

File Copy
North Cavalade
CASE # 1292
TXD980873343

EPA LC
~~XXXXXX~~ #

00000105

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA 22313
703/557-2490 FTS:8-557-2490

DATE 9/ 8/86

COVER PAGE
INORGANIC ANALYSES DATA PACKAGE

LAB NAME: VERSAR, INC.
SOW 784

QC REPORT: 14
CASE NO. 6282
PROJECT NO.: 957.0000

SAMPLE NUMBERS

| EPA NO. | LAB ID NO. | EPA NO. | LAB ID NO. |
|---------|------------|---------|------------|
| MF C289 | 11054 | MF C290 | 11055 |
| MF C291 | 11056 | MF C292 | 11057 |
| MF C293 | 11058 | MF C294 | 11059 |

COMMENTS:

Zinc results were flagged with an "E" because of serial dilution

ICP INTERELEMENT AND BACKGROUND CORRECTION APPLIED? YES.
CORRECTIONS APPLIED BEFORE GENERATION OF RAW DATA.

FOOTNOTES:

NR - NOT REQUIRED BY CONTRACT AT THIS TIME
FORM I:

VALUE - IF THE RESULT IS A VALUE GREATER THAN OR EQUAL TO THE INSTRUMENT DETECTION LIMIT BUT LESS THAN THE CONTRACT REQUIRED DETECTION LIMIT, REPORT THE VALUE IN BRACKETS (I.E., [10]). INDICATE THE ANALYTICAL METHOD USED WITH P (FOR ICP/FLAME AA) OR F (FOR FURNACE).

- U - INDICATES ELEMENT WAS ANALYZED FOR BUT NOT DETECTED. REPORT WITH THE DETECTION LIMIT VALUE (E.G., 10U).
- E - INDICATES A VALUE ESTIMATED OR NOT REPORTED DUE TO THE PRESENCE OF INTERFERENCE. EXPLANATORY NOTE INCLUDED ON COVER PAGE.
- S - INDICATES VALUE DETERMINED BY METHOD OF STANDARD ADDITION
- R - INDICATES SPIKE SAMPLE RECOVERY IS NOT WITHIN CONTROL LIMITS.
- * - INDICATES DUPLICATE ANALYSIS IS NOT WITHIN CONTROL LIMITS.
- + - INDICATES THE CORRELATION COEFFICIENT FOR METHOD OF STANDARD ADDITION IS LESS THAN 0.995
- DF - DILUTION FACTOR
- SD - SAMPLE USED FOR ICP SERIAL DILUTION

6282-6-7

U.S. EPA CONTRACT LABORATORY PROGRAM
 SAMPLE MANAGEMENT OFFICE
 P.O. BOX 918 - ALEXANDRIA, VA. 22313
 703/557-2490 FTS: 8-557-2490

FORM I

.....
 : SAMPLE NO. :
 : HF C289 :
 :

DATE 9/ 8/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 6282

SOW NO. 784

LAB SAMPLE ID. NO. 11054, 11060

QC REPORT NO. 14

PROJECT-TASK 957.0000

BATCH 14

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH
 MATRIX: WATER X SOIL WIPE

UG/L

| | | | | | |
|--------------|---------|------|----------------|----------|----|
| 1. ALUMINUM | 8680. | P | 13. MAGNESIUM | 24300. | P |
| 2. ANTIMONY | 27. | UR P | 14. MANGANESE | 309. | P |
| 3. ARSENIC | 10.0 | F | 15. MERCURY | 0.20 | |
| 4. BARIUM | [110.] | P | 16. NICKEL | 13. U | P |
| 5. BERYLLIUM | [2.7] | P | 17. POTASSIUM | [1490.] | P |
| 6. CADMIUM | 5.0 U | P | 18. SELENIUM | 5.00 | FR |
| 7. CALCIUM | 106000. | P | 19. SILVER | 3.0 UR | P |
| 8. CHROMIUM | [6.7] | P | 20. SODIUM | 74800. | P |
| 9. COBALT | 5.0 U | P | 21. THALLIUM | 50.0 | FR |
| 10. COPPER | [8.1] | P | 22. TIN | 18. U | P |
| 11. IRON | 7360. | P | 23. VANADIUM | [19.] | P |
| 12. LEAD | 5.6 | F | 24. ZINC | 61. | PE |
| CYANIDE | 10.0 | | PERCENT SOLIDS | | |

FOOTNOTES: SEE COVER PAGE.

COMMENTS: DF of 5 for TI due to interference

LAB MANAGER

ROBERT E. MAXFIELD

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
 SAMPLE MANAGEMENT OFFICE
 P.O. BOX 818 - ALEXANDRIA, VA. 22313
 703/557-2490 FTS: 8-557-2490

.....
 : SAMPLE NO. :
 : MF C290 :
 :

DATE 9/ 8/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 6282

SOW NO. 784

LAB SAMPLE ID. NO. 11055, 11061

QC REPORT NO. 14

PROJECT-TASK 957.0000

BATCH 14

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH
 MATRIX: WATER X SOIL WIPE

UG/L

| | | | | | |
|--------------|--------|---|----------------|----------|----|
| 1. ALUMINUM | 17400. | P | 13. MAGNESIUM | 24500. | P |
| 2. ANTIMONY | 27. UR | P | 14. MANGANESE | 717. | P |
| 3. ARSENIC | 10. U | F | 15. MERCURY | 6.2U | |
| 4. BARIUM | 227. | P | 16. NICKEL | [16.] | P |
| 5. BERYLLIUM | [2.7] | P | 17. POTASSIUM | [3160.] | P |
| 6. CADMIUM | 5.0 U | P | 18. SELENIUM | 5.0U | FR |
| 7. CALCIUM | 96200. | P | 19. SILVER | 3.0 UR | P |
| 8. CHROMIUM | 12. | P | 20. SODIUM | 43100. | P |
| 9. COBALT | [17.] | P | 21. THALLIUM | 10. U | FR |
| 10. COPPER | [12.] | P | 22. TIN | 18. U | P |
| 11. IRON | 14500. | P | 23. VANADIUM | [38.] | P |
| 12. LEAD | 10. F | | 24. ZINC | 53. | PE |
| CYANIDE | 10. U | | PERCENT SOLIDS | | |

FOOTNOTES: SEE COVER PAGE.

COMMENTS:

LAB MANAGER

ROBERT E. MAXFIELD

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 618 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

.....
: SAMPLE NO. :
: KF C291 :
:.....

DATE 9/ 8/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 6282

SOW NO. 784

LAB SAMPLE ID. NO. 11056, 11062

QC REPORT NO. 14

PROJECT-TASK 957.0000

BATCH 14

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH
MATRIX: WATER X SOIL WIPE

UG/L

| | | | | | |
|--------------|---------|------|----------------|----------|-----|
| 1. ALUMINUM | 12300. | P | 13. MAGNESIUM | 28500. | P |
| 2. ANTIMONY | 27. | UR P | 14. MANGANESE | 473. | P |
| 3. ARSENIC | 10. U | F | 15. MERCURY | 0.2 U | |
| 4. BARIUM | [137.] | P | 16. NICKEL | [16.] | P |
| 5. BERYLLIUM | [2.7] | P | 17. POTASSIUM | [2700.] | P |
| 6. CADMIUM | 5.0 U | P | 18. SELENIUM | 5.0 U | FR |
| 7. CALCIUM | 111000. | P | 19. SILVER | [6.8] | R P |
| 8. CHROMIUM | [4.5] | P | 20. SODIUM | 75900. | P |
| 9. COBALT | [18.] | P | 21. THALLIUM | 50. U | FR |
| 10. COPPER | [11.] | P | 22. TIN | 18. U | P |
| 11. IRON | 10300. | P | 23. VANADIUM | [29.] | P |
| 12. LEAD | 75. | FS | 24. ZINC | 51. | PE |
| CYANIDE | 10. U | | PERCENT SOLIDS | | |

FOOTNOTES: SEE COVER PAGE.

COMMENTS: DF of 2 for Pb ; DF of 5 for Tl due to interference

LAB MANAGER

ROBERT E. MAXFIELD

FORM I

U.S. EPA CONTRACT LABORATORY PROGRAM
SAMPLE MANAGEMENT OFFICE
P.O. BOX 818 - ALEXANDRIA, VA. 22313
703/557-2490 FTS: 8-557-2490

.....
: SAMPLE NO. :
: MF C292 :
:.....

DATE 9/ 8/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 6282

SOW NO. 784

LAB SAMPLE ID. NO. 11057, 11063

QC REPORT NO. 14

PROJECT-TASK 957.0000

BATCH 14

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH
MATRIX: WATER X SOIL WIPE

UG/L

| | | | | | |
|--------------|---------|------|----------------|----------|-----|
| 1. ALUMINUM | 6760. | P | 13. MAGNESIUM | 23500. | P |
| 2. ANTIMONY | 27. | UR P | 14. MANGANESE | 257. | P |
| 3. ARSENIC | 10. U | F | 15. MERCURY | 0.2 U | |
| 4. BARIUM | [87.] | P | 16. NICKEL | [23.] | P |
| 5. BERYLLIUM | [2.3] | P | 17. POTASSIUM | [1360.] | P |
| 6. CADMIUM | 5.0 U | P | 18. SELENIUM | 5.0 U | FR |
| 7. CALCIUM | 105000. | P | 19. SILVER | [3.7] | R P |
| 8. CHROMIUM | 4.0 U | P | 20. SODIUM | 74400. | P |
| 9. COBALT | [13.] | P | 21. THALLIUM | 10. U | FR |
| 10. COPPER | [6.9] | P | 22. TIN | 18. U | P |
| 11. IRON | 5140. | P | 23. VANADIUM | [16.] | P |
| 12. LEAD | 5.0 U | F | 24. ZINC | 75. | PE |
| CYANIDE | 10. U | | PERCENT SOLIDS | | |

FOOTNOTES: SEE COVER PAGE.

COMMENTS:

LAB MANAGER

ROBERT E. MAXFIELD

U.S. EPA CONTRACT LABORATORY PROGRAM
 SAMPLE MANAGEMENT OFFICE
 P.O. BOX 818 - ALEXANDRIA, VA. 22313
 703/557-2490 FTS: 8-557-2490

FORM I

.....
 : SAMPLE NO. :
 : MF C293 :
 :

DATE 9/ 8/86

INORGANIC ANALYSIS DATA SHEET

LAB NAME VERSAR INC.

CASE NO. 6282

SOW NO. 784

LAB SAMPLE ID. NO. 11058, 11064

QC REPORT NO. 14

PROJECT-TASK 957.0000

BATCH 14

ELEMENTS IDENTIFIED AND MEASURED

CONCENTRATION: LOW X MEDIUM HIGH
 MATRIX: WATER X SOIL WIPE

UG/L

| | | | | | |
|--------------|---------|------|----------------|--------|----|
| 1. ALUMINUM | 37900. | P | 13. MAGNESIUM | 31300. | P |
| 2. ANTIMONY | 27. | UR P | 14. MANGANESE | 621. | P |
| 3. ARSENIC | 10. U | F | 15. MERCURY | 0.2 U | |
| 4. BARIUM | 579. | P | 16. NICKEL | 43. | P |
| 5. BERYLLIUM | 5.3 | P | 17. POTASSIUM | 8080. | P |
| 6. CADMIUM | 5.0 U | P | 18. SELENIUM | 50. U | FR |
| 7. CALCIUM | 120000. | P | 19. SILVER | 3.0 UR | P |
| 8. CHROMIUM | 33. | P | 20. SODIUM | 73100. | P |
| 9. COBALT | [19.] | P | 21. THALLIUM | 10. U | FR |
| 10. COPPER | 26. | P | 22. TIN | 18. U | P |
| 11. IRON | 39600. | P | 23. VANADIUM | 95. | P |
| 12. LEAD | 14. | F S | 24. ZINC | 98. | PE |
| CYANIDE | 10. U | | PERCENT SOLIDS | | |

FOOTNOTES: SEE COVER PAGE.

