.22
11	5.50	748.00	1.51
12	6.00	753.20	0.69
13	6.50	757.30	0.54
14	7.00	760.20	0.38
15	7.50	763.10	0.38
16	8.00	765.30	0.29
17	8.50	767.40	0.27
18	9.00	769.30	0.25
19	9.50	771.00	0.22
20	10.00	772.50	0.19
21	10.50	773.80	0.17
22	11.00	775.00	0.15

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(775 - 6.489892)(1)/(1) = +7.685E+02 g/L Carbon
(775 - 6.489892)(1)/(1)(12) = +6.404E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

768.5 / .06448 = 1.19e4 **1311**

TIC- TOTAL INORGANIC CARBON ANALYSIS REPORT
TICTOC REV 2.0

WHC-SD-WM-DP-164, REV. 1

Sample: 3647 TRIP Date: 01/22/96 Time: 04:35:08

Sample Size = 1 uL
Dil Factor = 1
Blank ID # =
Blank Value = .59 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	1.70	70.59
3	1.51	14.10	87.94
4	2.00	44.00	67.95
5	2.50	87.40	49.66
6	3.00	136.40	35.92
7	3.50	186.20	26.75
8	4.00	229.50	18.87
9	4.50	262.20	12.47
10	5.00	282.50	7.19
11	5.50	292.90	3.55
12	6.00	298.80	1.97
13	6.50	303.10	1.42
14	7.00	306.60	1.14
15	7.50	309.80	1.03
16	8.00	312.30	0.80
17	8.50	314.50	0.70
18	9.00	316.50	0.63
19	9.50	318.50	0.63
20	10.00	319.90	0.44
21	10.50	321.30	0.44
22	11.00	322.70	0.43

USER INPUT BLANK VALUE
BLANK VALUE = 6.489784 micrograms carbon
BLANK FACTOR = 6.489784 / 10.99963 = +5.9E-01 ug/min Carbon

SAMPLE RESULTS:
(322.7 - 6.48991)(1)/(1) = +3.162E+02 g/L Carbon
(322.7 - 6.48991)(1)/(1)(12) = +2.635E+01 Molar Carbon

Sample Run By: PJ McCown
PJ MCCOWN 00000

322.7 / .0654g = 4.93

RADIOCHEMICAL ANALYSES

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BY104

LABCORE Data Entry Template for Worklist# 4444

Analyst: KGM **Instrument:** AB00 16 **Book#** 116526

Method: LA-508-101 Rev/Mod ~~D-1~~ D-2 ~~B~~ 6/5/96 WHC-SD-WM-DP-164, REV. 1

Worklist Comment: Use .05 mL sample size. Use .1 mL A-SPK. Rerun #1. SLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S95T003530	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
5	DUP	S95T003530	0	Z	@ALPHA01	SOLID		
6	SPK	S95T003530	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4444

Analyst Signature 12-21-95 Date

SC Hogan 12/22/95
Analyst Signature Date

CJ - Opinion 12/22/95

Data Entry Comments:

The RPD + SPK recoveries are consistent with the 1st run - indicates matrix problem (dissolved solids in sample). No rerun requested. 12/29/95

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

LABCORE Completed Worklist Report for Worklist# 4444

Analyst: kgh **Instrument:** AB16 **Book#** _____

Method: _____ Rev/Mod _____ WHC-SD-WM-DP-164, REV. 1

Worklist Comment: Use .05 mL sample size. Use .1 mL A-SPK. Rerun #1. SLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.92E-05	1.77E-5	92.190	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00	3.96E+00	3.960	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1	<6.90E-4		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00	5.00E+02	500.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01	ALPHA01	SOLID	1.00E+00	8.59E-01	0.860	uCi/g
4	SAMPLE	S95T003530	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	1.68E-02	1.220e-003	uCi/g
4	SAMPLE	S95T003530	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	1.33E+01	0.000	% Ct. Error
5	DUP	S95T003530	0	Z	@ALPHA01	ALPHA01	SOLID	1.68E-2	1.37E-2	20.330	RPD
5	DUP	S95T003530	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	1.37E+01	13.700	% Ct. Error
6	SPK	S95T003530	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	1.21E-02	30.870	% Recovery

Final page for worklist# 4444

Analyst Signature Date Analyst Signature Date

12/29/95

Reviewer Signature Date

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		16	16
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	2483	2488
4444	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.33	0.33
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	11B56	11B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		82.437	82.603
Batch Number	Standard Value in µCi/mL		1.92E-05	
95004992	Concentration in µCi/L	=	1.76E-02	
Rerun	Replicate Concentration in µCi/L	=	1.77E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.7667E-02	
Sample Prep				
N/A				
Sample #				
WL#4444				
Instrument Code				
WB27806				
Prepared By				
SEH				
Chemist				
SLF				
Analyst				
KGH				
Date Complete				
12/22/95				
Analysis Date				
12/21/95				
Analysis Time				
10:30 AM				
Sample Point				
BY104 ROTARY				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL CONCENTRATION in µCi/mL		1.77E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR	=	4.0%	1.24E-07 µCi/mL

Analyst:		SEH	Date: 22-Dec-95
Signature of Chemist:		SLF	Date: 12/28/95

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		16	16
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	5	12
4444	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.33	0.33
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0312	2.0312
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.245	0.327
Batch Number				
95004992	Blank Concentration in µCi/g	<	5.16E-04	
Rerun	Replicate Concentration in µCi/g	<	6.90E-04	
0	Maximum Concentration in µCi/g	<	6.9014E-04	
Sample Prep				
N/A				
Sample #				
WL#4444				
Instrument Code				
WB27806				
Prepared By				
SEH				
Chemist				
SLF				
Analyst				
KGH				
Date Complete				
12/22/95				
Analysis Date				
12/21/95				
Analysis Time				
10:30 AM				
Sample Point				
BY104 ROTARY				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 6.90E-04	1.22E-03 µCi/g
LESS Than Value was Determined from Lc.			
RELATIVE COUNTING ERROR		500.0%	

Analyst:	SEH		Date: 22-Dec-95
Signature of Chemist:		SLF	Date: 12/28/95

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		16	16
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	246	252
4444	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.33	0.33
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0312	2.0312
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7.870	8.070

Batch Number	
95004992	Blank Concentration in µCi/g 1.66E-02
Rerun	Replicate Concentration in µCi/g 1.70E-02
1	Average Concentration in µCi/g 1.6801E-02
Sample Prep	
FUS-ZR01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
S95T003530	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
SEH	
Chemist	v RESULTS v
SLF	ALPHA TOTAL in µCi/g 1.68E-02
Analyst	
KGH	
Date Complete	
12/22/95	RELATIVE COUNTING ERROR 13.3%
Analysis Date	
12/21/95	
Analysis Time	
10:30 AM	
Sample Point	
BY104 ROTARY	

DETECTION LEVEL
1.22E-03 µCi/g

Analyst:		SEH	Date: 22-Dec-95
Signature of Chemist:		SLF	Date: 12/28/95

SAMPLE.WB1 Rev. 1.0 508101MI

WORKBOOK PAGE: DUP5

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		16	16
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	232	233
4444	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.33	0.33
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.3212	2.3212
Matrix	EFFICIENCY FACTOR	(EFF)	0.2104	0.2104
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		7.403	7.437

Batch Number	
95004992	Blank Concentration in µCi/g 1.37E-02
Rerun	Replicate Concentration in µCi/g 1.37E-02
1	Average Concentration in µCi/g 1.3687E-02
Sample Prep	
FUS-ZR01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
S95T003530	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB27806	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
SEH	
Chemist	v RESULTS v
SLF	ALPHA TOTAL in µCi/g 1.37E-02
Analyst	
KGH	
Date Complete	
12/22/95	RELATIVE COUNTING ERROR 13.7%
Analysis Date	
12/21/95	
Analysis Time	
10:30 AM	
Sample Point	
BY104 ROTARY	

DETECTION LEVEL
1.07E-03 µCi/g

Analyst:	SEH		Date: 22-Dec-95
Signature of Chemist:		SLF	Date: 12/28/95

SAMPLE.WB1 Rev. 1.0 508101ML

1320

WORKBOOK PAGE: SPIKE6

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
DETECTOR NUMBER			16	16
DISH SIZE 1 , 2 , or 5		(MS)	2	2
TOTAL COUNTS		(TC)	17687	16616
COUNT TIME in MINUTES		(CT)	30	30
BACKGROUND in cpm		(BKG)	0.33	0.33
SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.500	0.500
SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	1	1
DIGEST GRAMS of SOLIDS / L		(Dg/L)	2.0312	2.0312
SPIKE VOLUME in mL		(SVol)	0.100	0.100
SPIKE DILUTION FACTOR		(SDF)	1	1
SPIKE BOOK NUMBER		(Spk BN)	119B43	119B43
SPIKE VALUE in µCi/mL		(SVal)	3.9215E-02	3.9215E-02
INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.2104	0.2104
SAMPLE + SPIKE µCi/g		(S+S)	1.24E+00	1.17E+00
AVERAGE or MAXIMUM µCi/g in SAMPLE			1.6801E-02	

Type	SPK
Work List	4444
AT or TB ?	AT
Test Code	@ALPHA01
Matrix	SOLID
Batch Number	95004992
Rerun	1
Sample Prep	FUS-ZR01
Sample #	S95T003530
Instrument Code	WB27806
Prepared By	SEH
Chemist	SLF
Analyst	KGH
Date Complete	12/22/95
Analysis Date	12/21/95
Analysis Time	10:30 AM
Sample Point	BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

QC ACTUAL = SVal

QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))

PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100

QC ACTUAL	=	3.92E-02
QC FOUND	=	1.21E-02
AVG. PERCENT SPIKE RECOVERY	=	30.8%

Analyst:	SEH	Date: 22-Dec-95
Signature of Chemist:	SLF	Date: 12/28/95

SPIKE.WB1 Rev. 1.0 508101ML

LABCORE Data Entry Template for Worklist# 4627

Analyst: S.C.L. **Instrument:** AB00 #14 **Book#** 14856

Method: LA-508-101 Rev/Mod 0-2

Worklist Comment: Sample sizes given on traveler. Rerun #1. SLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	SAMPLE	S95T003786	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
4	DUP	S95T003786	0	Z	@ALPHA01	SOLID		
5	SPK	S95T003786	0	Z	@ALPHA01	SOLID		
6	SAMPLE	S95T003787	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
7	DUP	S95T003787	0	Z	@ALPHA01	SOLID		
8	SPK	S95T003787	0	Z	@ALPHA01	SOLID		
9	SAMPLE	S95T003788	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
10	DUP	S95T003788	0	Z	@ALPHA01	SOLID		
11	SPK	S95T003788	0	Z	@ALPHA01	SOLID		
12	SAMPLE	S95T003789	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
13	DUP	S95T003789	0	Z	@ALPHA01	SOLID		
14	SPK	S95T003789	0	Z	@ALPHA01	SOLID		
15	SAMPLE	S95T003790	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
16	DUP	S95T003790	0	Z	@ALPHA01	SOLID		