COMMENTS: D.F. of 10 for Se because of interference

LAB MANAGER

ROBERT E. MAXFIELD

FORM II A Q.C. REPORT: 14
 INITIAL AND CONTINUING CALIBRATION VERIFICATION(3)

LAB NAME: VERSAR, INC.
 DATE: 9/ 8/86

SOW NO. 784

CASE NO.: 6282
 UNITS: UG/L

| COMPOUND | INITIAL CALIB.(1) | | | CONTINUING CALIB.(2) | | | FOUND | %R |
|---------------|-------------------|--------|------|----------------------|--------|------|--------|--------|
| | TRUE | FOUND | %R | TRUE | FOUND | %R | | |
| 1. ALUMINUM | 852. | 882. | 104. | 852. | 869. | 102. | 892. | 103. F |
| 2. ANTIMONY | 208. | 184. | 91. | 200. | 207. | 102. | 216. | 106. F |
| 3. ARSENIC | 46. | 45. | 98. | 46. | 42. | 91. | 45. | 98. F |
| 4. BARIUM | 460. | 431. | 94. | 460. | 426. | 93. | 424. | 92. F |
| 5. BERYLLIUM | 235. | 232. | 99. | 235. | 229. | 97. | 230. | 98. F |
| 6. CADMIUM | 243. | 242. | 100. | 243. | 232. | 95. | 243. | 100. F |
| 7. CALCIUM | 40600. | 40400. | 100. | 40600. | 40200. | 99. | 40700. | 100. F |
| 8. CHROMIUM | 313. | 295. | 94. | 313. | 290. | 93. | 295. | 94. F |
| 9. COBALT | 261. | 258. | 99. | 261. | 245. | 94. | 259. | 99. F |
| 10. COPPER | 339. | 323. | 96. | 339. | 325. | 96. | 323. | 95. F |
| 11. IRON | 796. | 754. | 95. | 796. | 742. | 93. | 758. | 95. F |
| 12. LEAD | 53. | 57. | 108. | 53. | 56. | 100. | 54. | 102. F |
| 13. MAGNESIUM | 8400. | 7780. | 93. | 8400. | 7800. | 93. | 7930. | 94. F |
| 14. MANGANESE | 348. | 332. | 96. | 348. | 332. | 96. | 333. | 96. F |
| 15. MERCURY | 4.4 | 4.8 | 109. | 2.5 | 2.5 | 100. | | |
| 16. NICKEL | 207. | 188. | 91. | 207. | 191. | 92. | 185. | 90. F |
| 17. POTASSIUM | 9800. | 9890. | 101. | 9800. | 10300. | 105. | 10200. | 104. F |
| 18. SELENIUM | 50.2 | 45. | 90. | 20. | 20. | 100. | 20. | 100. F |
| 19. SILVER | 52. | 51. | 97. | 52. | 53. | 102. | 56. | 108. F |
| 20. SODIUM | 46500. | 44400. | 96. | 46500. | 44200. | 95. | 44500. | 96. F |
| 21. THALLIUM | 50. | 52. | 104. | 50. | 54. | 108. | 54. | 108. F |
| 22. TIN | 2000. | 1920. | 96. | 2000. | 2010. | 100. | 1990. | 99. F |
| 23. VANADIUM | 846. | 832. | 98. | 846. | 823. | 97. | 833. | 98. F |
| 24. ZINC | 418. | 408. | 98. | 418. | 414. | 99. | 416. | 100. F |
| 25. CYANIDE | 561 | 564 | 100. | 100. | 96. | 98. | 99. | 99. |

(1), (2) INITIAL, CONTINUING CALIBRATION SOURCE: EPA, VERSAR, ALFA, Fisher
 (3) CONTROL LIMITS: MERCURY AND TIN 80-120; ALL OTHER COMPOUNDS 90-110

FORM II
INITIAL AND CONTINUING CALIBRATION VERIFICATION(3)

LAB NAME: VERSAR, INC.

CASE NO.: 6282

DATE: 9/16/86

SOW NO. 784

UNITS: UG/L

| COMPOUND | INITIAL CALIB. (1) | | | CONTINUING CALIB. (2) | | | FOUND | %R | |
|---------------|--------------------|--------|------|-----------------------|--------|------|-------|------|---|
| | TRUE | FOUND | %R | TRUE | FOUND | %R | | | |
| 1. ALUMINUM | 852. | 876. | 103. | 852. | 885. | 104. | | P | |
| 2. ANTIMONY | 203. | 194. | 96. | 203. | 195. | 96. | | P | |
| 3. ARSENIC | | | | 46. | 45. | 98. | | F | |
| 4. BARIUM | 460. | 436. | 95. | 460. | 439. | 96. | | P | |
| 5. BERYLLIUM | 235. | 223. | 95. | 235. | 223. | 95. | | P | |
| 6. CADMIUM | 243. | 244. | 100. | 243. | 242. | 100. | | P | |
| 7. CALCIUM | 40600. | 39800. | 98. | 40600. | 39900. | 98. | | P | |
| 8. CHROMIUM | 313. | 293. | 94. | 313. | 298. | 95. | | P | |
| 9. COBALT | 261. | 255. | 98. | 261. | 250. | 96. | | P | |
| 10. COPPER | 339. | 333. | 98. | 339. | 334. | 99. | | P | |
| 11. IRON | 796. | 770. | 97. | 796. | 782. | 98. | | P | |
| 12. LEAD | | | | 53. | 54. | 102. | 54. | 102. | F |
| 13. MAGNESIUM | 8400. | 8070. | 96. | 8400. | 8160. | 97. | | P | |
| 14. MANGANESE | 348. | 333. | 96. | 348. | 335. | 96. | | P | |
| 15. MERCURY | | | | | | | | | |
| 16. NICKEL | 207. | 195. | 94. | 207. | 202. | 98. | | P | |
| 17. POTASSIUM | 9800. | 10000. | 102. | 9800. | 9840. | 100. | | P | |
| 18. SELENIUM | | | | 20. | 20. | 100. | | F | |
| 19. SILVER | 63. | 61. | 96. | 63. | 62. | 98. | | P | |
| 20. SODIUM | 46500. | 44600. | 96. | 46500. | 44700. | 96. | | P | |
| 21. THALLIUM | | | | 50. | 54. | 108. | | F | |
| 22. TIN | 2000. | 1960. | 98. | 2000. | 1960. | 98. | | P | |
| 23. VANADIUM | 846. | 841. | 99. | 846. | 844. | 100. | | P | |
| 24. ZINC | 418. | 409. | 98. | 418. | 411. | 98. | | P | |
| 25. CYANIDE | | | | 100. | 98. | 98. | 101. | 101. | |

(1), (2) INITIAL, CONTINUING CALIBRATION SOURCE: EPA, VERSAR

(3) CONTROL LIMITS: MERCURY AND TIN 80-120; ALL OTHER COMPOUNDS 90-110

Form II C

Q. C. Report No. 14

INITIAL AND CONTINUING CALIBRATION VERIFICATION³

LAB NAME Versar, Inc.

CASE NO. 6702

SOW NO. 784

DATE 9-8-86

UNITS ug/l

| Compound Metals ⁴ | Initial Calib. ¹ | | | Continuing Calibration ² | | | | | |
|---------------------------------|-----------------------------|-------|-----|-------------------------------------|-------|-----|-------|----|---------------------|
| | True Value | Found | IR | True Value | Found | IR | Found | IR | Method ⁴ |
| 1. Aluminum | | | | | | | | | |
| 2. Antimony | | | | | | | | | |
| 3. Arsenic | | | | | | | | | |
| 4. Barium | | | | | | | | | |
| 5. Beryllium | | | | | | | | | |
| 6. Cadmium | | | | | | | | | |
| 7. Calcium | | | | | | | | | |
| 8. Chromium | | | | | | | | | |
| 9. Cobalt | | | | | | | | | |
| 10. Copper | | | | | | | | | |
| 11. Iron | | | | | | | | | |
| 12. Lead | | | | | | | | | |
| 13. Magnesium | | | | | | | | | |
| 14. Manganese | | | | | | | | | |
| 15. Mercury | | | | | | | | | |
| 16. Nickel | | | | | | | | | |
| 17. Potassium | | | | | | | | | |
| 18. Selenium | | | | | | | | | |
| 19. Silver | | | | | | | | | |
| 20. Sodium | | | | | | | | | |
| 21. Thallium | 50 | 55 | 110 | 50 | 55 | 110 | | | F |
| 22. Tin | | | | | | | | | |
| 23. Vanadium | | | | | | | | | |
| 24. Zinc | | | | | | | | | |
| Other: | | | | | | | | | |
| Cyanide | | | | 100 | 101 | 101 | | | |

¹ Initial Calibration Source _____ ² Continuing Calibration Source EPA

³ Control Limits: Mercury and Tin 80-120; All Other Compounds 90-110

⁴ Indicate Analytical Method Used: P - ICP/Flame AA; F - Furnace

FORM III A
BLANKS

Q.C.REPORT: 14

LAB NAME: VERSAR, INC.
DATE 9/ 9/86

CASE NO.: 6282
UNITS: UG/L

| COMPOUND | INITIAL CALIB BLANK VALUE | MATRIX | | PREP 1. | BLANK 2. |
|---------------|---------------------------------|---------------------------|-------------------|------------|-------------|
| | | CONTINUING BLANK VALUE | HOH CALIB 2 | | |
| 1. ALUMINUM | 18.U | 18.U | [20.] | [25.] | |
| 2. ANTIMONY | 27.U | 27.U | 27.U | 27.U | |
| 3. ARSENIC | 3.0U | 3.0U | 3.0U | 3.0U | |
| 4. BARIUM | 1.0U | 1.0U | 1.0U | 1.0U | |
| 5. BERYLLIUM | 1.0U | 1.0U | 1.0U | 1.0U | |
| 6. CADMIUM | 5.0U | 5.0U | 5.0U | 5.0U | |
| 7. CALCIUM | 10.U | 10.U | 10.U | [87.] | |
| 8. CHROMIUM | 4.0U | 4.0U | 4.0U | 4.0U | |
| 9. COBALT | 5.0U | 5.0U | 5.0U | [10.] | |
| 10. COPPER | 4.0U | 4.0U | 4.0U | [5.3] | |
| 11. IRON | 5.0U | 5.0U | 5.0U | 5.0U | |
| 12. LEAD | 3.0U | 3.0U | 3.0U | 3.0U | |
| 13. MAGNESIUM | 1.0U | 1.0U | [1.8] | [6.3] | |
| 14. MANGANESE | 1.0U | 1.0U | 1.0U | 1.0U | |
| 15. MERCURY | 0.2U | 0.2U | | 0.2U | |
| 16. NICKEL | 13.U | 13.U | 13.U | 13.U | |
| 17. POTASSIUM | 300.U | [505.] | 300.U | 300.U | |
| 18. SELENIUM | 3.0U | 3.0U | 3.0U | 3.0U | |
| 19. SILVER | 3.0U | 3.0U | 3.0U | [7.0] | |
| 20. SODIUM | 19.U | 19.U | 19.U | [55.] | |
| 21. THALLIUM | 3.0U | 3.0U | 3.0U | 3.0U | |
| 22. TIN | 18.U | 18.U | 18.U | 18.U | |
| 23. VANADIUM | 3.0U | 3.0U | 3.0U | 3.0U | |
| 24. ZINC | 2.0U | 2.0U | 2.0U | [16.] | |
| 25. CYANIDE | 10.U | 10.U | 10.U | 10.U | |

FORM III B
BLANKS

Q. C. REPORT: 14

LAB NAME: VERSAR, INC.
DATE 9/16/86

CASE NO.: 6282
UNITS: UG/L

| COMPOUND | INITIAL CALIB BLANK VALUE | MATRIX HOH CONTINUING CALIB BLANK VALUE | | | PREP 1. | BLANK 2. |
|---------------|---------------------------------|-----------------------------------------------|------|------|------------|-------------|
| | | 1 | 2 | 3 | | |
| 1. ALUMINUM | 18.0 | 18.0 | | | | |
| 2. ANTIMONY | 27.0 | 27.0 | | | | |
| 3. ARSENIC | | 3.00 | | | | |
| 4. BARIUM | 1.00 | 1.00 | | | | |
| 5. BERYLLIUM | 1.00 | 1.00 | | | | |
| 6. CADMIUM | 5.00 | 5.00 | | | | |
| 7. CALCIUM | 10.0 | [14.] | | | | |
| 8. CHROMIUM | 4.00 | 4.00 | | | | |
| 9. COBALT | 5.00 | 5.00 | | | | |
| 10. COPPER | 4.00 | 4.00 | | | | |
| 11. IRON | 5.00 | 5.00 | | | | |
| 12. LEAD | | 3.00 | 3.00 | | | |
| 13. MAGNESIUM | [4.3] | [3.8] | | | | |
| 14. MANGANESE | 1.00 | 1.00 | | | | |
| 15. MERCURY | | | | | | |
| 16. NICKEL | 13.0 | 13.0 | | | | |
| 17. POTASSIUM | 300.0 | 300.0 | | | | |
| 18. SELENIUM | | 3.00 | | | | |
| 19. SILVER | 3.00 | 3.00 | | | | |
| 20. SODIUM | 19.0 | 19.0 | | | | |
| 21. THALLIUM | | 3.00 | | | | |
| 22. TIN | 18.0 | 18.0 | | | | |
| 23. VANADIUM | 3.00 | 3.00 | | | | |
| 24. ZINC | 2.00 | 2.00 | | | | |
| 25. CYANIDE | | 10.0 | 10.0 | 10.0 | | |

Form III C

Q. C. Report No. 14

BLANKS

LAB NAME Versar, Inc.