Data Entry Comments:

Reruns requested for samples 3788 + 3789 by backup Chemist
Spike: 119843 to confirm counts. [illegible] 1/9/96

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

LABCORE Completed Worklist Report for Worklist# 4627

Analyst: scl **Instrument:** AB14 **Book#** _____

Method: _____ Rev/Mod _____ WHC-SD-WM-DP-164, REV. 1

Worklist Comment: Sample sizes given on traveler. Rerun #1. SLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual		Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.54E-05		1.29E-5	83.770	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00		4.47E+00	4.470	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1		<6.47E-2		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00		5.00E+02	500.000	% Ct. Error
3	SAMPLE	S95T003786	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	<	6.47E-02	0.147	uCi/g
3	SAMPLE	S95T003786	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A		5.00E+02	0.000	% Ct. Error
4	DUP	S95T003786	0	Z	@ALPHA01	ALPHA01	SOLID	<6.47E-2		<6.49E-2		RPD
4	DUP	S95T003786	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00		5.00E+02	500.000	% Ct. Error
5	SPK	S95T003786	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02		2.95E-02	75.260	% Recovery
6	SAMPLE	S95T003787	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	<	1.26E-01	0.287	uCi/g
6	SAMPLE	S95T003787	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A		5.00E+02	0.000	% Ct. Error
7	DUP	S95T003787	0	Z	@ALPHA01	ALPHA01	SOLID	<1.26E-1		<1.53E-1		RPD
7	DUP	S95T003787	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00		5.00E+02	500.000	% Ct. Error
8	SPK	S95T003787	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02		3.06E-02	78.060	% Recovery
9	SAMPLE	S95T003788	0	Z	@ALPHA01	ALPHA01	SOLID	N/A		6.45E-01	0.727	uCi/g
9	SAMPLE	S95T003788	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A		8.83E+01	0.000	% Ct. Error
10	DUP	S95T003788	0	Z	@ALPHA01	ALPHA01	SOLID	6.45E-1		<5.10E-1		RPD
10	DUP	S95T003788	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00		2.51E+02	251.000	% Ct. Error
11	SPK	S95T003788	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02		2.88E-02	73.470	% Recovery
12	SAMPLE	S95T003789	0	Z	@ALPHA01	ALPHA01	SOLID	N/A		6.55E-03	7.380e-003	uCi/g
12	SAMPLE	S95T003789	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A		9.33E+01	0.000	% Ct. Error
13	DUP	S95T003789	0	Z	@ALPHA01	ALPHA01	SOLID	6.55E-3		7.76E-3	16.910	RPD
13	DUP	S95T003789	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00		6.55E+01	65.500	% Ct. Error
14	SPK	S95T003789	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02		1.76E-02	44.900	% Recovery
15	SAMPLE	S95T003790	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	<	6.16E-02	0.140	uCi/g
15	SAMPLE	S95T003790	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A		5.00E+02	0.000	% Ct. Error
16	DUP	S95T003790	0	Z	@ALPHA01	ALPHA01	SOLID	<6.16E-2		<7.76E-2		RPD
16	DUP	S95T003790	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00		5.00E+02	500.000	% Ct. Error
17	SPK	S95T003790	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02		3.19E-02	81.380	% Recovery

Final page for worklist# 4627

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

1/9/96

Reviewer Signature **Date**

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

LABCORE Data Entry Template for Worklist# 4627

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
17	SPK	S95T003790	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4627

Sue C Fu 1-3-96
Analyst Signature Date

Analyst Signature Date 1/5/96

C.J. Quinn 1/5/96

Data Entry Comments:

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		14	14
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	1972	1985
4627	COUNT TIME in MINUTES	(CT)	30	30
Alpha/Beta ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	14B56	14B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		65.133	65.567
Batch Number	Standard Value in µCi/mL		1.54E-05	
96000045	Concentration in µCi/L	=	1.29E-02	
Rerun	Replicate Concentration in µCi/L	=	1.30E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.2945E-02	

Sample Prep
N/A

Rs (Sample Count Rate) = (TC / CT) - BKG
ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)
ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L
Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Sample #
WL4627

Instrument Code
WB27807

Prepared By
MCB

Chemist
SLF

Analyst
SCL

Date Complete
01/05/96

Analysis Date
01/03/96

Analysis Time
03:30 PM

Sample Point
BY-104 ROTARY

		DETECTION LEVEL
ALPHA TOTAL CONCENTRATION in µCi/mL	1.29E-05	1.49E-07 µCi/mL
RELATIVE COUNTING ERROR	4.5%	

Analyst:	MCB	Date: 05-Jan-96	
Signature of Chemist:	SLF	Date: 1/9/96	

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Qc Type	DETECTOR NUMBER		14	14
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	8	5
4627	COUNT TIME in MINUTES	(CT)	30	30
Qc or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.04	2.04
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330

Batch Number			
96000045	Blank Concentration in µCi/g	<	6.47E-02
Rerun	Replicate Concentration in µCi/g	<	6.47E-02
0	Maximum Concentration in µCi/g	<	6.4728E-02

Sample Prep
N/A

Sample #
WL4627

Instrument Code
WB27807

Prepared By
MCB

Chemist
SLF

Analyst
SCL

Date Complete
01/05/96

Analysis Date
01/03/96

Analysis Time
03:30 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	< 6.47E-02	DETECTION LEVEL
LESS Than Value was Determined from Lc.			1.47E-01 µCi/g
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB	Date: 05-Jan-96	
Signature of Chemist:	SLF	Date: 1/9/96	

BLANK.WB1 Rev. 1.0 508101ML

1326

WORKBOOK PAGE: SAM3

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	6	7
4627	COUNT TIME in MINUTES	(CT)	30	30
AT or TB	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.04	2.04
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330

Batch Number			
96000045	Blank Concentration in µCi/g	<	6.47E-02
Rerun	Replicate Concentration in µCi/g	<	6.47E-02
1	Maximum Concentration in µCi/g	<	6.4728E-02

Sample Prep: FUS-ZR01

Sample #: S95T003786

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 6.47E-02		1.47E-01 µCi/g
LESS Than Value was Determined from Lc.				
RELATIVE COUNTING ERROR			500.0%	

Analyst:	MCB		Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP4

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	10	13
4627	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0344	2.0344
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330

Batch Number			
96000045	Blank Concentration in µCi/g	<	6.49E-02
Rerun	Replicate Concentration in µCi/g	<	6.49E-02
1	Maximum Concentration in µCi/g	<	6.4906E-02

Sample Prep: FUS-ZR01

Sample # : S95T003786

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	< 6.49E-02	DETECTION LEVEL
LESS Than Value was Determined from Lc.			1.48E-01 µCi/g
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB		Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/6/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE5

AT : LA-508-101 (D-2) SPIKED SAMPLE

				SPIKE	REPLICATE
Type	DETECTOR NUMBER			14	14
SPK	DISH SIZE 1 , 2 , or 5		(MS)	2	2
Worklist	TOTAL COUNTS		(TC)	44155	45306
4627	COUNT TIME in MINUTES		(CT)	30	30
Analyst	BACKGROUND in cpm		(BKG)	0.6	0.6
AT	SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L		(Dg/L)	2.04	2.04
Matrix	SPIKE VOLUME in mL		(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR		(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER		(Spk BN)	119B43	119B43
96000045	SPIKE VALUE in µCi/mL		(SVal)	3.9213E-02	3.9213E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.2274	0.2274
1	SAMPLE + SPIKE µCi/g		(S+S)	2.89E+02	2.96E+02
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		<	6.4728E-02	
FUS-ZR01					
Sample #					
S95T003786	Rs (Sample Count Rate) = (TC / CT) - BKG				
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)				
WB27807	QC ACTUAL = SVal				
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))				
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100				
Chemist					
SLF					
Analyst					
SCL					
Date Complete	NOTE: Original Sample result was a LESS THAN value. Zero (0) was subtracted from the spiked value for QC found calculation.				
01/05/96					
Analysis Date					
01/03/96	QC ACTUAL		=	3.92E-02	
Analysis Time	QC FOUND		=	2.95E-02	
03:30 PM	AVG. PERCENT SPIKE RECOVERY		=	75.3%	
Sample Point					
BY-104 ROTARY					

Analyst:		MCB	Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SPIKE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM6

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	9	10
4627	COUNT TIME in MINUTES	(CT)	30	30
Alpha or Beta	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0932	2.0932
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330

Blank Concentration in µCi/g	<	1.26E-01
Replicate Concentration in µCi/g	<	1.26E-01
Maximum Concentration in µCi/g	<	1.2617E-01

Batch Number: 96000045
Rerun: 1
Sample Prep: FUS-ZR01
Sample #: S95T003787
Instrument Code: WB27807
Prepared By: MCB
Chemist: SLF
Analyst: SCL
Date Complete: 01/05/96
Analysis Date: 01/03/96
Analysis Time: 03:30 PM
Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG
ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 1.26E-01	2.87E-01 µCi/g
LESS Than Value was Determined from Lc.			
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB	Date: 05-Jan-96	
Signature of Chemist:	SLF	Date: 1/9/96	

SAMPLE.WB1 Rev. 1. 508101ML

1330

WORKBOOK PAGE: DUP7

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	15	20
4627	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1224	2.1224
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.406

Batch Number			
96000045	Blank Concentration in µCi/g	<	1.24E-01
Rerun	Replicate Concentration in µCi/g	<	1.53E-01
1	Maximum Concentration in µCi/g	<	1.5298E-01

Sample Prep: FUS-ZR01

Sample #: S95T003787

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 1.53E-01		2.83E-01 µCi/g
LESS Than Value was Determined from Lc.				
RELATIVE COUNTING ERROR			500.0%	

Analyst:	MCB		Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE8

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		14	14
SPK	DISH SIZE 1, 2, or 5	(MS)	2	2
Worksheet	TOTAL COUNTS	(TC)	46429	46374
4627	COUNT TIME in MINUTES	(CT)	30	30
Project	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.250	0.250
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0932	2.0932
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
96000045	SPIKE VALUE in µCi/mL	(SVal)	3.9213E-02	3.9213E-02
Renum #	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
1	SAMPLE + SPIKE µCi/g	(S+S)	5.91E+02	5.91E+02
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE	<	1.2617E-01	
FUS-ZR01				
Sample #				
S95T003787	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB27807	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SCL				
Date Complete	NOTE: Original Sample result was a LESS THAN value. Zero (0) was subtracted from the spiked value for QC found calculation.			
01/05/96				
Analysis Date				
01/03/96	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	3.06E-02	
03:30 PM	AVG. PERCENT SPIKE RECOVERY	=	78.1%	
Sample Point				
BY-104 ROTARY				

Analyst:		MCB	Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SPIKE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM9