CASE NO. 6282

DATE 9-8-66

UNITS ug/l

Matrix HOH

| Preparation Compound | Initial Calibration Blank Value | Continuing Calibration | | | | Preparation Blank | |
|-------------------------|---------------------------------------|------------------------|---|---|---|-------------------|---|
| | | Blank Value | | | | 1 | 2 |
| | | 1 | 2 | 3 | 4 | 1 | 2 |
| Metals: | | | | | | | |
| 1. Aluminum | | | | | | | |
| 2. Antimony | | | | | | | |
| 3. Arsenic | | | | | | | |
| 4. Barium | | | | | | | |
| 5. Beryllium | | | | | | | |
| 6. Cadmium | | | | | | | |
| 7. Calcium | | | | | | | |
| 8. Chromium | | | | | | | |
| 9. Cobalt | | | | | | | |
| 10. Copper | | | | | | | |
| 11. Iron | | | | | | | |
| 12. Lead | | | | | | | |
| 13. Magnesium | | | | | | | |
| 14. Manganese | | | | | | | |
| 15. Mercury | | | | | | | |
| 16. Nickel | | | | | | | |
| 17. Potassium | | | | | | | |
| 18. Selenium | | | | | | | |
| 19. Silver | | | | | | | |
| 20. Sodium | | | | | | | |
| 21. Thallium | 3.00 | 3.00 | | | | | |
| 22. Tin | | | | | | | |
| 23. Vanadium | | | | | | | |
| 24. Zinc | | | | | | | |
| Other: | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Cyanide | | | | | | | |

FORM V

Q.C. REPORT: 14

SPIKE SAMPLE RECOVERY

LAB NAME: VERSAR, INC.

CASE NO.: 6282

DATE 9/ 8/86

EPA SAMPLE NO.: MF C291

LAB SAMPLE ID NO.: 11056

MATRIX: L NOH

UNITS: UG/L

| COMPOUND | CONTROL LIMIT %R | SPIKED SAMPLE RESULT (SSR) | SAMPLE RESULT (SR) | SPIKED ADDED (SA) | %R (1) |
|------------------|------------------------|-------------------------------------|--------------------------|-------------------------|-----------|
| 1. ALUMINUM | 75-125 | 17800. | 12300. | 2000. | 276. |
| 2. ANTIMONY | 75-125 | 3560. | 27.U | 5000. | 71. R |
| 3. ARSENIC (2) | 75-125 | 16. | 10.U | 20. | 80. |
| 4. BARIUM | 75-125 | 1890. | [137.] | 2000. | 95. |
| 5. BERYLLIUM | 75-125 | 59. | [2.7] | 50. | 119. |
| 6. CADMIUM | 75-125 | 45. | 5.0U | 50. | 89. |
| 7. CALCIUM | 75-125 | 203000. | 111000. | 100000. | 92. |
| 8. CHROMIUM | 75-125 | 182. | [4.5] | 200. | 91. |
| 9. COBALT | 75-125 | 431. | [18.] | 500. | 86. |
| 10. COPPER | 75-125 | 229. | [11.] | 250. | 92. |
| 11. IRON | 75-125 | 13500. | 10300. | 1000. | 329. |
| 12. LEAD (2) | 75-125 | 20. | 5.0U | 20. | 100. |
| 13. MAGNESIUM | 75-125 | 71200. | 28500. | 50000. | 85. |
| 14. MANGANESE | 75-125 | 648. | 473. | 200. | 87. |
| 15. MERCURY (3) | 75-125 | 1.2 | 0.2U | 1.0 | 120. |
| 16. NICKEL | 75-125 | 369. | [16.] | 400. | 92. |
| 17. POTASSIUM | 75-125 | 49000. | [2700.] | 50000. | 98. |
| 18. SELENIUM (2) | 75-125 | 5.1 | 5.0U | 10. | 51. R |
| 19. SILVER | 75-125 | 135. | [6.8] | 50. | 270. R |
| 20. SODIUM | 75-125 | 161000. | 75900. | 100000. | 85. |
| 21. THALLIUM (2) | 75-125 | 17. | 10.U | 50. | 34. R |
| 22. TIN | 75-125 | 430. | 18.U | 400. | 108. |
| 23. VANADIUM | 75-125 | 477. | [29.] | 500. | 96. |
| 24. ZINC | 75-125 | 255. | 51. | 200. | 102. |
| 25. CYANIDE (4) | 75-125 | 81. | 10.U | 100. | 81 |

(1) EPA # J06C 281

(1) KR - (SSR, SA) (SA) - 100

(2) EPA # MF C291

FORM VI
DUPLICATES

Q.C. REPORT: 14

LAB NAME: VERSAR, INC.

CASE NO.: 6282

DATE: 9/ 8/86

EPA SAMPLE NO.: MF C291

MATRIX: L HOH

LAB SAMPLE ID NO.: 11056

UNITS: UG/L

| COMPOUND | CONTROL LIMITS (1) | SAMPLE(S) | DUPLICATE(D) | RPD(2) |
|------------------|-----------------------|-----------|--------------|--------|
| 1. ALUMINUM | | 12300. | 14700. | 18. |
| 2. ANTIMONY | | 27.U | 27.U | NC |
| 3. ARSENIC (3) | | 10.U | 10.U | NC |
| 4. BARIUM | | [137.] | [147.] | NC |
| 5. BERYLLIUM | | [2.7] | [2.7] | NC |
| 6. CADMIUM | | 5.0U | 5.0U | NC |
| 7. CALCIUM | | 111000. | 115000. | 3.5 |
| 8. CHROMIUM | | [4.5] | [8.4] | NC |
| 9. COBALT | | [18.] | [11.] | NC |
| 10. COPPER | | [11.] | [10.] | NC |
| 11. IRON | | 10300. | 12000. | 15. |
| 12. LEAD (3) | | 5.0U | 5.0U | NC |
| 13. MAGNESIUM | | 28500. | 29700. | 4.3 |
| 14. MANGANESE | | 473. | 488. | 3.2 |
| 15. MERCURY (4) | | 0.2U | 0.2U | NC |
| 16. NICKEL | | [16.] | [17.] | NC |
| 17. POTASSIUM | | [2700.] | [3040.] | NC |
| 18. SELENIUM (3) | | 5.0U | 5.0U | NC |
| 19. SILVER | | [6.8] | 3.0U | NC |
| 20. SODIUM | | 75900. | 78600. | 3.4 |
| 21. THALLIUM (3) | | 10.U | 50.U | NC |
| 22. TIN | | 18.U | 18.U | NC |
| 23. VANADIUM | | [29.] | [33.] | NC |
| 24. ZINC | | 51. | 62. | 19. |
| 25. CYANIDE (4) | | 10.U | 10.U | NC |

(1) TO BE ADDED AT A LATER DATE

* - OUT OF CONTROL

(3) EPA# MF C 292

(2) RPD = (S-D) / ((S+D) / 2) * 100

(4) EPA# MF C 292

FORM IV A

Q.C. REPORT: 14

ICP INTERFERENCE CHECK SAMPLE

LAB NAME: VERSAR, INC.

CASE NO.: 6282

DATE: 9/ 8/86

CHECK SAMPLE I.D.: INTER

CHECK SAMPLE SOURCE: EPA

UNITS: UG/L

| COMPOUND | CONTROL LIMITS(1) | | TRUE (2) | INITIAL | | FINAL | |
|---------------|-------------------|-------------|-------------|----------|------|----------|------|
| | MEAN | 2X STD.DEV. | | OBSERVED | %R | OBSERVED | %R |
| 1. ALUMINIUM | 506000. | 6930. | 503000. | 485000. | 97. | 501000. | 100. |
| 2. ANTIMONY | 6. | 38. | .0 | .0 | .0 | .0 | .0 |
| 3. ARSENIC | 100. | 112. | NR | | | | |
| 4. BARIUM | 491. | 9. | 472. | 466. | 99. | 481. | 102. |
| 5. BERYLLIUM | 454. | 5. | 456. | 454. | 100. | 466. | 102. |
| 6. CADMIUM | 920. | 5. | 964. | 931. | 97. | 957. | 99. |
| 7. CALCIUM | 493000. | 4450. | 499000. | 503000. | 101. | 518000. | 104. |
| 8. CHROMIUM | 910. | 12. | 985. | 928. | 94. | 942. | 96. |
| 9. COBALT | 457. | 3. | 478. | 459. | 96. | 472. | 99. |
| 10. COPPER | 523. | 8. | 509. | 514. | 101. | 530. | 104. |
| 11. IRON | 198000. | 2580. | 198000. | 197000. | 99. | 199000. | 101. |
| 12. LEAD | 4480. | 38. | NR | | | | |
| 13. MAGNESIUM | 436000. | 442. | 497000. | 459000. | 92. | 474000. | 95. |
| 14. MANGANESE | 524. | 4. | 522. | 524. | 100. | 532. | 102. |
| 15. MERCURY | | | NR | | | | |
| 16. NICKEL | 856. | 17. | 913. | 842. | 92. | 882. | 97. |
| 17. POTASSIUM | 1000. | 357. | .0 | 248. | .0 | 281. | .0 |
| 18. SELENIUM | | | NR | | | | |
| 19. SILVER | 907. | 6. | 985. | 853. | 87. | 876. | 89. |
| 20. SODIUM | 489. | 20. | .0 | 605. | .0 | 639. | .0 |
| 21. THALLIUM | | | NR | | | | |
| 22. TIN | 38. | 16. | .0 | .0 | .0 | 2.1 | .0 |
| 23. VANADIUM | 439. | 6. | 471. | 527. | 112. | 533. | 114. |
| 24. ZINC | 932. | 9. | 948. | 902. | 95. | 926. | 98. |

(1) MEAN BASED ON N = 5

(2) TRUE VALUE OF INTERFERENCE CHECK SAMPLE

FORM IV B
 ICP INTERFERENCE CHECK SAMPLE
 LAB NAME: VERSAR, INC.
 DATE: 9/16/86

Q.C. REPORT: 14
 CASE NO.: 6282
 CHECK SAMPLE I.D.: INTER
 CHECK SAMPLE SOURCE: EPA
 UNITS: UG/L

| COMPOUND | CONTROL LIMITS (1) | | TRUE VALUE (2) | INITIAL | %R | FINAL | %R |
|---------------|--------------------|--------------|----------------------|----------|------|----------|------|
| | MEAN | 2X STD. DEV. | | OBSERVED | | OBSERVED | |
| 1. ALUMINUM | 506000. | 6930. | 503000. | 514000. | 102. | 516000. | 103. |
| 2. ANTIMONY | 6. | 38. | .0 | 133. | .0 | 156. | .0 |
| 3. ARSENIC | 100. | 112. | NR | | | | |
| 4. BARIUM | 491. | 9. | 472. | 485. | 103. | 484. | 103. |
| 5. BERYLLIUM | 454. | 5. | 456. | 465. | 102. | 463. | 101. |
| 6. CADMIUM | 920. | 5. | 964. | 930. | 97. | 936. | 97. |
| 7. CALCIUM | 493000. | 4450. | 499000. | 507000. | 102. | 507000. | 102. |
| 8. CHROMIUM | 910. | 12. | 985. | 927. | 94. | 923. | 94. |
| 9. COBALT | 457. | 3. | 478. | 467. | 98. | 470. | 98. |
| 10. COPPER | 523. | 8. | 509. | 533. | 105. | 531. | 104. |
| 11. IRON | 198000. | 2580. | 198000. | 203000. | 102. | 203000. | 103. |
| 12. LEAD | 4480. | 38. | NR | | | | |
| 13. MAGNESIUM | 436000. | 442. | 497000. | 489000. | 98. | 491000. | 99. |
| 14. MANGANESE | 524. | 4. | 522. | 518. | 99. | 517. | 99. |
| 15. MERCURY | | | NR | | | | |
| 16. NICKEL | 856. | 17. | 913. | 890. | 98. | 880. | 96. |
| 17. POTASSIUM | 1000. | 357. | .0 | .0 | .0 | .0 | .0 |
| 18. SELENIUM | | | NR | | | | |
| 19. SILVER | 907. | 6. | 985. | 922. | 94. | 923. | 94. |
| 20. SODIUM | 489. | 20. | .0 | 494. | .0 | 481. | .0 |
| 21. THALLIUM | | | NR | | | | |
| 22. TIN | 38. | 16. | .0 | 45. | .0 | 60. | .0 |
| 23. VANADIUM | 439. | 6. | 471. | 453. | 96. | 451. | 96. |
| 24. ZINC | 932. | 9. | 948. | 905. | 96. | 905. | 96. |

(1) MEAN BASED ON N = 5

(2) TRUE VALUE OF INTERFERENCE CHECK SAMPLE

FORM VII
LABORATORY CONTROL SAMPLE

Q.C. REPORT: 14

LAB NAME: VERSAR, INC.