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	42	34
4627	COUNT TIME in MINUTES	(CT)	30	30
A or B ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0668	2.0668
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.800	0.533

Blank Concentration in µCi/g	7.74E-01
Replicate Concentration in µCi/g	5.16E-01
Average Concentration in µCi/g	6.4534E-01

Batch Number: 96000045

Rerun: 1

Sample Prep: FUS-ZR01

Sample #: S95T003788

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	6.45E-01	7.27E-01 µCi/g
RELATIVE COUNTING ERROR		88.3%	

Analyst:		MCB	Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP10

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	33	23
4627	COUNT TIME in MINUTES	(CT)	30	30
Lot or TB #	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0348	2.0348
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.500	0.519

Batch Number			
96000045	Blank Concentration in µCi/g		4.92E-01
Rerun	Replicate Concentration in µCi/g	<	5.10E-01
1	Maximum Concentration in µCi/g	<	5.1014E-01

Sample Prep: FUS-ZR01

Sample #: S95T003788

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 5.10E-01		7.38E-01 µCi/g
LESS THAN Value was Determined from Rs.				
RELATIVE COUNTING ERROR			251.0%	

Analyst:	MCB	Date:	05-Jan-96
Signature of Chemist:	SLF	Date:	1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE11

AT : LA-508-101 (D-2) SPIKED SAMPLE

				SPIKE	REPLICATE
Type	DETECTOR NUMBER			14	14
SPK	DISH SIZE 1 , 2 , or 5		(MS)	2	2
Work List	TOTAL COUNTS		(TC)	43455	43732
4627	COUNT TIME in MINUTES		(CT)	30	30
AT or TB ?	BACKGROUND in cpm		(BKG)	0.6	0.6
AT	SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L		(Dg/L)	2.0668	2.0668
Matrix	SPIKE VOLUME in mL		(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR		(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER		(Spk BN)	119B43	119B43
96000045	SPIKE VALUE in µCi/mL		(SVal)	3.9213E-02	3.9213E-02
Rerun #	INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.2274	0.2274
1	SAMPLE + SPIKE µCi/g		(S+S)	1.40E+03	1.41E+03
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE			6.4534E-01	
FUS-ZR01					
Sample #					
S95T003788	Rs (Sample Count Rate) = (TC / CT) - BKG				
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)				
WB27807	QC ACTUAL = SVal				
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))				
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100				
Chemist					
SLF					
Analyst					
SCL					
Date Complete					
01/05/96					
Analysis Date					
01/03/96	QC ACTUAL		=	3.92E-02	
Analysis Time	QC FOUND		=	2.88E-02	
03:30 PM	AVG. PERCENT SPIKE RECOVERY		=	73.3%	
Sample Point					
BY-104 ROTARY					

Analyst:		MCB	Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SPIKE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM12

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	43	33
4627	COUNT TIME in MINUTES	(CT)	30	30
Apr-15-7	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0152	2.0152
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.833	0.500

Blank Concentration in µCi/g	8.19E-03
Replicate Concentration in µCi/g	4.91E-03
Average Concentration in µCi/g	6.5531E-03

Batch Number: 96000045
Rerun: 1
Sample Prep: FUS-ZR01
Sample #: S95T003789
Instrument Code: WB27807
Prepared By: MCB
Chemist: SLF
Analyst: SCL
Date Complete: 01/05/96
Analysis Date: 01/03/96
Analysis Time: 03:30 PM
Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	6.55E-03	7.38E-03 µCi/g
RELATIVE COUNTING ERROR		93.3%	

Analyst:	MCB		Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WHC-SD-WM-DP-164, REV. 1

WORKBOOK PAGE: DUP13

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Worklist	GROSS COUNTS	(GC)	42	41
4627	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0008	2.0008
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.800	0.767

Batch Number	
96000045	Blank Concentration in µCi/g 7.92E-03
Rerun	Replicate Concentration in µCi/g 7.59E-03
1	Average Concentration in µCi/g 7.7553E-03

Sample Prep: FUS-ZR01

Sample #: S95T003789

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	7.76E-03	7.43E-03 µCi/g
RELATIVE COUNTING ERROR		65.5%	

Analyst:	MCB		Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE14

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		14	14
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Workbook	TOTAL COUNTS	(TC)	20925	32389
4627	COUNT TIME in MINUTES	(CT)	30	30
Storage	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0152	2.0152
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
96000045	SPIKE VALUE in µCi/mL	(SVal)	3.9213E-02	3.9213E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
1	SAMPLE + SPIKE µCi/g	(S+S)	6.85E+00	1.06E+01
	AVERAGE or MAXIMUM µCi/g in SAMPLE		6.5531E-03	

Sample Prep: FUS-ZR01

Sample #: S95T003789

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

QC ACTUAL = SVal

QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))

PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100

QC ACTUAL	=	3.92E-02
QC FOUND	=	1.76E-02
AVG. PERCENT SPIKE RECOVERY	=	44.8%

Analyst:		MCB	Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SPIKE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM15

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	8	7
4627	COUNT TIME in MINUTES	(CT)	30	30
Sor HB ?	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1452	2.1452
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.330

Blank Concentration in µCi/g	<	6.16E-02
Replicate Concentration in µCi/g	<	6.16E-02
Maximum Concentration in µCi/g	<	6.1554E-02

Batch Number: 96000045

Rerun #: 1

Sample Prep: FUS-ZR01

Sample #: S95T003790

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/05/96

Analysis Date: 01/03/96

Analysis Time: 03:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 6.16E-02	1.40E-01 µCi/g
LESS Than Value was Determined from Lc.			
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB	Date: 05-Jan-96	
Signature of Chemist:	SLF	Date: 1/9/96	

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP16

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	13	20
4627	COUNT TIME in MINUTES	(CT)	30	30
Actor ID	BACKGROUND in cpm	(BKG)	0.6	0.6
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0912	2.0912
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.330	0.406

Batch Number			
96000045	Blank Concentration in µCi/g	<	6.31E-02
Rerun	Replicate Concentration in µCi/g	<	7.76E-02
1	Maximum Concentration in µCi/g	<	7.7630E-02

Sample Prep
FUS-ZR01

Sample #
S95T003790

Instrument Code
WB27807

Prepared By
MCB

Chemist
SLF

Analyst
SCL

Date Complete
01/05/96

Analysis Date
01/03/96

Analysis Time
03:30 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 7.76E-02		1.44E-01 µCi/g
LESS Than Value was Determined from Lc.				
RELATIVE COUNTING ERROR			500.0%	

Analyst:	MCB		Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE17

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SPIKED SAMPLE

				SPIKE	REPLICATE
Type	DETECTOR NUMBER			14	14
SPK	DISH SIZE 1 , 2 , or 5		(MS)	2	2
Work List	TOTAL COUNTS		(TC)	50350	46177
4627	COUNT TIME in MINUTES		(CT)	30	30
AT prep ?	BACKGROUND in cpm		(BKG)	0.6	0.6
AT	SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L		(Dg/L)	2.1452	2.1452
Matrix	SPIKE VOLUME in mL		(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR		(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER		(Spk BN)	119B43	119B43
96000045	SPIKE VALUE in µCi/mL		(SVal)	3.9213E-02	3.9213E-02
# Rerun	INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.2274	0.2274
1	SAMPLE + SPIKE µCi/g		(S+S)	3.13E+02	2.87E+02
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		<	6.1554E-02	
FUS-ZR01					
Sample #					
S95T003790					
Instrument Code					
WB27807					
Prepared By					
MCB					
Chemist					
SLF					
Analyst					
SCL					
Date Complete					
01/05/96					
Analysis Date					
01/03/96					
Analysis Time					
03:30 PM					
Sample Point					
BY-104 ROTARY					

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

QC ACTUAL = SVal

QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))

PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100

NOTE: Original Sample result was a LESS THAN value. Zero (0) was subtracted from the spiked value for QC found calculation.

QC ACTUAL	=	3.92E-02
QC FOUND	=	3.19E-02
AVG. PERCENT SPIKE RECOVERY	=	81.2%

Analyst:		MCB	Date: 05-Jan-96
Signature of Chemist:		SLF	Date: 1/6/96

SPIKE.WB1 Rev. 1.0 508101ML

1341

LABCORE Data Entry Template for Worklist# 4516

Analyst: S.C.L. **Instrument:** AB00 15 **Book#** 11856

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S95T003651	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
		Analytes Requested:			ALPHA01 , ALPHA01E			
5	DUP	S95T003651	0	Z	@ALPHA01	SOLID		
6	SPK	S95T003651	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4516

S.L.C. Lee 12-27-95
Analyst Signature Date

D.H. Molina 12-28-95
Analyst Signature Date

Sylvia Z Cochran 12/28/95

Data Entry Comments:

A spike: 119843

The Low SPK recovery is consistent with results from other samples in this Project. This indicates a sample matrix problem. No rerun requested. 1/2/96

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

LABCORE Completed Worklist Report for Worklist# 4516

Analyst: scl **Instrument:** AB15 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.92E-05	1.62E-5	84.380	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00	3.90E+00	3.900	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1	<6.41E-3		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00	4.39E+02	439.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01	ALPHA01	SOLID	1.00E+00	1.36E+00	1.360	uCi/g
4	SAMPLE	S95T003651	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	2.04E-02	9.080e-003	uCi/g
4	SAMPLE	S95T003651	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	4.35E+01	0.000	% Ct. Error
5	DUP	S95T003651	0	Z	@ALPHA01	ALPHA01	SOLID	2.04E-2	1.97E-2	3.490	RPD
5	DUP	S95T003651	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	4.01E+01	40.100	% Ct. Error
6	SPK	S95T003651	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	2.74E-02	69.900	% Recovery

Final page for worklist# 4516

Analyst Signature Date

Analyst Signature Date

12/27/95

Reviewer Signature Date

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

WORKBOOK PAGE: STD1

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
DETECTOR NUMBER			15	15
DISH SIZE (1 , 2 , or 5)	(MS)		2	2
GROSS COUNTS	(GC)		2614	2547
COUNT TIME in MINUTES	(CT)		30	30
BACKGROUND in cpm	(BKG)		0.27	0.27
SAMPLE SIZE in mL	(SS)		10.000	10.000
DILUTION FACTOR	(DF)		1	1
STANDARD BOOK NUMBER	(Std BN)		11B56	11B56
EFFICIENCY FACTOR	(EFF)		0.2380	0.2380
Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE			86.863	84.630
Standard Value in µCi/mL			1.92E-05	
Concentration in µCi/L		=	1.64E-02	
Replicate Concentration in µCi/L		=	1.60E-02	
AVERAGE CONCENTRATION in µCi/L		=	1.6229E-02	