CASE NO.: 6282

DATE: 9/ 8/86

LCS UNITS:UG/L

LAB SAMPLE ID NO.: LCS

UNITS:UG/L

| COMPOUND | CRDL | ICP IDL | Furnace IDL | TRUE | FOUND | %R |
|---------------|-------|------------|----------------|--------|----------|------|
| 1. ALUMINIUM | 200. | 18. | | 1580. | 1680. | 107. |
| 2. ANTIMONY | 60. | 27. | | 203. | 210. | 104. |
| 3. ARSENIC | 10. | | 3. | 53.4 | 53. | 99. |
| 4. BARIUM | 200. | 1. | | 781. | 804. | 103. |
| 5. BERYLLIUM | 5. | 1. | | 470. | 460. | 98. |
| 6. CADMIUM | 5. | 5. | | 87. | 83. | 96. |
| 7. CALCIUM | 5000. | 10. | | 10600. | 10800. | 102. |
| 8. CHROMIUM | 10. | 4. | | 618. | 587. | 95. |
| 9. COBALT | 50. | 5. | | 522. | 491. | 94. |
| 10. COPPER | 25. | 4. | | 678. | 649. | 96. |
| 11. IRON | 100. | 5. | | 1590. | 1520. | 95. |
| 12. LEAD | 5. | | 3 | 95.4 | 97. | 104. |
| 13. MAGNESIUM | 5000. | 1. | | 3600. | [3460.] | 96. |
| 14. MANGANESE | 15. | 1. | | 696. | 670. | 96. |
| 15. MERCURY | 0.2 | | 0.2 | 4.4 | 4.8 | 109. |
| 16. NICKEL | 40. | 13. | | 414. | 388. | 94. |
| 17. POTASSIUM | 5000. | 300. | | 4200. | 5060. | 120. |
| 18. SELENIUM | 5. | | 3. | 21.8 | 19. | 87. |
| 19. SILVER | 10. | 3. | | 52. | 53. | 103. |
| 20. SODIUM | 5000. | 19. | | 16400. | 16600. | 101. |
| 21. THALLIUM | 10. | | 3. | 50. | 49. | 98. |
| 22. TIN | 40. | 18. | | 2000. | 1800. | 90. |
| 23. VANADIUM | 50. | 3. | | 1690. | 1650. | 98. |
| 24. ZINC | 20. | 2. | | 836. | 916. | 110. |
| 25. CYANIDE | 10. | | NR | 511. | 532. | 95. |



U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office

Sample Number
MFG 294

INORGANICS TRAFFIC REPORT

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① Case Number: <u>6292</u> Sample Site Name/Code: _____ _____ _____ _____</p> | <p>② SAMPLE CONCENTRATION (Check One) <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> Medium Concentration ③ SAMPLE MATRIX (Check One) <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil/Sediment</p> | <p>④ Ship To: <u>Wrens, cove</u> <u>1.5 mi. near water</u> <u>Springfield VA 22151</u> Attn: <u>Paul Beckman</u> Transfer _____ Ship To: _____</p> |
| <p>⑤ Sampling Office: <u>VA</u> Sampling Personnel: <u>VRO/KY</u> (Name) <u>Paul Cotton</u> (Phone) <u>512/345-6651</u> Sampling Date: <u>8/14/86</u> (Begin) <u>8:30</u> (End) <u>4:30</u></p> | <p>⑥ Shipping Information: Name Of Carrier: <u>FEC</u> Date Shipped: <u>8/14/86</u> Airbill Number: <u>116 112 066</u></p> | <p>⑨ ANALYSIS LAB: Recd by: <u>C. Cotton</u> Date Recd: <u>8-5-86</u></p> |
| <p>⑦ Sample Description: (Check One) <input checked="" type="checkbox"/> Surface Water <input type="checkbox"/> Ground Water <input type="checkbox"/> Leachate <input type="checkbox"/> Mixed Media <input type="checkbox"/> Solids <input type="checkbox"/> Other (specify) _____</p> | <p>⑧ Mark Volume Level On Sample Bottle Check Analysis required <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Cyanide</p> | <p>⑩ Sample Condition On Receipt: (eg broken, leakage, chain of custody, etc.) <u>OK</u> _____ _____ _____</p> |

MATCHES ORGANIC SAMPLE NO. FD132

COMPEN. DIV. 110.1

TABLE COPY

Sample Number
MFC 291

INORGANICS TRAFFIC REPORT

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| <p>① Case Number: <u>6297</u> Sample Site Name/Code: _____ _____ _____</p> | <p>② SAMPLE CONCENTRATION (Check One) <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> Medium Concentration</p> <p>③ SAMPLE MATRIX (Check One) <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil/Sediment</p> | <p>④ Ship To: <u>Verona, NJ</u> <u>6850 Veron Center</u> <u>Springfield, VA 22151</u> Attn: <u>Janet Beckman</u> Transfer _____ Ship To: _____</p> |
| <p>⑤ Sampling Offices: <u>IL</u> Sampling Personnel: <u>FVBO-YLC</u> (Name) <u>Tommy Patton</u> (Phone) <u>512-345-6651</u> Sampling Date: <u>8/4/86</u> (Begin) <u>1215</u> (End) <u>1210</u></p> | <p>⑥ Shipping Information: Name Of Carrier: <u>FEC</u> Date Shipped: <u>8/4/86</u> Airbill Number: <u>110 012 066</u></p> | <p>⑦ ANALYSIS LAB: Recd by: <u>C. Cotton</u> Date Recd: <u>8-5-86</u></p> |
| <p>⑧ Sample Description: (Check One) <input checked="" type="checkbox"/> Surface Water <input type="checkbox"/> Ground Water <input type="checkbox"/> Leachate <input type="checkbox"/> Mixed Media <input type="checkbox"/> Solids <input type="checkbox"/> Other (specify) _____</p> | <p>⑨ Mark Volume Level On Sample Bottle Check Analysis required <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Cyanide</p> | <p>⑩ Sample Condition On Receipt: (eg. broken, leakage, chain of custody, etc.) <u>Ok</u> ↓</p> |

MATCHES ORGANIC SAMPLE NO. ED127

GENERAL INFORMATION

TRAFFIC COPY



U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office

Sample Number
MFC 290

INORGANICS TRAFFIC REPORT

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| <p>① Case Number: <u>6292</u> Sample Site Name/Code: _____ Management Office: _____</p> | <p>② SAMPLE CONCENTRATION (Check One) <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> Medium Concentration</p> <p>③ SAMPLE MATRIX (Check One) <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil/Sediment</p> | <p>④ Ship To: <u>Versar, Inc</u> <u>850 Versar Center</u> <u>Springfield VA 22151</u> Attn: <u>Steve Seckman</u></p> <p>Transfer Ship To: _____</p> |
| <p>⑤ Sampling Office: <u>VA</u> Sampling Personnel: <u>VBOU</u> (Name) <u>Steve Seckman</u> (Phone) <u>(512) 345-6651</u> Sampling Date: <u>8/4/86</u> (Begin) <u>1130</u> (End) <u>1130</u></p> | <p>⑥ Shipping Information: Name Of Carrier: <u>FEC</u> Date Shipped: <u>8/4/86</u> Airbill Number: <u>110012066</u></p> | <p>⑨ ANALYSIS LAB: Recd by: <u>C. Cotton</u> Date Recd: <u>8-5-86</u></p> |
| <p>⑦ Sample Description: (Check One) <input type="checkbox"/> Surface Water <input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Leachate <input type="checkbox"/> Mixed Media <input type="checkbox"/> Solids <input type="checkbox"/> Other <u>LOWES</u> (specify)</p> <p>MATCHES ORGANIC SAMPLE NO. <u>ED26</u></p> | <p>⑧ Mark Volume Level On Sample Bottle Check Analysis required <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Cyanide</p> | <p>⑩ Sample Condition On Receipt: (eg. broken, leakage, chain of custody, etc.) <u>OK</u></p> |

LAB FILE COPY



U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office

Sample Number
MFC 289

INORGANICS TRAFFIC REPORT

| | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① Case Number: <u>1282</u> Sample Site Name/Code: _____ _____ _____ _____ _____</p> | <p>② SAMPLE CONCENTRATION (Check One) <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> Medium Concentration _____ ③ SAMPLE MATRIX (Check One) <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil/Sediment</p> | <p>④ Ship To: <u>William Lane</u> <u>6850 Veterans Inter</u> <u>Springfield VA 22151</u> Attn: <u>James Beckman</u> _____ Transfer Ship To: _____</p> |
| <p>⑤ Sampling Office: <u>VI</u> Sampling Personnel: _____ (Name) <u>Joan Cotton</u> (Phone) <u>5123345-6651</u> Sampling Date: <u>8/4/86</u> (Begin) <u>1315</u> (End) <u>1315</u></p> | <p>⑥ Shipping Information: Name Of Carrier: <u>FFC</u> Date Shipped: <u>5/4/86</u> Airbill Number: <u>10012066</u></p> | <p>⑧ ANALYSIS LAB: Recd by: <u>C. Cotton</u> Date Recd: <u>8-5-86</u></p> |
| <p>⑦ Sample Description: (Check One) <input checked="" type="checkbox"/> Surface Water <input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Leachate <input type="checkbox"/> Mixed Media <input type="checkbox"/> Solids <input type="checkbox"/> Other _____ (specify) _____ MATCHES ORGANIC SAMPLE NO. <u>ED25</u></p> | <p>⑨ Mark Volume Level On Sample Bottle Check Analysis required <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Cyanide</p> | <p>⑩ Sample Condition On Receipt: (eg. broken, leakage, chain of custody, etc.) <u>OK</u> _____ _____ _____</p> |

LAB FILE COPY 6282-6-1



U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office

Sample Number
MFC 293

INORGANICS TRAFFIC REPORT

| | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① Case Number: <u>6282</u> Sample Site Name/Code: _____ Management Office: _____</p> | <p>② SAMPLE CONCENTRATION (Check One) <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> Medium Concentration</p> <p>③ SAMPLE MATRIX (Check One) <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil/Sediment</p> | <p>④ Ship To: <u>Versar, Inc</u> <u>6850 Versar Center</u> <u>Springfield, VA 22151</u> Attn: <u>Frank Beckman</u></p> <p>Transfer Ship To: _____</p> |
| <p>⑤ Sampling Office: <u>VI</u> Sampling Personnel: _____ (Name) <u>Tom Tolan</u> (Phone) <u>(512) 345-6651</u> Sampling Date: <u>8/4/86</u> (Begin) <u>1605</u> (End) <u>1605</u></p> | <p>⑥ Shipping Information: Name Of Carrier: <u>FEC</u> Date Shipped: <u>8/4/86</u> Airbill Number: <u>116 012 006</u></p> | <p>⑦ ANALYSIS LAB: Recd by: <u>C. G. H.</u> Date Recd: <u>8-5-86</u></p> |
| <p>⑧ Sample Description: (Check One) <input checked="" type="checkbox"/> Surface Water <input checked="" type="checkbox"/> Ground Water <input type="checkbox"/> Leachate <input type="checkbox"/> Mixed Media <input type="checkbox"/> Solids <input type="checkbox"/> Other (specify) _____</p> | <p>⑨ Mark Volume Level On Sample Bottle Check Analysis required <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Cyanide</p> | <p>⑩ Sample Condition On Receipt: (eg. broken, leakage, chain of custody, etc.) <u>OK</u></p> |

MATCHES ORGANIC SAMPLE NO. FD02X

LAB FILE COPY



U.S. ENVIRONMENTAL PROTECTION AGENCY HWI Sample Management Office

Sample Number
MFC 292

INORGANICS TRAFFIC REPORT

| | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>① Case Number: <u>6262</u> Sample Site Name/Code: _____ _____ _____ _____</p> | <p>② SAMPLE CONCENTRATION (Check One) <input checked="" type="checkbox"/> Low Concentration <input type="checkbox"/> Medium Concentration ③ SAMPLE MATRIX (Check One) <input checked="" type="checkbox"/> Water <input type="checkbox"/> Soil/Sediment</p> | <p>④ Ship To: <u>650 West Main Street</u> <u>Springfield, VA 22151</u> Attn: <u>Lucret Beckman</u> Transfer _____ Ship To: _____</p> |
| <p>⑤ Sampling Office: <u>VI</u> Sampling Personnel: <u>VI</u> (Name) <u>Lucy Johnson</u> (Phone) <u>(512) 345-6651</u> Sampling Date: <u>8/4/86</u> (Begin) <u>1310</u> (End) <u>1310</u></p> | <p>⑥ Shipping Information: Name Of Carrier: <u>FEC</u> Date Shipped: <u>8/4/86</u> Airbill Number: <u>116 012 066</u></p> | <p>⑧ ANALYSIS LAB: Recd by: <u>C. Cotton</u> Date Recd: <u>8-5-86</u></p> |
| <p>⑦ Sample Description: (Check One) <input checked="" type="checkbox"/> Surface Water <input type="checkbox"/> Ground Water <input type="checkbox"/> Leachate <input type="checkbox"/> Mixed Media <input type="checkbox"/> Solids <input type="checkbox"/> Other (specify) _____</p> | <p>⑧ Mark Volume Level On Sample Bottle Check Analysis required <input checked="" type="checkbox"/> Total Metals <input checked="" type="checkbox"/> Cyanide</p> | <p>⑩ Sample Condition On Receipt: (eg broken, leakage, chain of custody, etc.) <u>OK</u></p> |

MATCHES ORGANIC SAMPLE NO. FD129

TABLE F/00V

CP Calibration 9-16-86

SAT PF
ENTER VALUE(S)>13
ENTER VALUE(S)
SAT IS
1
SAT SC
ENTER COMMAND STRING>EANDRTYNS
SAT PC

BURN # 1 C 15-SEP-86 00:30:32

LV
4037.3
AG AL AS B BA BE CA CD CE CR
-.0005 .00419 .00458 .00074 .00000 .00035 .00041 -.0001 .00000 .00089
CU FE AU FF K LI MG MN MO NA
.00014 .00136 .00050 -.0000 .73431 .00793 .00031 -.0000 .00017 .00941
NI PB SB SE SI SN SR TI TL U
-.0003 -.0001 -.0007 -.0027 .00111 .00378 .00006 -.0005 .00128 .00019
Y ZN
.00012 .00042
ENTER STANDARD NAME>1
SAT PC

BURN # 1 C 16-SEP-86 00:32:33

LV
4032.3
AG AL AS B BA BE CA CH CO CR
.32510 .00420 .00399 .00107 .00019 .00052 .06479 .13908 .05353 .00039
CU FE AU FF K LI MG MN MO NA
.08150 .00045 -.0010 .00099 .71861 .00794 .31070 .21782 .00031 .00967
NI PB SB SE SI SN SR TI TL U
-.0012 .02191 -.0000 .00023 .00095 .00663 -.0001 .00058 .00176 -.0001
Y ZN
.00004 .16872
ENTER STANDARD NAME>2
SAT PC

BURN # 1 C 16-SEP-86 00:34:30

LV
4037.7
AG AL AS B BA BE CA CD CE CR
-.0007 .09058 .00483 .00037 .24573 .24375 .00140 .00045 .00017 .00070
CU FE AU FF K LI MG MN MO NA
.00008 .14557 -.0002 .00821 .71824 .17163 .00126 .00045 .07890 .20763
NI PB SB SE SI SN SR TI TL U
-.27202 .00060 .08944 .00580 .00188 .28816 .21157 .38828 -.0008 -.0011
Y ZN
-.0001 .00200
STANDARD NOT FOUND
1
SAT

SAT FA
 SAT AA
 ENTER ACT NAME>C
 SAT: IS
 1
 SAT SC
 ENTER COMMAND STRING>EAANDRTYNS
 SAT PC

BURN # 1 C 16-SEP-86 00:42:32
 LV
 4036.3

| | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
| -.0007 | .00386 | .00632 | .00045 | -.0001 | .00043 | .00017 | -.0000 | -.0001 | .00078 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| -.0002 | .00099 | .00004 | .00035 | .73962 | .00801 | .00031 | .00004 | .00017 | .00950 |
| HI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| .00025 | -.0002 | .00109 | .00076 | .00118 | .00268 | .00010 | -.0002 | -.0022 | -.0001 |
| Y | ZN | | | | | | | | |
| .00000 | .00064 | | | | | | | | |

ENTER STANDARD NAME>1
 SAT: PC

BURN # 1 C 16-SEP-86 00:44:32
 LV
 4036.7

| | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
| .32717 | .00411 | .00235 | .00070 | .00004 | .00043 | .06474 | .14158 | .06416 | -.0001 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .08485 | .00097 | -.0011 | .00062 | .71280 | .00793 | .31210 | .21874 | .00033 | .00958 |
| HI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| .00004 | .02188 | -.0011 | .00008 | .00095 | .00417 | .00008 | .00045 | -.0005 | -.0003 |
| Y | ZN | | | | | | | | |
| -.0000 | .16864 | | | | | | | | |

ENTER STANDARD NAME>2
 SAT: PC

BURN # 1 C 16-SEP-86 00:46:32
 LV
 4036.7

| | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
| -.0001 | .08955 | .02520 | .00058 | .24368 | .24160 | .00147 | .00039 | -.0001 | .00035 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .00017 | .16590 | .00033 | .00822 | .71841 | .17027 | .00132 | .00066 | .07905 | .20677 |
| HI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| .27246 | .00031 | .09116 | -.0019 | .00192 | .29009 | .21049 | .38503 | -.0016 | -.0010 |
| Y | ZN | | | | | | | | |
| -.0001 | .00206 | | | | | | | | |

ENTER STANDARD NAME>3
 SAT: PC

BURN # 1 C 16-SEP-86 00:48:32
 LV
 4036.0

| | | | | | | | | | |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
| -.0004 | .00458 | .21213 | .10576 | .00012 | .00047 | .00161 | .00068 | -.0000 | .21610 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .00023 | .00095 | .00008 | .00004 | .71944 | .00793 | .00093 | .00008 | .00000 | .01016 |
| HI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| -.0002 | .00000 | -.0001 | .18436 | .00157 | .00510 | .00002 | .00151 | -.0000 | .00002 |
| Y | ZN | | | | | | | | |
| -.0001 | .00087 | | | | | | | | |

ENTER STANDARD NAME>4

SAT:ID :

BURN # 1 C 16-SEP-86 00:50:32

LU
4076.3

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -.0018 | .00526 | .00489 | .00099 | .00019 | .00074 | .00898 | .00006 | -.0000 | .00012 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .00031 | .00021 | .00008 | -.0033 | 1.1847 | .00753 | .00074 | .00008 | -.0001 | .00966 |
| NI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| -.0010 | -.0000 | -.0001 | .00133 | .00107 | .00638 | -.0000 | .00133 | -.0003 | .27826 |
| Y | ZN | | | | | | | | |
| .00353 | .00043 | | | | | | | | |

ENTER STANDARD NAME>5
SAT>PC

BURN # 1 C 16-SEP-86 00:52:32

LU
4035.7

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -.0029 | .00617 | -.0596 | .00582 | .00000 | .00019 | .00136 | -.0000 | .00035 | .00083 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .00058 | 8.2638 | .00297 | .41360 | .72173 | .00793 | .00105 | .03052 | -.0046 | .01041 |
| NI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| .00264 | .00027 | -.0324 | -.0845 | .00138 | .00494 | .00002 | .00058 | -.0065 | -.0006 |
| Y | ZN | | | | | | | | |
| .00000 | .00256 | | | | | | | | |

ENTER STANDARD NAME>6
SAT>PC

BURN # 1 C 16-SEP-86 00:54:32

LU
4037.3

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| -.0006 | .00427 | .00376 | .00037 | .00004 | .00021 | .00140 | .00033 | -.0004 | .00008 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .00006 | .00303 | -.0006 | .00037 | .71942 | .00793 | .00074 | .00008 | -.0001 | .01040 |
| NI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| .00025 | .02287 | -.0003 | .00559 | .02762 | .00301 | .00002 | .00167 | .03724 | .00014 |
| Y | ZN | | | | | | | | |
| -.0002 | .00087 | | | | | | | | |

ENTER STANDARD NAME>7
SAT>SS
ENTER VALUE(S)>
LOW STD VALUE = 0 FOR LCN:32
SAT>WATS
SAT>EAANCOTY

BURN # 1 C 16-SEP-86 00:56:32

LU
4038.

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|
| .0274 | .8675 | .2773 | .2235 | .4327 | .2221 | 39.80 | .2436 | .2481 | .2976 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .3269 | .7749 | .9333 | .9724 | 9.979 | .0025 | 7.810 | .3331 | -.00 | 44.43 |
| NI | PB | SB | SE | SI | SN | SR | TI | TL | V |
| .1854 | .9866 | .1779 | .0438 | 1.583 | 2.017 | .0204 | .0009 | -.0140 | .8395 |
| Y | ZN | | | | | | | | |
| <-.00 | .4130 | | | | | | | | |

SAT>EAANCOTY

BURN # 1 C 16-SEP-86 00:59:32

LU
4038.