Type	STD
Work List	4516
AT or TB ?	AT
Test Code	@ALPHA01
Matrix	LIQUID
Batch Number	95005077
Rerun	0
Sample Prep	N/A
Sample #	WL4516
Instrument Code	WB26872
Prepared By	DHM
Chemist	SLF
Analyst	SCL
Date Complete	12/28/95
Analysis Date	12/27/95
Analysis Time	01:30 PM
Sample Point	BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL CONCENTRATION in µCi/mL		1.62E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR	=	3.9%	1.01E-07 µCi/mL

Analyst:	DHM	Date: 28-Dec-95	
Signature of Chemist:	SLF	Date: 12/29/95	

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	12	10
4516	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2236	2.2236
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.377	0.297

Batch Number			
95005077	Blank Concentration in µCi/g	<	6.41E-03
Rerun	Replicate Concentration in µCi/g	<	5.06E-03
0	Maximum Concentration in µCi/g	<	6.4107E-03

Sample Prep: N/A

Sample #: WL4516

Instrument Code: WB26872

Prepared By: DHM

Chemist: SLF

Analyst: SCL

Date Complete: 12/28/95

Analysis Date: 12/27/95

Analysis Time: 01:30 PM

Sample Point: BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 6.41E-03	9.08E-03 µCi/g
LESS THAN Value was Determined from Rmax.			
RELATIVE COUNTING ERROR		438.9%	

Analyst:	DHM	Date: 28-Dec-95	
Signature of Chemist:	SLF	Date: 12/29/95	

BLANK.WB1 Rev. 1.0 508101ML

1345

WORKBOOK PAGE: SAM4

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	39	49
4516	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2236	2.2236
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.030	1.363

Batch Number	
95005077	Blank Concentration in µCi/g 1.75E-02
Rerun	Replicate Concentration in µCi/g 2.32E-02
0	Average Concentration in µCi/g 2.0371E-02
Sample Prep	
FUS-ZR01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
S95T003651	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB26872	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
DHM	
Chemist	v RESULTS v
SLF	ALPHA TOTAL in µCi/g 2.04E-02
Analyst	
SCL	
Date Complete	
12/28/95	RELATIVE COUNTING ERROR 43.5%
Analysis Date	
12/27/95	
Analysis Time	
01:30 PM	
Sample Point	
BY104 ROTARY	

DETECTION LEVEL
9.08E-03 µCi/g

Analyst:	DHM		Date: 28-Dec-95
Signature of Chemist:		SLF	Date: 12/29/95

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP5

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	43	43
4516	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2396	2.2396
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.163	1.163
Batch Number				
95005077	Blank Concentration in µCi/g		1.97E-02	
Rerun	Replicate Concentration in µCi/g		1.97E-02	
0	Average Concentration in µCi/g		1.9662E-02	

Sample Prep: FUS-ZR01

Sample #: S95T003651

Instrument Code: WB26872

Prepared By: DHM

Chemist: SLF

Analyst: SCL

Date Complete: 12/28/95

Analysis Date: 12/27/95

Analysis Time: 01:30 PM

Sample Point: BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	1.97E-02	9.02E-03 µCi/g
RELATIVE COUNTING ERROR		40.1%	

Analyst:		DHM	Date: 28-Dec-95
Signature of Chemist:		SLF	Date: 12/29/95

SAMPLE.WB1 Rev. 1.0 508101ML

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		15	15
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	43000	43963
4516	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.050	0.050
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2236	2.2236
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
95005077	SPIKE VALUE in µCi/mL	(SVal)	3.9214E-02	3.9214E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.238	0.238
0	SAMPLE + SPIKE µCi/g	(S+S)	2.44E+01	2.49E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		2.0371E-02	
FUS-ZR01				
Sample #				
S95T003651	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB26872	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
DHM	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
12/28/95				
Analysis Date				
12/27/95	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	2.74E-02	
01:30 PM	AVG. PERCENT SPIKE RECOVERY	=	69.9%	
Sample Point				
BY104 ROTARY				

Analyst:		DHM	Date: 28-Dec-95
Signature of Chemist:		SLF	Date: 12/21/95

SPIKE.WB1 Rev. 1.0 508101ML

LABCORE Data Entry Template for Worklist# 4518

Analyst: SMF **Instrument:** AB00 #14 **Book#** 11B56

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S95T003654	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
		Analytes Requested:			ALPHA01 , ALPHA01E			
5	DUP	S95T003654	0	Z	@ALPHA01	SOLID		
6	SAMPLE	S95T003655	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
		Analytes Requested:			ALPHA01 , ALPHA01E			
7	DUP	S95T003655	0	Z	@ALPHA01	SOLID		
8	SPK	S95T003655	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4518

S Multon 12-28-95/1330
Analyst Signature Date

M C Brown 12/29/95
Analyst Signature Date

C.J. Quinn 12/29/95

Data Entry Comments:

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

LABCORE Completed Worklist Report for Worklist# 4518

Analyst: smf **Instrument:** AB14 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

Seq	Type	Sample#	R	A	Test	Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01 ALPHA01	SOLID	1.92E-05	1.72E-5	89.580	% Recovery
1	STD		0		@ALPHA01 ALPHA01E	SOLID	1.00	3.88E+00	3.880	% Ct. Error
2	BLNK-PREP		0		@ALPHA01 ALPHA01	SOLID	1	1.05E-2	1.000e-002	uCi/g
2	BLNK-PREP		0		@ALPHA01 ALPHA01E	SOLID	1.00	1.13E+02	113.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01 ALPHA01	SOLID	1.00E+00	2.83E+00	2.830	uCi/g
4	SAMPLE	S95T003654	0	Z	@ALPHA01 ALPHA01	SOLID	N/A	3.30E-02	1.060e-002	uCi/g
4	SAMPLE	S95T003654	0	Z	@ALPHA01 ALPHA01E	SOLID	N/A	3.27E+01	0.000	% Ct. Error
5	DUP	S95T003654	0	Z	@ALPHA01 ALPHA01	SOLID	3.30E-2	3.49E-2	5.600	RPD
5	DUP	S95T003654	0	Z	@ALPHA01 ALPHA01E	SOLID	1.00	3.15E+01	31.500	% Ct. Error
6	SAMPLE	S95T003655	0	Z	@ALPHA01 ALPHA01	SOLID	N/A	2.79E-02	1.040e-002	uCi/g
6	SAMPLE	S95T003655	0	Z	@ALPHA01 ALPHA01E	SOLID	N/A	3.61E+01	0.000	% Ct. Error
7	DUP	S95T003655	0	Z	@ALPHA01 ALPHA01	SOLID	2.79E-2	2.59E-2	7.430	RPD
7	DUP	S95T003655	0	Z	@ALPHA01 ALPHA01E	SOLID	1.00	3.93E+01	39.300	% Ct. Error
8	SPK	S95T003655	0	Z	@ALPHA01 ALPHA01	SOLID	3.92E-02	3.18E-02	81.120	% Recovery

Final page for worklist# 4518

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

1/2/96

Reviewer Signature **Date**

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

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		14	14
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Order	GROSS COUNTS	(GC)	2573	2644
4518	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	11B56	11B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		85.467	87.833
Batch Number	Standard Value in µCi/mL		1.92E-05	
95005078	Concentration in µCi/L	=	1.69E-02	
Rerun	Replicate Concentration in µCi/L	=	1.74E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.7164E-02	

Sample Prep: N/A

Sample #: WL4518

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

		DETECTION LEVEL
ALPHA TOTAL CONCENTRATION in µCi/mL	1.72E-05	1.10E-07 µCi/mL
RELATIVE COUNTING ERROR	3.9%	

Analyst:		MCB	Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		14	14
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	33	18
4518	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.08	2.08
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.800	0.300

Batch Number	
95005078	Blank Concentration in µCi/g 1.52E-02
Rerun	Replicate Concentration in µCi/g 5.71E-03
0	Average Concentration in µCi/g 1.0476E-02

Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
WL4518	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB27807	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
MCB	
Chemist	
SLF	
Analyst	
SMF	
Date Complete	
12/29/95	
Analysis Date	
12/28/95	
Analysis Time	
01:30 PM	
Sample Point	
BY-104 ROTARY	

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	1.05E-02	1.06E-02 µCi/g
RELATIVE COUNTING ERROR		113.2%	

Analyst:	MCB		Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Order	GROSS COUNTS	(GC)	64	58
4518	COUNT TIME in MINUTES	(CT)	30	30
Lab Id #	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.08	2.08
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.833	1.633

Batch Number		
95005078	Blank Concentration in µCi/g	3.49E-02
Rerun #	Replicate Concentration in µCi/g	3.11E-02
0	Average Concentration in µCi/g	3.3015E-02

Sample Prep
FUS-ZR01

Sample #
S95T003654

Instrument Code
WB27807

Prepared By
MCB

Chemist
SLF

Analyst
SMF

Date Complete
12/29/95

Analysis Date
12/28/95

Analysis Time
01:30 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.30E-02	1.06E-02 µCi/g
RELATIVE COUNTING ERROR		32.7%	

Analyst:	MCB	Date: 29-Dec-95	
Signature of Chemist:	SLF	Date: 1/2/96	

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP5

WHC-SD-WM-DP-164, REV. I

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Worksheet	GROSS COUNTS	(GC)	61	64
4518	COUNT TIME in MINUTES	(CT)	30	30
Worksheet	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Digest Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0268	2.0268
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.733	1.833

Batch Number		
95005078	Blank Concentration in µCi/g	3.39E-02
Batch	Replicate Concentration in µCi/g	3.58E-02
0	Average Concentration in µCi/g	3.4858E-02

Sample Prep
FUS-ZR01

Sample #
S95T003654

Instrument Code
WB27807

Prepared By
MCB

Chemist
SLF

Analyst
SMF

Date Complete
12/29/95

Analysis Date
12/28/95

Analysis Time
01:30 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.49E-02	1.09E-02 µCi/g
RELATIVE COUNTING ERROR		31.5%	

Analyst:	MCB		Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SAM6

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		14	14
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	57	51
4518	COUNT TIME in MINUTES	(CT)	30	30
Analysis	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1316	2.1316
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.600	1.400

Batch Number		
95005078	Blank Concentration in µCi/g	2.97E-02
Rerun	Replicate Concentration in µCi/g	2.60E-02
0	Average Concentration in µCi/g	2.7879E-02

Sample Prep: FUS-ZR01

Sample #: S95T003655

Instrument Code: WB27807

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	2.79E-02	1.04E-02 µCi/g
RELATIVE COUNTING ERROR		36.1%	

Analyst:	MCB	Date:	29-Dec-95
Signature of Chemist:	SLF	Date	1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP7

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		14	14
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Unit	GROSS COUNTS	(GC)	54	46
4518	COUNT TIME in MINUTES	(CT)	30	30
Analytic	BACKGROUND in cpm	(BKG)	0.3	0.3
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0916	2.0916
Matrix	EFFICIENCY FACTOR	(EFF)	0.2274	0.2274
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.500	1.233

Batch Number		
95005078	Blank Concentration in µCi/g	2.84E-02
Replicate	Replicate Concentration in µCi/g	2.34E-02
0	Average Concentration in µCi/g	2.5886E-02