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| .0308 | .8610 | .2820 | .2177 | .4341 | .2214 | 39.78 | .2380 | .2530 | .2975 |

| CH | FE | AU | FF | K | LI | MG | MN | MO | NA |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| .2322 | .7870 | .8849 | 1.010 | 7.878 | .0003 | 7.814 | .3334 | .0019 | 44.44 |
| NI | FR | SB | SE | SI | SN | SR | TI | TL | U |
| .1951 | .5047 | .1725 | .0439 | 1.597 | 1.974 | .0200 | .0013 | .1001 | .8395 |
| Y | ZK | | | | | | | | |
| -.00 | .4090 | | | | | | | | |

SAT:IS
1
SAT:PC

BURN # 1 C 16-SEP-86 01:10:02

LU

4024.7

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .0008 | .00416 | .00337 | .00008 | .00001 | .00021 | .00002 | .00003 | .00000 | .00025 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .0000 | .00083 | .00017 | .00004 | .74015 | .00795 | .00031 | .00008 | .00025 | .00944 |
| NI | FR | SB | SE | SI | SN | SR | TI | TL | U |
| .00087 | .00019 | .00006 | .00002 | .00058 | .00302 | .00001 | .00004 | .00011 | .00002 |
| Y | ZK | | | | | | | | |
| -.0000 | .00064 | | | | | | | | |

ENTER STANDARD NAME>1
SAT:PC

BURN # 1 C 16-SEP-86 01:12:17

LU

4035.7

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .0008 | .00347 | .00491 | .00002 | .00000 | .00027 | .00025 | .00001 | .00002 | .00081 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .0000 | .00128 | .00004 | .00008 | .73181 | .00793 | .00031 | .00008 | .00000 | .00942 |
| NI | FR | SB | SE | SI | SN | SR | TI | TL | U |
| .00018 | .00003 | .00008 | .00058 | .00085 | .00399 | .00002 | .00005 | .00009 | .00000 |
| Y | ZK | | | | | | | | |
| -.0000 | .00064 | | | | | | | | |

ENTER STANDARD NAME>1
SAT:PC

BURN # 1 C 16-SEP-86 01:14:32

LU

4034.7

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| .0006 | .09015 | .00351 | .00107 | .24544 | .24327 | .00130 | .00074 | .00000 | .00004 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .00021 | .16540 | .00087 | .00832 | .70578 | .17159 | .00126 | .00021 | .07824 | .20570 |
| NI | FR | SB | SE | SI | SN | SR | TI | TL | U |
| .27704 | .00047 | .09158 | .00018 | .00244 | .29216 | .21220 | .38681 | .00018 | .00012 |
| Y | ZK | | | | | | | | |
| .00000 | .00215 | | | | | | | | |

ENTER STANDARD NAME>3
SAT:SS

ENTER VALUE(S)>24
SAT:WATS

SAT:EQANCITY

BURN # 1 C 16-SEP-86 01:17:47

LU

4037.

| AG | AL | AS | B | BA | BE | CA | CD | CO | CR |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| .0273 | .8728 | .2729 | .2220 | .4413 | .2256 | 40.09 | .2425 | .2520 | .2994 |
| CU | FE | AU | FF | K | LI | MG | MN | MO | NA |
| .3357 | .7813 | .4667 | .9744 | 9.757 | .0030 | 7.889 | .3370 | .00 | 44.92 |
| NI | FR | SB | SE | SI | SN | SR | TI | TL | U |
| .1991 | .5139 | .1974 | .0492 | 1.615 | 1.970 | .0201 | .0013 | .0330 | .0471 |
| Y | ZK | | | | | | | | |
| -.00 | .4101 | | | | | | | | |

ACT C
UNITS=NG/L **957-14** STD PREP 9/1/86 R. MAYO

☺

| LINE | CLASS | SAMPLE | BURN | MODE | DATE | TIME | AG | AL | AS | B | BA |
|------|-------|--------|------|------|----------|------|-------------|------------|-------------|-------------|------------|
| 1 | 1.X | AR | 001 | CO | 86/ 9/16 | 2: 3 | 5.7597E-05 | 5.8420E-03 | -4.3346E-03 | -1.9322E-03 | 2.5409E-04 |
| 2 | STD | EPA | 001 | CO | 86/ 9/16 | 2: 5 | 2.7771E-02 | 8.7582E-01 | 2.9118E-01 | 2.1182E-01 | 4.3630E-01 |
| 3 | MS378 | EPA3 | 001 | CO | 86/ 9/16 | 2: 7 | 6.0563E-02 | 1.1036E-01 | 4.8969E-02 | 2.6149E-01 | 3.9763E-01 |
| 4 | X85 | INTER | 001 | CO | 86/ 9/16 | 2: 9 | 9.2153E-01 | 4.9536E+02 | -2.4166E-01 | 9.7308E-02 | 4.8434E-01 |
| 5 | /20. | INTER | 001 | CO | 86/ 9/16 | 2:11 | 4.9676E-02 | 2.5715E+01 | -2.2480E-02 | 9.1262E-03 | 2.7441E-02 |
| 6 | 1.X | 1059 | 001 | CO | 86/ 9/16 | 2:13 | 1.6746E-03 | 4.5948E+01 | -3.6734E-02 | 1.3189E-01 | 6.5205E-01 |
| 7 | /4. | 1059 | 001 | CO | 86/ 9/16 | 2:15 | -7.2478E-04 | 1.1726E+01 | -2.1887E-02 | 3.6846E-02 | 1.7238E-01 |
| 8 | 1.X | AR | 001 | CO | 86/ 9/16 | 2:17 | -4.4768E-04 | 6.5379E-03 | -6.9161E-03 | -5.0507E-03 | 8.4691E-04 |
| 9 | STD | EPA | 001 | CO | 86/ 9/16 | 2:19 | 2.8913E-02 | 8.8459E-01 | 2.7935E-01 | 2.1456E-01 | 4.3930E-01 |
| 10 | MS378 | EPA3 | 001 | CO | 86/ 9/16 | 2:21 | 6.1904E-02 | 1.1389E-01 | 4.4757E-02 | 2.6149E-01 | 3.9744E-01 |
| 11 | X85 | INTER | 001 | CO | 86/ 9/16 | 2:23 | 9.2309E-01 | 4.9535E+02 | -3.3432E-01 | 8.3158E-02 | 4.8390E-01 |
| 12 | /20. | INTER | 001 | CO | 86/ 9/16 | 2:25 | 5.1871E-02 | 2.5825E+01 | -4.7742E-03 | 7.9497E-03 | 2.7322E-02 |

| LINE | CLASS | SAMPLE | BE | CA | CD | CO | CR | CU | FE |
|------|-------|--------|-------------|------------|-------------|-------------|-------------|------------|-------------|
| 1 | 1.X | AR | -1.0238E-03 | 5.1093E-03 | 2.9170E-04 | -1.9302E-03 | -5.6599E-03 | 4.8336E-04 | 4.9938E-04 |
| 2 | STD | EPA | 2.2308E-01 | 3.9752E+01 | 2.4353E-01 | 2.5462E-01 | 2.9318E-01 | 3.3259E-01 | 7.6982E-01 |
| 3 | MS378 | EPA3 | -3.4080E-04 | 2.6845E-02 | 6.8503E-03 | -2.1592E-03 | 2.3537E-02 | 3.8842E-03 | -3.3360E-03 |
| 4 | X85 | INTER | 4.6534E-01 | 4.6849E+02 | 9.3006E-01 | 4.6733E-01 | 9.2659E-01 | 5.3334E-01 | 1.7479E+02 |
| 5 | /20. | INTER | 2.3749E-02 | 2.5339E+01 | 5.0002E-02 | 3.0495E-02 | 5.2985E-02 | 3.1373E-02 | 1.0143E+01 |
| 6 | 1.X | 1059 | 4.2853E-03 | 2.4863E+02 | 2.9086E-03 | 1.9005E-02 | 4.2489E-02 | 3.5630E-02 | 3.7752E+01 |
| 7 | /4. | 1059 | 7.2736E-04 | 6.4669E+01 | -7.3052E-04 | 5.5411E-03 | 1.3234E-02 | 1.4145E-02 | 1.0077E+01 |
| 8 | 1.X | AR | -6.0978E-07 | 1.4057E-02 | -2.3324E-03 | 2.2003E-06 | -1.0576E-02 | 4.8323E-04 | 4.1309E-03 |
| 9 | STD | EPA | 2.2333E-01 | 3.9901E+01 | 2.4210E-01 | 2.4981E-01 | 2.9772E-01 | 3.3384E-01 | 7.8153E-01 |
| 10 | MS378 | EPA3 | -4.3164E-04 | 2.8456E-02 | 5.9765E-03 | -1.8370E-03 | 2.2320E-02 | 3.1571E-03 | -4.0661E-03 |
| 11 | X85 | INTER | 4.6263E-01 | 4.6799E+02 | 9.3612E-01 | 4.6962E-01 | 9.2318E-01 | 5.3117E-01 | 1.7436E+02 |
| 12 | /20. | INTER | 2.4940E-02 | 2.5327E+01 | 4.9119E-02 | 2.6945E-02 | 5.6236E-02 | 3.2827E-02 | 1.0152E+01 |

| LINE | CLASS | SAMPLE | AU | PT | K | LI | MS | MN | MO |
|------|-------|--------|-------------|-------------|-------------|-------------|------------|-------------|-------------|
| 1 | 1.X | AR | 2.0004E-01 | -4.0313E-02 | 3.3880E-02 | -4.0829E-06 | 4.3034E-03 | -1.8909E-04 | -2.1384E-04 |
| 2 | STD | EPA | 4.6681E-01 | 9.6608E-01 | 9.9991E+00 | 2.5490E-03 | 8.0667E+00 | 3.3266E-01 | 1.2732E-03 |
| 3 | MS378 | EPA3 | 1.2000E+00 | -2.7266E-02 | -4.5291E-01 | -5.2106E-04 | 2.3166E-03 | -1.8909E-04 | -2.1236E-03 |
| 4 | X85 | INTER | -9.4022E+00 | 1.7632E+02 | -6.3163E-01 | 1.7304E-02 | 1.5017E+02 | 5.1766E-01 | -1.7936E-02 |
| 5 | /20. | INTER | -1.1336E+00 | 9.9366E+00 | -5.1946E-01 | -5.0895E-04 | 2.4431E+01 | 3.0018E-02 | 9.3068E-04 |
| 6 | 1.X | 1059 | -8.6671E-01 | 3.7238E+01 | 6.3619E+00 | 4.5790E-02 | 4.5607E+01 | 6.2841E-01 | -5.0774E-03 |
| 7 | /4. | 1059 | -1.7334E+00 | 9.9264E+00 | 1.0733E+00 | 1.0169E-02 | 1.2919E+01 | 1.6660E-01 | -5.9082E-04 |
| 8 | 1.X | AR | 2.0004E-01 | -6.4945E-02 | -2.3326E-01 | -5.1298E-04 | 3.7738E-03 | 1.8888E-04 | 7.1352E-04 |
| 9 | STD | EPA | 4.6684E-01 | 9.9273E-01 | 9.8361E+00 | 2.5533E-03 | 8.1637E+00 | 3.3518E-01 | -1.8379E-03 |
| 10 | MS378 | EPA3 | -1.0001E+00 | 2.8507E-02 | -5.2259E-01 | -5.1298E-04 | 1.5889E-03 | -1.8880E-04 | 3.1631E-05 |
| 11 | X85 | INTER | -1.1804E+01 | 1.7556E+02 | -7.7136E-01 | 1.7310E-02 | 1.5012E+02 | 5.1714E-01 | -2.4028E-02 |
| 12 | /20. | INTER | -7.3337E-01 | 9.9302E+00 | -5.8697E-01 | -5.1702E-04 | 2.4526E+01 | 2.9446E-02 | -5.5572E-03 |

| LINE | CLASS | SAMPLE | NA | NI | PB | SB | SE | SI | SN |
|------|-------|--------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| 1 | 1.X | AR | -3.9756E-03 | 3.0339E-03 | 1.8814E-02 | -1.4880E-03 | -9.2739E-03 | 2.3760E-03 | 2.4305E-03 |
| 2 | STD | EPA | 4.4604E+01 | 1.9476E-01 | 4.8612E-01 | 1.9427E-01 | 4.1347E-02 | 1.5648E+00 | 1.9382E+00 |
| 3 | MS378 | EPA3 | 2.8866E-01 | -4.1631E-03 | 4.7761E-02 | 2.3391E-02 | 1.1874E-02 | 4.1506E+00 | 1.7101E-02 |
| 4 | X85 | INTER | 4.9397E-01 | 8.8990E-01 | 4.5216E+00 | 1.3321E-01 | -1.7345E-01 | 6.6755E-02 | 4.4942E-02 |
| 5 | /20. | INTER | 5.4421E-02 | 5.1738E-02 | 2.5561E-01 | 1.8175E-02 | -8.3289E-03 | -1.0018E-02 | 8.9479E-03 |
| 6 | 1.X | 1059 | 6.1184E+01 | 4.9226E-02 | 2.9221E-02 | 3.9162E-02 | -4.9009E-02 | 1.0038E+02 | -9.7806E-03 |
| 7 | /4. | 1059 | 1.5662E+01 | 1.3633E-02 | -8.6992E-03 | 2.3814E-02 | -3.0334E-02 | 2.6128E+01 | 1.1381E-02 |
| 8 | 1.X | AR | 8.3380E-03 | -6.6751E-03 | 5.4079E-03 | 5.5210E-03 | -6.4766E-03 | -3.8965E-03 | 1.3016E-02 |
| 9 | STD | EPA | 4.4630E+01 | 2.0206E-01 | 4.8449E-01 | 1.9469E-01 | 8.4905E-02 | 1.6025E+00 | 1.9628E+00 |
| 10 | MS378 | EPA3 | 2.8879E-01 | 1.4494E-03 | 6.7359E-02 | 1.4477E-02 | 5.0391E-05 | 4.1356E+00 | 1.1841E-02 |
| 11 | X85 | INTER | 4.8145E-01 | 8.8990E-01 | 4.5216E+00 | 1.3321E-01 | -1.7345E-01 | 6.6755E-02 | 4.4942E-02 |