Sample Prep
FUS-ZR01

Sample #
S95T003655

Instrument Code
WB27807

Prepared By
MCB

Chemist
SLF

Analyst
SMF

Date Complete
12/29/95

Analysis Date
12/28/95

Analysis Time
01:30 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	2.59E-02	1.06E-02 µCi/g
RELATIVE COUNTING ERROR		39.3%	

Analyst:	MCB		Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE8

AT : LA-508-101 (D-2) SPIKED SAMPLE

				SPIKE	REPLICATE
Type	DETECTOR NUMBER			14	14
SPK	DISH SIZE 1 , 2 , or 5		(MS)	2	2
Work List	TOTAL COUNTS		(TC)	47352	49150
4518	COUNT TIME in MINUTES		(CT)	30	30
AT or TS ?	BACKGROUND in cpm		(BKG)	0.3	0.3
AT	SAMPLE VOLUME in mL	(Spiked Vial)	(SS)	0.050	0.050
Test Code	SAMPLE DILUTION FACTOR	(Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L		(Dg/L)	2.1316	2.1316
Matrix	SPIKE VOLUME in mL		(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR		(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER		(Spk BN)	119B43	119B43
95005078	SPIKE VALUE in µCi/mL		(SVal)	3.9214E-02	3.9214E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR		(EFF)	0.2274	0.2274
0	SAMPLE + SPIKE µCi/g		(S+S)	2.93E+01	3.04E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE			2.7879E-02	
FUS-ZR01					
Sample #					
S95T003655	Rs (Sample Count Rate) = (TC / CT) - BKG				
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)				
WB27807	QC ACTUAL = SVal				
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))				
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100				
Chemist					
SLF					
Analyst					
SMF					
Date Complete					
12/29/95					
Analysis Date					
12/28/95	QC ACTUAL		=	3.92E-02	
Analysis Time	QC FOUND		=	3.18E-02	
01:30 PM	AVG. PERCENT SPIKE RECOVERY		=	81.2%	
Sample Point					
BY-104 ROTARY					

Analyst:		MCB	Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

SPIKE.WB1 Rev. 1.0 508101ML

LABCORE Data Entry Template for Worklist# 4519

Analyst: SMF **Instrument:** AB00 #15 **Book#** 1B56

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S95T003658	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
		Analytes Requested: ALPHA01 , ALPHA01E						
5	DUP	S95T003658	0	Z	@ALPHA01	SOLID		
6	SAMPLE	S95T003659	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
		Analytes Requested: ALPHA01 , ALPHA01E						
7	DUP	S95T003659	0	Z	@ALPHA01	SOLID		
8	SPK	S95T003659	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4519

S. Fulton 12-28-95 1330
Analyst Signature **Date**

[illegible] 12/29/95
Analyst Signature **Date**

C.J. [illegible] 12/29/95

Data Entry Comments:

The low SPK recovery is consistent with other samples from this project. This indicates a sample matrix problem. No rerun requested. [illegible] 1/2/95

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

LABCORE Completed Worklist Report for Worklist# 4519

Analyst: smf **Instrument:** AB15 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.92E-05	1.65E-5	85.940	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00	3.87E+00	3.870	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1	<6.61E-3		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00	5.00E+02	500.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01	ALPHA01	SOLID	1.00E+00	1.23E+00	1.230	uCi/g
4	SAMPLE	S95T003658	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	2.28E-02	9.360e-003	uCi/g
4	SAMPLE	S95T003658	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	3.80E+01	0.000	% Ct. Error
5	DUP	S95T003658	0	Z	@ALPHA01	ALPHA01	SOLID	2.28E-2	2.06E-2	10.140	RPD
5	DUP	S95T003658	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	4.01E+01	40.100	% Ct. Error
6	SAMPLE	S95T003659	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	3.14E-02	1.010e-002	uCi/g
6	SAMPLE	S95T003659	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	3.62E+01	0.000	% Ct. Error
7	DUP	S95T003659	0	Z	@ALPHA01	ALPHA01	SOLID	3.14E-2	2.50E-2	22.700	RPD
7	DUP	S95T003659	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	3.80E+01	38.000	% Ct. Error
8	SPK	S95T003659	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	3.07E-02	78.320	% Recovery

Final page for worklist# 4519

Analyst Signature Date

Analyst Signature Date

Reviewer Signature 1/2/96 Date

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

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	2665	2589
4519	COUNT TIME in MINUTES	(CT)	30	30
Matrix	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	11B56	11B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		88.563	86.030
Batch Number	Standard Value in µCi/mL		1.92E-05	
95005079	Concentration in µCi/L	=	1.68E-02	
Rerun	Replicate Concentration in µCi/L	=	1.63E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.6522E-02	

Sample Prep: N/A

Sample #: WL4519

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

		DETECTION LEVEL
ALPHA TOTAL CONCENTRATION in µCi/mL	1.65E-05	1.01E-07 µCi/mL
RELATIVE COUNTING ERROR	3.9%	

Analyst:	MCB	Date: 29-Dec-95	
Signature of Chemist:	SLF	Date: 1/2/95	

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	12	8
4519	COUNT TIME in MINUTES	(CT)	30	30
Test ID	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1568	2.1568
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.377	0.221

Batch Number			
95005079	Blank Concentration in µCi/g	<	6.61E-03
Rerun	Replicate Concentration in µCi/g	<	3.89E-03
0	Maximum Concentration in µCi/g	<	6.6092E-03

Sample Prep: N/A

Sample #: WL4519

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 6.61E-03		9.36E-03 µCi/g
LESS THAN Value was Determined from Rmax.				
RELATIVE COUNTING ERROR			500.0%	

Analyst:		MCB	Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	46	48
4519	COUNT TIME in MINUTES	(CT)	30	30
A or B ?	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1568	2.1568
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.263	1.330

Batch Number	
95005079	Blank Concentration in µCi/g 2.22E-02
Rerun	Replicate Concentration in µCi/g 2.33E-02
0	Average Concentration in µCi/g 2.2757E-02

Sample Prep: FUS-ZR01

Sample #: S95T003658

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	2.28E-02	9.36E-03 µCi/g
RELATIVE COUNTING ERROR		38.0%	

Analyst:	MCB		Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP5

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Worksheet	GROSS COUNTS	(GC)	43	43
4519	COUNT TIME in MINUTES	(CT)	30	30
Counter #	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1392	2.1392
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.163	1.163

Batch Number		
95005079	Blank Concentration in µCi/g	2.06E-02
Rerun	Replicate Concentration in µCi/g	2.06E-02
0	Average Concentration in µCi/g	2.0585E-02

Sample Prep: FUS-ZR01

Sample # : S95T003658

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

				DETECTION LEVEL
ALPHA TOTAL	in µCi/g	2.06E-02		9.44E-03 µCi/g
RELATIVE COUNTING ERROR		40.1%		

Analyst:	MCB	Date: 29-Dec-95	
Signature of Chemist:	SLF	Date: 1/2/96	

SAMPLE.WB1 Rev. 1. 50810 ML

1363

WORKBOOK PAGE: SAM6

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	67	49
4519	COUNT TIME in MINUTES	(CT)	30	30
Alpha/Beta ?	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.006	2.006
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.963	1.363

Batch Number		
95005079	Blank Concentration in µCi/g	3.70E-02
Rerun	Replicate Concentration in µCi/g	2.57E-02
0	Average Concentration in µCi/g	3.1387E-02

Sample Prep
FUS-ZR01

Sample #
S95T003659

Instrument Code
WB26872

Prepared By
MCB

Chemist
SLF

Analyst
SMF

Date Complete
12/29/95

Analysis Date
12/28/95

Analysis Time
01:30 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.14E-02	1.01E-02 µCi/g
RELATIVE COUNTING ERROR		36.2%	

Analyst:	MCB		Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP7

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	52	46
4519	COUNT TIME in MINUTES	(CT)	30	30
Lab #	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0616	2.0616
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.463	1.263

Batch Number		
95005079	Blank Concentration in µCi/g	2.69E-02
Rerun	Replicate Concentration in µCi/g	2.32E-02
0	Average Concentration in µCi/g	2.5032E-02

Sample Prep: FUS-ZR01

Sample #: S95T003659

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SMF

Date Complete: 12/29/95

Analysis Date: 12/28/95

Analysis Time: 01:30 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	2.50E-02	9.79E-03 µCi/g
RELATIVE COUNTING ERROR		38.0%	

Analyst:	MCB		Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/95

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE8 WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		15	15
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work Order	TOTAL COUNTS	(TC)	48591	48794
4519	COUNT TIME in MINUTES	(CT)	30	30
Lot #	BACKGROUND in cpm	(BKG)	0.27	0.27
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.050	0.050
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.006	2.006
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
95005079	SPIKE VALUE in µCi/mL	(SVal)	3.9214E-02	3.9214E-02
Rerun #	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.238	0.238
0	SAMPLE + SPIKE µCi/g	(S+S)	3.06E+01	3.07E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		3.1387E-02	
FUS-ZR01				
Sample #				
S95T003659	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB26872	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SMF				
Date Complete				
12/29/95				
Analysis Date				
12/28/95	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	3.07E-02	
01:30 PM	AVG. PERCENT SPIKE RECOVERY	=	78.2%	
Sample Point				
BY-104 ROTARY				

Analyst:		MCB	Date: 29-Dec-95
Signature of Chemist:		SLF	Date: 1/2/96

SPIKE.WB1 Rev. 1.0 508101ML

1366

LABCORE Data Entry Template for Worklist# 4520

Analyst: S. C. L. **Instrument:** AB00 #15 **Book#** 11856

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S95T003662	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
5	DUP	S95T003662	0	Z	@ALPHA01	SOLID		
6	SAMPLE	S95T003663	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
7	DUP	S95T003663	0	Z	@ALPHA01	SOLID		
8	SPK	S95T003663	0	Z	@ALPHA01	SOLID		
9	SAMPLE	S95T003665	0	Z	@ALPHA01	SOLID	95000180	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
10	DUP	S95T003665	0	Z	@ALPHA01	SOLID		
11	SPK	S95T003665	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4520

Sue C Lai 12-28-95
Analyst Signature **Date**

[illegible] 1/2/95
Analyst Signature **Date**

Data Entry Comments:

A spike : 119B43

The RPD's for 3663 + 3665 are acceptable due to low alpha activity. The Low SPK recoveries are consistent with other samples from this project and indicate sample matrix problems. No rerun requested. [illegible] 1/2/96