| LINE | CLASS | SAMPLE | SR | TI | TL | V | Y | ZN |
|------|-------|--------|-------------|-------------|------------|-------------|-------------|-------------|
| 12 | /20. | INVER | 3.8518E-02 | 3.5364E-02 | 2.6646E-01 | 2.1691E-02 | -3.0755E-02 | -1.3071E-02 |
| | | | | | | | | 1.5956E-02 |
| 1 | 1.X | AR | -2.9448E-04 | -1.6068E-04 | 2.8098E-02 | -6.1378E-04 | -7.4143E-04 | 2.2678E-06 |
| 2 | STD | EPH | 2.0708E-02 | 1.8861E-03 | 1.5090E-02 | 8.4111E-01 | -1.9773E-03 | 4.0907E-01 |
| 3 | WS378 | EPH3 | 9.7988E-03 | 2.9717E-03 | 5.4327E-02 | 3.8879E-04 | -1.4823E-03 | 2.3778E-04 |
| 4 | X85 | INVER | 1.2581E-01 | 4.6084E-03 | 8.7716E-01 | 4.5260E-01 | -1.9768E-03 | 9.0495E-01 |
| 5 | /20. | INVER | 6.5730E-03 | 1.8004E-03 | 9.3304E-02 | 2.3238E-02 | -2.4701E-04 | 5.1694E-02 |
| 6 | 1.X | 1059 | 1.0181E+00 | 1.2382E-01 | 3.7594E-02 | 7.8368E-02 | 9.8332E-02 | 1.1408E-01 |
| 7 | /4. | 1059 | 2.6511E-01 | 3.2057E-02 | 5.7168E-02 | 1.9166E-02 | 1.7796E-02 | 3.8665E-02 |
| 8 | 1.X | AR | -1.3738E-03 | -3.7502E-04 | 3.8501E-02 | 3.5971E-06 | -2.2243E-03 | -1.4711E-03 |
| 9 | STD | EPH | 1.9886E-02 | 1.8821E-03 | 7.9618E-02 | 8.4391E-01 | -9.8861E-04 | 4.1070E-01 |
| 10 | WS378 | EPH3 | 3.9846E-04 | 2.9471E-03 | 3.1445E-02 | 1.8090E-03 | 1.8260E-03 | 1.3471E-03 |
| 11 | X85 | INVER | 1.8821E-01 | 4.8852E-03 | 8.4787E-01 | 4.5134E-01 | -1.2354E-03 | 9.0545E-01 |
| 12 | /20. | INVER | 7.1628E-03 | 1.9889E-03 | 9.7932E-02 | 2.5641E-02 | 1.2358E-03 | 3.1681E-02 |

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: As DATE: 7-2-84
PROJECT-BATCH: 957-14 TRAY NO.: 1

INSTRUMENT: 6
WAVELENGTH: 193.1 nm SLIT: 0.3
LIGHT SOURCE: / EDL HC1
CURRENT/POWER: 9 watts
BACKGROUND CORRECTION: D₂
STANDARD PREP. DATE: 9-2-84
SPIKE = 20 ppb

TUBE: L.P. REP: 2
PURGE: 6.5 Ar N₂
PIPET VOL: 2.0 μl

| Step | 1 | 2 | 3 | 4 | 5 |
|----------|-----|------|------|------|----|
| Temp °C | 160 | 1200 | 2100 | 2600 | 20 |
| Ramp (s) | 2 | 5 | 0 | 1 | 2 |
| Hold (s) | 18 | 15 | 5 | 2 | 4 |
| Boc (s) | | 10 | | | |
| Rec (s) | | | | | |

Matrix Modifier Added Y N

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. <u>μg/l</u> | CONC. <u>mg/kg wt.</u> | COMMENTS |
|-----|------------|-----------|--------------|--------|-------------------|------------------------|------------|
| 1. | CB | 0 | | | | | r=0.9999 |
| 2. | 20 ppb | 50 | | | | | |
| 3. | 50 | 127 | | | | | |
| 4. | 100 | 254 | | | | | |
| 5. | WP 378 + H | 113 | 44.6 | | 45. | | (46) 98% |
| 6. | CB | 0 | <3.0 | | <3.0 | | |
| 7. | D.C.W + BK | 4 | 1.70 | } <3.0 | <3.0 | | |
| 8. | +20 | 56 | 22.1 | | | | (102) |
| 9. | LOSFN + BK | 134 | 52.8 | } 52.8 | 53. | | (53.4) 99% |
| 10. | +20 | 181 | 71.3 | | | | (92) |
| 11. | 11054 + BK | 1 | 0.92 | } <10. | <10. | | |
| 12. | +20 | 47 | 18.6 | | | | (90) |
| 13. | 11055 + BK | 3 | 1.31 | } <10. | <10. | | |
| 14. | +20 | 48 | 19.0 | | | | (88) |
| 15. | CB | 1 | <3.0 | | <3.0 | | |

E = Interference
() = % Rec. of MSA spike

INITIALS PKW

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: As DATE: 9-2-86
PROJECT-BATCH: 957-11 TRAY NO.: 1

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. ug/l | CONC. mg/kg wt. | COMMENTS |
|-----|---------------|-----------|--------------|--------|------------|-----------------|----------|
| 16. | WP 378 #14 | 106 | 41.8 | | 42. | | (46) 91% |
| 17. | 11056 + Blk | 2 | 0.92 | } <10. | <10. | | |
| 18. | +20 | 52 | 20.6 | | | | |
| 19. | 11057 + Blk | 3 | 1.71 | } <10. | <10. | | |
| 20. | +20 | 48 | 19.0 | | | | |
| 21. | 11057dp + Blk | 1 | 0.52 | } <10. | <10. | | |
| 22. | +20 | 42 | 16.6 | | | | |
| 23. | 11057sp | 40 | 15.9 | | 16. | | (20) 80% |
| 24. | 11058 + Blk | 8 | 3.28 | } <10. | <10. | | |
| 25. | +20 | 50 | 19.8 | | | | |
| 26. | CB | -1 | <3.0 | | <3.0 | | |
| 27. | WP 378 #14 | 113 | 44.6 | | 45. | | (46) 98% |
| 28. | 11059 + Blk | 12 | 4.95 | } <10. | <10. | | |
| 29. | +20 | 63 | 24.9 | | | | |
| 30. | CB | -1 | <3.0 | | <3.0 | | |
| 31. | WP 378 #14 | 113 | 44.4 | | 45. | | (46) 98% |
| 32. | | | | | | | |
| 33. | | | | | | | |
| 34. | | | | | | | |
| 35. | | | | | | | |

INITIALS PKW

Versar inc

VERSAR INC.
TRACE METALS SECTION
AAS PRINTER TAPES

ELEMENT: As

DATE: 9-2-86

PROJECT-BATCH: 957-14

| | | | | | |
|----|--------|----|----|--------|----|
| | -0.002 | | | 0.105 | |
| | -0.002 | | | 0.107 | |
| 0 | -0.002 | AV | 16 | 0.106 | AV |
| | 0.000 | AZ | | 0.003 | |
| | 0.001 | | | 0.001 | |
| | 0.000 | | 17 | 0.002 | AV |
| 1 | 0.000 | AV | | 0.051 | |
| | 0.054 | | | 0.054 | |
| | 0.046 | | 18 | 0.052 | AV |
| 2 | 0.050 | AV | | 0.004 | |
| | 0.128 | | | 0.002 | |
| | 0.127 | | 19 | 0.003 | AV |
| 3 | 0.127 | AV | | 0.048 | |
| | 0.251 | | | 0.047 | |
| | 0.256 | | 20 | 0.048 | AV |
| 4 | 0.254 | AV | | 0.002 | |
| | 0.114 | | | 0.001 | |
| | 0.113 | | 21 | 0.001 | AV |
| 5 | 0.113 | AV | | 0.043 | |
| | 0.000 | | | 0.042 | |
| | -0.001 | | 22 | 0.042 | AV |
| 6 | -0.000 | AV | | 0.041 | |
| | 0.003 | | | 0.040 | |
| | 0.004 | | 23 | 0.040 | AV |
| 7 | 0.004 | AV | | 0.007 | |
| | 0.055 | | | 0.008 | |
| | 0.057 | | 24 | 0.008 | AV |
| 8 | 0.056 | AV | | 0.050 | |
| | 0.132 | | | 0.050 | |
| | 0.136 | | 25 | 0.050 | AV |
| 9 | 0.134 | AV | | -0.001 | |
| | 0.180 | | | -0.001 | |
| | 0.183 | | 26 | -0.001 | AV |
| 10 | 0.181 | AV | | 0.111 | |
| | 0.001 | | | 0.115 | |
| | 0.001 | | 27 | 0.113 | AV |
| 11 | 0.001 | AV | | 0.012 | |
| | 0.049 | | | 0.012 | |
| | 0.048 | | 28 | 0.012 | AV |
| 12 | 0.047 | AV | | 0.061 | |
| | 0.004 | | | 0.065 | |
| | 0.003 | | 29 | 0.063 | AV |
| 13 | 0.003 | AV | | -0.000 | |
| | 0.049 | | | -0.002 | |
| | 0.047 | | 30 | -0.001 | AV |
| 14 | 0.048 | AV | | 0.115 | |
| | 0.001 | | | 0.112 | |
| | 0.001 | | 31 | 0.113 | AV |
| 15 | 0.001 | AV | | | |