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

LABCORE Completed Worklist Report for Worklist# 4520

Analyst: scl **Instrument:** AB15 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.92E-05	1.64E-5	85.420	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00	3.88E+00	3.880	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1	<4.93E-3		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00	5.00E+02	500.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01	ALPHA01	SOLID	1.00E+00	1.08E+00	1.080	uCi/g
4	SAMPLE	S95T003662	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	3.25E-02	1.010e-002	uCi/g
4	SAMPLE	S95T003662	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	3.33E+01	0.000	% Ct. Error
5	DUP	S95T003662	0	Z	@ALPHA01	ALPHA01	SOLID	3.25E-2	3.61E-2	10.500	RPD
5	DUP	S95T003662	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	3.03E+01	30.300	% Ct. Error
6	SAMPLE	S95T003663	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	3.05E-01	0.222	uCi/g
6	SAMPLE	S95T003663	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	5.66E+01	0.000	% Ct. Error
7	DUP	S95T003663	0	Z	@ALPHA01	ALPHA01	SOLID	3.05E-1	2.11E-1	36.430	RPD
7	DUP	S95T003663	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	7.38E+01	73.800	% Ct. Error
8	SPK	S95T003663	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	3.02E-02	77.040	% Recovery
9	SAMPLE	S95T003665	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	9.74E-02	0.119	uCi/g
9	SAMPLE	S95T003665	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	9.17E+01	0.000	% Ct. Error
10	DUP	S95T003665	0	Z	@ALPHA01	ALPHA01	SOLID	9.74E-2	1.28E-1	27.150	RPD
10	DUP	S95T003665	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	7.06E+01	70.600	% Ct. Error
11	SPK	S95T003665	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	3.12E-02	79.590	% Recovery

Final page for worklist# 4520

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

1/2/96

Reviewer Signature **Date**

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		15	15
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Est	GROSS COUNTS	(GC)	2585	2649
4520	COUNT TIME in MINUTES	(CT)	30	30
Vol or SS ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	11B56	11B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		85.767	87.900
Batch Number	Standard Value in µCi/mL		1.92E-05	
95005080	Concentration in µCi/L	=	1.62E-02	
Rerun	Replicate Concentration in µCi/L	=	1.66E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.6435E-02	

Sample Prep
N/A

Sample #
WL4520

Instrument Code
WB26872

Prepared By
MCB

Chemist
SLF

Analyst
SCL

Date Complete
01/02/96

Analysis Date
12/28/95

Analysis Time
02:00 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG
ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)
ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L
Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL CONCENTRATION in µCi/mL	1.64E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR	3.9%	1.19E-07 µCi/mL

Analyst:	MCB	Date:	02-Jan-96
Signature of Chemist:	SLF	Date:	1/2/96

STANDARD.WB1 Rev. 1.0 508101ML

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WORKBOOK PAGE: BLANK2

AT : LA-508-101 (D-2) SOLIDS

WHC-SD-WM-DP-164, REV. 1

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		15	15
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	13	13
4520	COUNT TIME in MINUTES	(CT)	30	30
or LB #	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.3672	2.3672
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.308	0.308

Batch Number			
95005080	Blank Concentration in µCi/g	<	4.93E-03
Rerun	Replicate Concentration in µCi/g	<	4.93E-03
0	Maximum Concentration in µCi/g	<	4.9304E-03

Sample Prep: N/A

Sample #: WL4520

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/02/96

Analysis Date: 12/28/95

Analysis Time: 02:00 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 4.93E-03	1.01E-02 µCi/g
LESS THAN Value was Determined from Rmax.			
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB	Date: 02-Jan-96	
Signature of Chemist:	SLF	Date: 1/2/96	

BLANK.WB1 Rev. 1.0 50810/ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Worklist	GROSS COUNTS	(GC)	83	63
4520	COUNT TIME in MINUTES	(CT)	30	30
Work B 2	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.3672	2.3672
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		2.367	1.700

Blank Concentration in µCi/g	3.78E-02
Replicate Concentration in µCi/g	2.72E-02
Average Concentration in µCi/g	3.2514E-02

Batch Number: 95005080
Rerun: 0
Sample Prep: FUS-ZR01
Sample #: S95T003662
Instrument Code: WB26872
Prepared By: MCB
Chemist: SLF
Analyst: SCL
Date Complete: 01/02/96
Analysis Date: 12/28/95
Analysis Time: 02:00 PM
Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

	v RESULTS v in µCi/g	DETECTION LEVEL
ALPHA TOTAL	3.25E-02	1.01E-02 µCi/g
RELATIVE COUNTING ERROR	33.3%	

Analyst:		MCB	Date: 02-Jan-96
Signature of Chemist:		SLF	Date: 1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP5

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	71	80
4520	COUNT TIME in MINUTES	(CT)	30	30
AT or LS	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.050	0.050
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2204	2.2204
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.967	2.267

Batch Number		
95005080	Blank Concentration in µCi/g	3.35E-02
Rerun	Replicate Concentration in µCi/g	3.86E-02
0	Average Concentration in µCi/g	3.6085E-02

Sample Prep
FUS-ZR01

Sample#
S95T003662

Instrument Code
WB26872

Prepared By
MCB

Chemist
SLF

Analyst
SCL

Date Complete
01/02/96

Analysis Date
12/28/95

Analysis Time
02:00 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.61E-02	1.07E-02 µCi/g
RELATIVE COUNTING ERROR		30.3%	

Analyst:	MCB	Date:	02-Jan-96
Signature of Chemist:	SLF	Date:	1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SAM6

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	36	40
4520	COUNT TIME in MINUTES	(CT)	30	30
Alpha / Beta	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1712	2.1712
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.800	0.933

Batch Number		
95005080	Blank Concentration in µCi/g	2.82E-01
Serial	Replicate Concentration in µCi/g	3.29E-01
0	Average Concentration in µCi/g	3.0521E-01

Sample Prep
FUS-ZR01

Sample #
S95T003663

Instrument Code
WB26872

Prepared By
MCB

Chemist
SLF

Analyst
SCL

Date Complete
01/02/96

Analysis Date
12/28/95

Analysis Time
02:00 PM

Sample Point
BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	3.05E-01	2.22E-01 µCi/g
RELATIVE COUNTING ERROR		56.6%	

Analyst:	MCB	Date: 02-Jan-96	
Signature of Chemist:	SLF	Date: 1/2/96	

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP7

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	32	29
4520	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2336	2.2336
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.667	0.567

Batch Number	
95005080	Blank Concentration in µCi/g 2.28E-01
Rerun	Replicate Concentration in µCi/g 1.94E-01
0	Average Concentration in µCi/g 2.1110E-01

Sample Prep: FUS-ZR01

Sample #: S95T003663

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/02/96

Analysis Date: 12/28/95

Analysis Time: 02:00 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	2.11E-01	2.16E-01 µCi/g
RELATIVE COUNTING ERROR		73.8%	

Analyst:	MCB	Date: 02-Jan-96	
Signature of Chemist:	SLF	Date: 1/2/96	

SAMPLE.WB1 Rev. 1. 50810\ML

WORKBOOK PAGE: SPIKE8

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		15	15
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work Unit	TOTAL COUNTS	(TC)	47776	48048
4520	COUNT TIME in MINUTES	(CT)	30	30
Test Type	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.250	0.250
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.1712	2.1712
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
95005080	SPIKE VALUE in µCi/mL	(SVal)	3.9214E-02	3.9214E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.238	0.238
0	SAMPLE + SPIKE µCi/g	(S+S)	5.61E+02	5.64E+02
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		3.0521E-01	
FUS-ZR01				
Sample #				
S95T003663	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB26872	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/02/96				
Analysis Date				
12/28/95	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	3.02E-02	
02:00 PM	AVG. PERCENT SPIKE RECOVERY	=	77.0%	
Sample Point				
BY-104 ROTARY				

Analyst:		MCB	Date: 02-Jan-96
Signature of Chemist:		SLF	Date: 1/2/96

SPIKE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM9

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		15	15
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	30	25
4520	COUNT TIME in MINUTES	(CT)	30	30
Blank	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.028	2.028
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.600	0.433

Batch Number		
95005080	Blank Concentration in µCi/g	1.13E-01
Rerun	Replicate Concentration in µCi/g	8.17E-02
0	Average Concentration in µCi/g	9.7401E-02

Sample Prep: FUS-ZR01

Sample #: S95T003665

Instrument Code: WB26872

Prepared By: MCB

Chemist: SLF

Analyst: SCL

Date Complete: 01/02/96

Analysis Date: 12/28/95

Analysis Time: 02:00 PM

Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	9.74E-02	1.19E-01 µCi/g
RELATIVE COUNTING ERROR		91.7%	

Analyst:		MCB	Date: 02-Jan-96
Signature of Chemist:		SLF	Date: 1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: DUP10

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		15	15
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Product	GROSS COUNTS	(GC)	39	30
4520	COUNT TIME in MINUTES	(CT)	30	30
Factor 1B	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE SIZE in mL	(SS)	0.500	0.500
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.2388	2.2388
Matrix	EFFICIENCY FACTOR	(EFF)	0.2380	0.2380
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.900	0.600

Blank Concentration in µCi/g	1.54E-01
Replicate Concentration in µCi/g	1.02E-01
Average Concentration in µCi/g	1.2808E-01

Batch Number: 95005080
Rerun: 0
Sample Prep: FUS-ZR01
Sample #: S95T003665
Instrument Code: WB26872
Prepared By: MCB
Chemist: SLF
Analyst: SCL
Date Complete: 01/02/96
Analysis Date: 12/28/95
Analysis Time: 02:00 PM
Sample Point: BY-104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	1.28E-01	1.08E-01 µCi/g
RELATIVE COUNTING ERROR		70.6%	

Analyst:	MCB	Date:	02-Jan-96
Signature of Chemist:	SLF	Date:	1/2/96

SAMPLE.WB1 Rev. 1. 508101ML

WORKBOOK PAGE: SPIKE11

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		15	15
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Worksheet	TOTAL COUNTS	(TC)	48381	50689
4520	COUNT TIME in MINUTES	(CT)	30	30
Worksheet	BACKGROUND in cpm	(BKG)	0.4	0.4
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.500	0.500
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.028	2.028
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Lot Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
95005080	SPIKE VALUE in µCi/mL	(SVal)	3.9214E-02	3.9214E-02
Aliquot	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.238	0.238
0	SAMPLE + SPIKE µCi/g	(S+S)	3.04E+02	3.18E+02
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		9.7401E-02	
FUS-ZR01				
Sample #				
S95T003665	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB26872	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
MCB	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/02/96				
Analysis Date				
12/28/95	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	3.12E-02	
02:00 PM	AVG. PERCENT SPIKE RECOVERY	=	79.6%	
Sample Point				
BY-104 ROTARY				

Analyst:		MCB	Date: 02-Jan-96
Signature of Chemist:		SLF	Date: 1/2/96

SPIKE.WB1 Rev. 1.0 508101ML

1378

LABCORE Data Entry Template for Worklist# 4647

Analyst: S.C.L **Instrument:** AB00 18 **Book #** 14856

Method: LA-508-101 Rev/Mod D-2

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

GROUP	PROJECT	S	TYPE	SAMPLE#	R	A	-------TEST------	MATRIX	ACTUAL	FOUND	DL	UNIT
		1	STD				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		1	STD				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		2	BLNK-PREP				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
		2	BLNK-PREP				@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
		3	BLNK/BKG				@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003700	0	F	@ALPHA01 ALPHA01	SOLID	N/A			uCi/g
95000180	BY104 ROTARY	4	SAMPLE	S95T003700	0	F	@ALPHA01 ALPHA01E	SOLID	N/A			% Ct. Error
95000180	BY104 ROTARY	5	DUP	S95T003700	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g
95000180	BY104 ROTARY	5	DUP	S95T003700	0	F	@ALPHA01 ALPHA01E	SOLID			N/A	% Ct. Error
95000180	BY104 ROTARY	6	SPK	S95T003700	0	F	@ALPHA01 ALPHA01	SOLID			N/A	uCi/g

Final page for worklist # 4647

Sue C Lai 1-5-96
Analyst Signature **Date**

M C Brown 1/8/96
Analyst Signature **Date**
SE Hogan 1/8/96

Data Entry Comments:

spike: 119843

Units shown for QC (SPK & STD) may not reflect the actual units. DL = Detection Limit, S = Worklist Slot Number, R = Replicate Number, A = Aliquot Code.

LABCORE Completed Worklist Report for Worklist# 4647

Analyst: scl **Instrument:** AB18 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Determine sample size using Ludlum. Use .100 mL A-SPK. SLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.54E-05	1.72E-5	111.690	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00	4.02E+00	4.020	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1	<2.71E-3		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00	5.00E+02	500.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01	ALPHA01	SOLID	1.00E+00	1.16E+00	1.160	uCi/g
4	SAMPLE	S95T003700	0	F	@ALPHA01	ALPHA01	SOLID	N/A	6.59E-03	4.680e-003	uCi/g
4	SAMPLE	S95T003700	0	F	@ALPHA01	ALPHA01E	SOLID	N/A	6.66E+01	0.000	% Ct. Error
5	DUP	S95T003700	0	F	@ALPHA01	ALPHA01	SOLID	6.59E-3	6.14E-3	7.070	RPD
5	DUP	S95T003700	0	F	@ALPHA01	ALPHA01E	SOLID	1.00	5.31E+01	53.100	% Ct. Error
6	SPK	S95T003700	0	F	@ALPHA01	ALPHA01	SOLID	3.92E-02	3.43E-02	87.500	% Recovery

Final page for worklist# 4647

Analyst Signature Date

Analyst Signature Date

1/9/96

Reviewer Signature Date

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

WORKBOOK PAGE: STD1

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
	DETECTOR NUMBER		18	18
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
	GROSS COUNTS	(GC)	2392	2410
4647	COUNT TIME in MINUTES	(CT)	30	30
	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	14B56	14B56
	EFFICIENCY FACTOR	(EFF)	0.2095	0.2095
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		79.503	80.103
	Standard Value in µCi/mL		1.54E-05	
96000089	Concentration in µCi/L	=	1.71E-02	
	Replicate Concentration in µCi/L	=	1.72E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.7159E-02	

Sample Prep

N/A

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF / (EFF * SS * 2220000dpm/µCi)

WL4647

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Instrument Code

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

WB27809

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Prepared By

MCB

Chemist

SLF

ALPHA TOTAL CONCENTRATION in µCi/mL	1.72E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR	4.0%	1.07E-07 µCi/mL

Analyst

SCL

Date Complete

01/08/96

Analysis Date

01/05/96

Analysis Time

08:15 AM

Sample Point

BY-104 ROTARY

Analyst:		MCB	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		18	18
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	9	7
4647	COUNT TIME in MINUTES	(CT)	30	30
Type 2	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.918	0.918
Matrix	EFFICIENCY FACTOR	(EFF)	0.2095	0.2095
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.289	0.208

Batch Number			
96000089	Blank Concentration in µCi/g	<	2.71E-03
Sterile	Replicate Concentration in µCi/g	<	1.95E-03
0	Maximum Concentration in µCi/g	<	2.7105E-03

Sample Prep	
N/A	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
WL4647	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
MCB	
Chemist	
SLF	
Analyst	
SCL	
Date Complete	
01/08/96	
Analysis Date	
01/05/96	
Analysis Time	
08:15 AM	
Sample Point	
BY-104 ROTARY	

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	< 2.71E-03	4.68E-03 µCi/g
LESS THAN Value was Determined from Rmax.			
RELATIVE COUNTING ERROR		500.0%	

Analyst:	MCB	Date: 08-Jan-96	
Signature of Chemist:	SLF	Date: 1/9/96	

BLANK.WB1 Rev. 1.0 508101ML

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WHC-SD-WM-DP-164, REV. 1

WORKBOOK PAGE: SAM4

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		18	18
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work Unit	GROSS COUNTS	(GC)	33	23
4647	COUNT TIME in MINUTES	(CT)	30	30
Prep Code	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
Project Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.918	0.918
Matrix	EFFICIENCY FACTOR	(EFF)	0.2095	0.2095
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.870	0.537

Batch Number		
96000089	Blank Concentration in µCi/g	8.15E-03
Aliquot	Replicate Concentration in µCi/g	5.03E-03
0	Average Concentration in µCi/g	6.5893E-03

Sample Prep
FUSION01

Rs (Sample Count Rate) = (TC / CT) - BKG

Sample #
S95T003700

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Instrument Code
WB27809

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

Numbered By
MCB

Chemist
SLF

v RESULTS v

ALPHA TOTAL	in µCi/g	6.59E-03	DETECTION LEVEL
RELATIVE COUNTING ERROR		66.6%	4.68E-03 µCi/g

Analyst
SCL

Date Complete
01/08/96

Analysis Date
01/05/96

Analysis Time
08:15 AM

Sample Point
BY-104 ROTARY

Analyst:	MCB	Date: 08-Jan-96	
Signature of Chemist:	SLF	Date: 1/9/96	

SAMPLE.WB1 Rev. 1. 508101ML

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WORKBOOK PAGE: DUP5

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
[illegible]	DETECTOR NUMBER		18	18
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
[illegible]	GROSS COUNTS	(GC)	32	29
4647	COUNT TIME in MINUTES	(CT)	30	30
[illegible]	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.250	0.250
[illegible]	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	1.1016	1.1016
[illegible]	EFFICIENCY FACTOR	(EFF)	0.2095	0.2095
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.837	0.737

[illegible]	
96000089	Blank Concentration in µCi/g 6.53E-03
[illegible]	Replicate Concentration in µCi/g 5.75E-03
0	Average Concentration in µCi/g 6.1417E-03
[illegible]	
FUSION01	Rs (Sample Count Rate) = (TC / CT) - BKG
[illegible]	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
S95T003700	
[illegible]	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB27809	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
[illegible]	
MCB	
[illegible]	
SLF	
[illegible]	
SCL	
[illegible]	
01/08/96	
[illegible]	
01/05/96	
[illegible]	
08:15 AM	
[illegible]	
BY-104 ROTARY	

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	6.14E-03	[illegible]
RELATIVE COUNTING ERROR		53.1%	3.90E-03 µCi/g

Analyst:	MCB		Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1. 508101ML

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AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		18	18
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Worklist	TOTAL COUNTS	(TC)	48325	47522
4647	COUNT TIME in MINUTES	(CT)	30	30
Protocol	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.250	0.250
Project Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	0.918	0.918
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
96000089	SPIKE VALUE in µCi/mL	(SVal)	3.9212E-02	3.9212E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2095	0.2095
0	SAMPLE + SPIKE µCi/g	(S+S)	1.51E+01	1.48E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		6.5893E-03	
FUSION01				
Sample #				
S95T003700				
Instrument Code				
WB27809				
Prepared By				
MCB				
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/08/96				
Analysis Date				
01/05/96				
Analysis Time				
08:15 AM				
Sample Point				
BY-104 ROTARY				

Rs (Sample Count Rate) = (TC / CT) - BKG

SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)

QC ACTUAL = SVal

QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))

PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100

QC ACTUAL	=	3.92E-02
QC FOUND	=	3.43E-02
AVG. PERCENT SPIKE RECOVERY	=	87.5%

Analyst:		MCB	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SPIKE.WB1 Rev. 1.0 508101ML

LABCORE Data Entry Template for Worklist# 4740

Analyst: S.C.L **Instrument:** AB00 13 **Book#** 14856

Method: LA-508-101 Rev/Mod 0-2

Worklist Comment: Sample sizes given on traveler. Rerun #2. --LLF

S	Type	Sample#	R	A	Test	Matrix	Group#	Project
1	STD				@ALPHA01	SOLID		
2	BLNK-PREP				@ALPHA01	SOLID		
3	BLNK/BKG				@ALPHA01	SOLID		
4	SAMPLE	S95T003788	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
5	DUP	S95T003788	0	Z	@ALPHA01	SOLID		
6	SPK	S95T003788	0	Z	@ALPHA01	SOLID		
7	SAMPLE	S95T003789	0	Z	@ALPHA01	SOLID	95000200	BY104 ROTARY
	Analytes Requested:				ALPHA01 , ALPHA01E			
8	DUP	S95T003789	0	Z	@ALPHA01	SOLID		
9	SPK	S95T003789	0	Z	@ALPHA01	SOLID		

Final page for worklist # 4740

Sue C Li 1-5-96
Analyst Signature Date

SE Hoya 1/8/96
Analyst Signature Date

M Sicu 1/9/96

Data Entry Comments:

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

LABCORE Completed Worklist Report for Worklist# 4740

Analyst: scl **Instrument:** AB13 **Book#** _____

Method: _____ Rev/Mod _____

Worklist Comment: Sample sizes given on traveler. Rerun #2. --LLF

Seq	Type	Sample#	R	A	Test		Matrix	Actual	Found	DL or Yield	Unit
1	STD		0		@ALPHA01	ALPHA01	SOLID	1.54E-05	1.31E-5	85.060	% Recovery
1	STD		0		@ALPHA01	ALPHA01E	SOLID	1.00	4.27E+00	4.270	% Ct. Error
2	BLNK-PREP		0		@ALPHA01	ALPHA01	SOLID	1	<3.64E-1		uCi/g
2	BLNK-PREP		0		@ALPHA01	ALPHA01E	SOLID	1.00	5.00E+02	500.000	% Ct. Error
3	BLNK/BKG		0		@ALPHA01	ALPHA01	SOLID	1.00E+00	1.16E+00	1.160	uCi/g
4	SAMPLE	S95T003788	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	7.14E-01	0.444	uCi/g
4	SAMPLE	S95T003788	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	5.01E+01	0.000	% Ct. Error
5	DUP	S95T003788	0	Z	@ALPHA01	ALPHA01	SOLID	7.14E-1	8.45E-1	16.810	RPD
5	DUP	S95T003788	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	5.01E+01	50.100	% Ct. Error
6	SPK	S95T003788	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	3.11E-02	79.340	% Recovery
7	SAMPLE	S95T003789	0	Z	@ALPHA01	ALPHA01	SOLID	N/A	1.57E-02	4.510e-003	uCi/g
7	SAMPLE	S95T003789	0	Z	@ALPHA01	ALPHA01E	SOLID	N/A	3.13E+01	0.000	% Ct. Error
8	DUP	S95T003789	0	Z	@ALPHA01	ALPHA01	SOLID	1.57E-2	1.35E-2	15.070	RPD
8	DUP	S95T003789	0	Z	@ALPHA01	ALPHA01E	SOLID	1.00	3.65E+01	36.500	% Ct. Error
9	SPK	S95T003789	0	Z	@ALPHA01	ALPHA01	SOLID	3.92E-02	2.57E-02	65.560	% Recovery

Final page for worklist# 4740

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

1/9/96

Reviewer Signature **Date**

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

WORKBOOK PAGE: STD1

AT : LA-508-101 (D-2) STANDARD

			STANDARD	REPLICATE
Type	DETECTOR NUMBER		13	13
STD	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	2226	2124
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	10.000	10.000
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	STANDARD BOOK NUMBER	(Std BN)	14B56	14B56
Matrix	EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
LIQUID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		73.970	70.570
Batch Number	Standard Value in µCi/mL		1.54E-05	
96000175	Concentration in µCi/L	=	1.35E-02	
Rerun	Replicate Concentration in µCi/L	=	1.28E-02	
0	AVERAGE CONCENTRATION in µCi/L	=	1.3143E-02	
Sample Prep				
N/A				
Sample #				
WL#4740				
Instrument Code				
WB27810				
Prepared By				
SEH				
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/08/96				
Analysis Date				
01/05/96				
Analysis Time				
01:00 PM				
Sample Point				
BY104 ROTARY				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/L = Rs * 1000mL/L * DF /. (EFF * SS * 2220000dpm/µCi)

ALPHA TOTAL µCi/mL = ALPHA TOTAL µCi/L / 1000mL/L

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

ALPHA TOTAL CONCENTRATION in µCi/mL		1.31E-05	DETECTION LEVEL
RELATIVE COUNTING ERROR	=	4.3%	9.08E-08 µCi/mL

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

STANDARD.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: BLANK2

AT : LA-508-101 (D-2) SOLIDS

			BLNK-PREP	REPLICATE
Type	DETECTOR NUMBER		13	13
BLNK-PREP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	12	4
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0668	2.0668
Matrix	EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		. 0.409	0.204
Batch Number				
96000175	Blank Concentration in µCi/g	<	3.64E-01	
Rerun	Replicate Concentration in µCi/g	<	1.82E-01	
0	Maximum Concentration in µCi/g	<	3.6356E-01	
Sample Prep				
N/A				
Sample #				
WL#4740				
Instrument Code				
WB27810				
Prepared By				
SEH				
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/08/96				
Analysis Date				
01/05/96				
Analysis Time				
01:00 PM				
Sample Point				
BY104 ROTARY				

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

ALPHA TOTAL	in µCi/g	< 3.64E-01	DETECTION LEVEL
LESS THAN Value was Determined from Rmax.			4.44E-01 µCi/g
RELATIVE COUNTING ERROR		500.0%	

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

BLANK.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM4

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		13	13
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	31	31
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0668	2.0668
Matrix	EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.803	0.803

Blank Concentration in µCi/g	7.14E-01
Replicate Concentration in µCi/g	7.14E-01
Average Concentration in µCi/g	7.1390E-01

Batch Number: 96000175
Rerun: 2
Sample Prep: FUS-ZR01
Sample # : S95T003788
Instrument Code: WB27810
Prepared By: SEH
Chemist: SLF
Analyst: SCL
Date Complete: 01/08/96
Analysis Date: 01/05/96
Analysis Time: 01:00 PM
Sample Point: BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	7.14E-01	4.44E-01 µCi/g
RELATIVE COUNTING ERROR		50.1%	

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP5

WHC-SD-WM-DP-164, REV. 1

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		13	13
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	31	39
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0348	2.0348
Matrix	EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		0.803	1.070
Batch Number				
96000175	Blank Concentration in µCi/g		7.25E-01	
Rerun	Replicate Concentration in µCi/g		9.66E-01	
2	Average Concentration in µCi/g		8.4548E-01	

Sample Prep: FUS-ZR01

Sample #: S95T003788

Instrument Code: WB27810

Prepared By: SEH

Chemist: SLF

Analyst: SCL

Date Complete: 01/08/96

Analysis Date: 01/05/96

Analysis Time: 01:00 PM

Sample Point: BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	8.45E-01	4.51E-01 µCi/g
RELATIVE COUNTING ERROR		50.1%	

Analyst:	SEH	Date:	08-Jan-96
Signature of Chemist:	SLF	Date:	1/9/96

SAMPLE.WB1 Rev. 1.0 50810\ML

WORKBOOK PAGE: SPIKE6

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		13	13
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work List	TOTAL COUNTS	(TC)	52831	49791
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	101	101
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0668	2.0668
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
96000175	SPIKE VALUE in µCi/mL	(SVal)	3.9212E-02	3.9212E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
2	SAMPLE + SPIKE µCi/g	(S+S)	1.56E+03	1.47E+03
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		7.1390E-01	
FUS-ZR01				
Sample #				
S95T003788	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB27810	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
SEH	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/08/96				
Analysis Date				
01/05/96	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	3.11E-02	
01:00 PM	AVG. PERCENT SPIKE RECOVERY	=	79.3%	
Sample Point				
BY104 ROTARY				

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SPIKE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: SAM7

AT : LA-508-101 (D-2) SOLIDS

			SAMPLE	REPLICATE
Type	DETECTOR NUMBER		13	13
SAMPLE	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	61	57
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0152	2.0152
Matrix	EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.803	1.670

Batch Number	
96000175	Blank Concentration in µCi/g 1.63E-02
Rerun	Replicate Concentration in µCi/g 1.51E-02
2	Average Concentration in µCi/g 1.5672E-02
Sample Prep	
FUS-ZR01	Rs (Sample Count Rate) = (TC / CT) - BKG
Sample #	ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)
S95T003789	
Instrument Code	Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100
WB27810	Detection Levels and Less Than Values are determined from Procedure LA-508-002.
Prepared By	
SEH	
Chemist	
SLF	
Analyst	
SCL	
Date Complete	
01/08/96	
Analysis Date	
01/05/96	
Analysis Time	
01:00 PM	
Sample Point	
BY104 ROTARY	

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	1.57E-02	4.51E-03 µCi/g
RELATIVE COUNTING ERROR		31.3%	

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

SAMPLE.WB1 Rev. 1.0 508101ML

WORKBOOK PAGE: DUP8

AT : LA-508-101 (D-2) SOLIDS

			DUP	REPLICATE
Type	DETECTOR NUMBER		13	13
DUP	DISH SIZE (1 , 2 , or 5)	(MS)	2	2
Work List	GROSS COUNTS	(GC)	46	57
4740	COUNT TIME in MINUTES	(CT)	30	30
AT or TB ?	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE SIZE in mL	(SS)	0.100	0.100
Test Code	DILUTION FACTOR	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0008	2.0008
Matrix	EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
SOLID	Lc, Rmax, or Rs,(SAMPLE RATE) as APPROPRIATE		1.303	1.670

Batch Number	
96000175	Blank Concentration in µCi/g 1.18E-02
Rerun	Replicate Concentration in µCi/g 1.52E-02
2	Average Concentration in µCi/g 1.3512E-02

Sample Prep: FUS-ZR01

Sample #: S95T003789

Instrument Code: WB27810

Prepared By: SEH

Chemist: SLF

Analyst: SCL

Date Complete: 01/08/96

Analysis Date: 01/05/96

Analysis Time: 01:00 PM

Sample Point: BY104 ROTARY

Rs (Sample Count Rate) = (TC / CT) - BKG

ALPHA TOTAL µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L * 2220000dpm/µCi)

Relative Counting Error = [|(The Square Root of TC + BKG * CT) / (TC - BKG * CT)|] * 1.96 * 100

Detection Levels and Less Than Values are determined from Procedure LA-508-002.

v RESULTS v

			DETECTION LEVEL
ALPHA TOTAL	in µCi/g	1.35E-02	4.54E-03 µCi/g
RELATIVE COUNTING ERROR		36.5%	

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

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WORKBOOK PAGE: SPIKE9

AT : LA-508-101 (D-2) SPIKED SAMPLE

			SPIKE	REPLICATE
Type	DETECTOR NUMBER		13	13
SPK	DISH SIZE 1 , 2 , or 5	(MS)	2	2
Work Unit	TOTAL COUNTS	(TC)	43313	41744
4740	COUNT TIME in MINUTES	(CT)	30	30
Counter	BACKGROUND in cpm	(BKG)	0.23	0.23
AT	SAMPLE VOLUME in mL (Spiked Vial)	(SS)	0.100	0.100
Test Code	SAMPLE DILUTION FACTOR (Spiked Vial)	(DF)	1	1
@ALPHA01	DIGEST GRAMS of SOLIDS / L	(Dg/L)	2.0152	2.0152
Matrix	SPIKE VOLUME in mL	(SVol)	0.100	0.100
SOLID	SPIKE DILUTION FACTOR	(SDF)	1	1
Batch Number	SPIKE BOOK NUMBER	(Spk BN)	119B43	119B43
96000175	SPIKE VALUE in µCi/mL	(SVal)	3.9212E-02	3.9212E-02
Rerun	INSTRUMENT EFFICIENCY FACTOR	(EFF)	0.2477	0.2477
2	SAMPLE + SPIKE µCi/g	(S+S)	1.30E+01	1.26E+01
Sample Prep	AVERAGE or MAXIMUM µCi/g in SAMPLE		1.5672E-02	
FUS-ZR01				
Sample #				
S95T003789	Rs (Sample Count Rate) = (TC / CT) - BKG			
Instrument Code	SAMPLE + SPIKE µCi/g = Rs * 1000mL/L * DF / (EFF * SS * Dg/L *2220000dpm/µCi)			
WB27810	QC ACTUAL = SVal			
Prepared By	QC FOUND = (((S+S µCi/g - SAMPLE µCi/g) * ((SDF/(SVol*1000))/(DF/SS/Dg/L))))			
SEH	PERCENT SPIKE RECOVERY = (QC FOUND / QC ACTUAL) *100			
Chemist				
SLF				
Analyst				
SCL				
Date Complete				
01/08/96				
Analysis Date				
01/05/96	QC ACTUAL	=	3.92E-02	
Analysis Time	QC FOUND	=	2.57E-02	
01:00 PM	AVG. PERCENT SPIKE RECOVERY	=	65.7%	
Sample Point				
BY104 ROTARY				

Analyst:		SEH	Date: 08-Jan-96
Signature of Chemist:		SLF	Date: 1/9/96

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