UNIT 16/L ** 957-14 ** 570 PREP 9/2/66 J. MOORE

| LINE | CLASS | SAMPLE | BURN | MODE | DATE | TIME | AS | AL | AS | B | EA |
|------|-------|--------|------|------|----------|-------|-------------|------------|-------------|-------------|-------------|
| 1 | 1.X | AR | 001 | CO | 06/ 9/ 8 | 16:32 | 1.7377E-03 | 1.2023E-02 | -5.0018E-03 | -5.9708E-03 | -3.0381E-04 |
| 2 | STD | EPA | 001 | CO | 06/ 9/ 8 | 16:36 | 2.6457E-02 | 8.8243E-01 | 2.9774E-01 | 2.234E-01 | +3.3081E-01 |
| 3 | MS378 | EPA14 | 001 | CO | 06/ 9/ 8 | 16:41 | 5.0535E-02 | 7.6807E-02 | 8.2583E-02 | 8.0749E-02 | 7.6685E-01 |
| 4 | X85 | INTER | 001 | CO | 06/ 9/ 8 | 16:48 | 8.9291E-01 | 4.7741E+02 | 5.0378E-01 | -4.5101E-02 | 4.6573E-01 |
| 5 | /20. | INTER | 001 | CO | 06/ 9/ 8 | 16:52 | 4.7023E-02 | 2.4237E+01 | 2.2024E-02 | -7.0970E-03 | 2.9620E-02 |
| 6 | 1.X | DB | 001 | CO | 06/ 9/ 8 | 17: 1 | 6.9693E-03 | 2.4662E-02 | -5.8208E-03 | 1.0689E-02 | 1.0130E-04 |
| 7 | 1.X | LCSD | 001 | CO | 06/ 9/ 8 | 17:13 | 5.3285E-02 | 5.2074E-02 | 9.1367E-02 | 9.3082E-02 | 7.3295E-01 |
| 8 | 1.X | LCSD | 001 | CO | 06/ 9/ 8 | 17:18 | 3.9472E-02 | 1.6849E+00 | 5.7172E-01 | 4.1521E-01 | 8.0395E-01 |
| 9 | 1.X | 1054 | 001 | CO | 06/ 9/ 8 | 17:25 | 3.6201E-05 | 8.6793E+00 | 1.1799E-02 | 1.0621E-01 | 1.1031E-01 |
| 10 | 1.X | 1055 | 001 | CO | 06/ 9/ 8 | 17:31 | -8.0236E-04 | 1.7416E+01 | 3.3092E-02 | 1.8967E-01 | 2.8668E-01 |
| 11 | 1.X | 1056 | 001 | CO | 06/ 9/ 8 | 17:35 | 6.8287E-03 | 1.2275E+01 | 1.2537E-02 | 1.0745E-01 | 1.3666E-01 |
| 12 | 1.X | 1056BP | 001 | CO | 06/ 9/ 8 | 17:40 | -4.9742E-03 | 1.4670E+01 | 2.3174E-02 | 1.4164E-01 | 1.4706E-01 |
| 13 | 1.X | 1056BP | 001 | CO | 06/ 9/ 8 | 17:42 | 1.3204E-01 | 1.7800E+01 | 1.5992E-02 | 1.1269E-01 | 1.8922E+00 |
| 14 | 1.X | AM | 001 | CO | 06/ 9/ 8 | 18: 1 | -2.9412E-04 | 9.8784E-03 | -1.4989E-02 | -1.6358E-03 | -1.7014E+38 |
| 15 | STD | EPA | 001 | CO | 06/ 9/ 8 | 18:10 | 3.2040E-02 | 8.6932E-01 | 3.3600E-01 | 2.2566E-01 | 4.2608E-01 |
| 16 | MS378 | EPA14 | 001 | CO | 06/ 9/ 8 | 18:15 | 5.3021E-02 | 8.5708E-02 | 8.8547E-02 | 7.9769E-02 | 7.6364E-01 |
| 17 | /4. | 1056BP | 001 | CO | 06/ 9/ 8 | 18:20 | 3.9917E-02 | 4.4790E+00 | -4.8908E-03 | 3.0830E-02 | 4.7692E-01 |
| 18 | 1.X | 1057 | 001 | CO | 06/ 9/ 8 | 18:25 | 3.6616E-03 | 6.7649E+00 | 5.9788E-03 | 1.1342E-01 | 8.7433E-02 |
| 19 | 1.X | 1058 | 001 | CO | 06/ 9/ 8 | 18:33 | -4.9017E-03 | 3.7910E+01 | 4.5316E-02 | 1.0104E-01 | 5.7867E-01 |
| 20 | 1.X | AR | 001 | CO | 06/ 9/ 8 | 18:53 | 1.7392E-03 | 1.9912E-02 | -3.7303E-03 | -3.6434E-03 | -3.0392E-04 |
| 21 | STD | EPA | 001 | CO | 06/ 9/ 8 | 18:56 | 3.1073E-02 | 8.9194E-01 | 3.1127E-01 | 2.2132E-01 | 4.2366E-01 |
| 22 | MS378 | EPA14 | 001 | CO | 06/ 9/ 8 | 19: 8 | 5.6252E-02 | 8.9689E-02 | 7.6931E-02 | 7.2400E-02 | 7.6976E-01 |
| 23 | X85 | INTER | 001 | CO | 06/ 9/ 8 | 19:14 | 8.7536E-01 | 4.8673E+02 | 6.4882E-01 | -5.3436E-02 | 4.8053E-01 |
| 24 | /20. | INTER | 001 | CO | 06/ 9/ 8 | 19:19 | 5.4764E-02 | 2.9025E+01 | 3.4111E-02 | -7.5826E-03 | 2.6425E-02 |

| LINE | CLASS | SAMPLE | BE | CA | CD | CO | CR | CJ | FE |
|------|-------|--------|-------------|------------|-------------|------------|-------------|-------------|-------------|
| 1 | 1.X | AR | 3.4533E-04 | 5.5366E-03 | 9.9708E-04 | 1.9076E-03 | 2.1175E-03 | -4.9836E-03 | -2.1884E-03 |
| 2 | STD | EPA | 2.3167E-01 | 4.0387E+01 | 2.4191E-01 | 2.5814E-01 | 2.9463E-01 | 3.2492E-01 | 7.5371E-01 |
| 3 | MS378 | EPA14 | -2.1295E-06 | 2.4933E-02 | 7.8377E-03 | 2.1187E-03 | 8.9427E-02 | 4.2666E-03 | -1.3331E-02 |
| 4 | X85 | INTER | 4.3447E-01 | 4.6189E+02 | 9.3109E-01 | 4.5856E-01 | 9.2773E-01 | 5.1357E-01 | 1.7070E+02 |
| 5 | /20. | INTER | 2.4845E-02 | 2.5150E+01 | 5.5277E-02 | 2.6629E-02 | 4.9127E-02 | 2.9103E-02 | 9.8315E+00 |
| 6 | 1.X | DB | -1.9870E-06 | 8.7104E-02 | -5.7035E-04 | 1.0157E-02 | -2.2453E-03 | 5.3376E-03 | -8.4664E-03 |
| 7 | 1.X | LCSD | 4.4105E-06 | 4.9073E-02 | 1.0544E-02 | 7.8462E-03 | 8.8216E-02 | -2.1370E-03 | -1.9525E-02 |
| 8 | 1.X | LCSD | 4.5964E-01 | 1.0772E+01 | 6.3321E-02 | 4.9148E-01 | 5.8716E-01 | 6.4657E-01 | 1.5207E+00 |
| 9 | 1.X | 1054 | 2.7148E-03 | 1.0629E+02 | 3.8457E-03 | 3.5927E-03 | 6.7437E-03 | 8.0529E-03 | 7.3624E+00 |
| 10 | 1.X | 1055 | 2.6868E-03 | 9.6237E+01 | 1.9909E-03 | 1.6692E-02 | 1.1609E-02 | 1.1838E-02 | 1.4542E+01 |
| 11 | 1.X | 1056 | 2.6947E-03 | 1.1118E+02 | 3.8450E-03 | 1.8119E-02 | 4.4621E-03 | 1.0637E-02 | 1.0258E+01 |
| 12 | 1.X | 1056BP | 2.6885E-03 | 1.1513E+02 | 3.7013E-03 | 1.0451E-02 | 8.3620E-03 | 9.9713E-03 | 1.1972E+01 |
| 13 | 1.X | 1056BP | 5.9391E-02 | 2.0103E+02 | 4.4684E-02 | 4.3090E-01 | 1.8237E-01 | 2.2946E-01 | 1.3546E+01 |
| 14 | 1.X | AR | 6.3207E-07 | 6.3348E-03 | 1.5573E-03 | 1.9120E-03 | -2.5996E-04 | -1.0706E-03 | -5.9498E-03 |
| 15 | STD | EPA | 2.2869E-01 | 4.0248E+01 | 2.3189E-01 | 2.4541E-01 | 2.8984E-01 | 3.2517E-01 | 7.4196E-01 |
| 16 | MS378 | EPA14 | 3.6101E-07 | 3.0076E-02 | 1.3538E-02 | 9.1012E-03 | 9.4719E-02 | -2.4928E-03 | -2.2282E-02 |
| 17 | /4. | 1056BP | 1.4386E-02 | 5.0759E+01 | 1.1818E-02 | 1.1587E-01 | 5.0106E-02 | 5.7765E-02 | 3.5023E+00 |
| 18 | 1.X | 1057 | 2.2628E-03 | 1.0486E+02 | 1.5860E-03 | 1.3161E-02 | 3.6216E-03 | 6.9418E-03 | 5.1448E+00 |
| 19 | 1.X | 1058 | 5.2934E-03 | 1.1993E+02 | 2.4119E-03 | 1.8685E-02 | 3.2698E-02 | 2.6130E-02 | 3.9628E+01 |
| 20 | 1.X | AR | -1.6715E-06 | 9.5028E-03 | -7.1259E-04 | 4.4449E-03 | 3.4471E-03 | 2.1350E-03 | -4.2232E-03 |
| 21 | STD | EPA | 2.3031E-01 | 4.6882E+01 | 2.4278E-01 | 2.5880E-01 | 2.9506E-01 | 3.2277E-01 | 7.5849E-01 |
| 22 | MS378 | EPA14 | -1.9534E-06 | 3.0469E-02 | 9.6888E-03 | 2.1136E-03 | 9.0803E-02 | 1.0648E-03 | -1.5846E-02 |
| 23 | X85 | INTER | 4.6635E-01 | 4.7630E+02 | 9.5673E-01 | 4.7189E-01 | 9.4230E-01 | 5.2967E-01 | 1.7093E+02 |
| 24 | /20. | INTER | 2.5274E-02 | 2.5916E+01 | 5.4412E-02 | 3.4876E-02 | 5.9721E-02 | 2.8391E-02 | 9.9713E+00 |

| LINE | CLASS | SAMPLE | CU | PT | K | LI | MB | MN | MO |
|------|-------|--------|-------------|-------------|------------|------------|-------------|------------|------------|
| 1 | 1.X | AR | 1.4580E+01 | -4.8239E-02 | 2.4713E-01 | 6.2332E-04 | -2.4389E-04 | 9.4868E-04 | 6.6592E-03 |
| 2 | STD | EPA | 1.8018E+01 | 1.5618E+00 | 9.8932E+00 | 4.9009E-03 | 7.7787E+00 | 3.3817E-01 | 2.6331E-03 |
| 3 | MS378 | EPA14 | -8.0158E+00 | -7.8307E-02 | 3.2176E-01 | 2.4132E-05 | 2.6784E-03 | 3.4630E-07 | 2.3877E-03 |
| 4 | X85 | INTER | -1.6026E+01 | 1.7581E+02 | 2.4751E-01 | 1.9498E-02 | 1.9688E+02 | 5.8498E-01 | 1.6672E-01 |

| | | | | | | | | | |
|----|-------|--------|-------------|-------------|------------|------------|------------|------------|-------------|
| 6 | 1.X | DB | 4.5049E+00 | -1.9912E-02 | 2.0686E-01 | 1.2470E-03 | 5.2311E-03 | 2.7909E-04 | -7.2810E-04 |
| 7 | 1.X | LCSB | -3.0060E+00 | -0.0004E-02 | 6.5728E-01 | 1.2322E-03 | 1.2177E-03 | 2.6538E-03 | 6.1588E-04 |
| 8 | 1.X | LCSA | 3.0028E+00 | 3.1937E+00 | 3.0587E+00 | 3.6727E-03 | 2.4582E+00 | 5.7011E-01 | 6.0466E-03 |
| 9 | 1.X | 1054 | 6.0073E+00 | 7.1856E+00 | 1.4852E+00 | 2.0733E-02 | 2.4334E+01 | 3.0942E-01 | 6.2627E-03 |
| 10 | 1.X | 1055 | -6.0125E+00 | 1.4446E+01 | 3.1590E+00 | 2.1337E-02 | 2.4494E+01 | 7.1661E-01 | 1.4133E-02 |
| 11 | 1.X | 1056 | 8.0112E+00 | 1.0127E+01 | 2.6961E+00 | 2.7441E-02 | 2.8454E+01 | 4.7289E-01 | 1.0793E-02 |
| 12 | 1.X | 1056DP | 9.9999E-01 | 1.1670E+01 | 3.0432E+00 | 2.8028E-02 | 2.9697E+01 | 4.8813E-01 | 1.1079E-02 |
| 13 | 1.X | 1056SP | -6.0093E+00 | 1.3732E+01 | 4.9003E+01 | 2.9232E-02 | 6.2001E+01 | 6.4763E-01 | 1.2774E-02 |
| 14 | 1.X | AR | -2.0078E+00 | -4.0496E-02 | 5.0512E-01 | 6.4772E-04 | 8.1210E-04 | 3.4119E-07 | 3.9640E-03 |
| 15 | STD | EPA | 5.3067E+00 | 1.5313E+00 | 1.0682E+01 | 3.6727E-03 | 7.8021E+00 | 3.3230E-01 | 4.0103E-03 |
| 16 | MS378 | EPA14 | 6.0073E+00 | -1.0482E-01 | 3.7053E-01 | 1.2480E-03 | 1.7857E-03 | 4.9506E-08 | 2.3896E-04 |
| 17 | /4. | 1056SP | 3.0013E+00 | 3.5949E+00 | 1.2601E+01 | 8.5713E-03 | 1.7789E+01 | 1.6632E-01 | 3.8788E-03 |
| 18 | 1.X | 1057 | 4.9700E-01 | 5.0877E+00 | 1.3552E+00 | 1.8921E-02 | 2.3288E+01 | 2.5713E-01 | 4.3034E-03 |
| 19 | 1.X | 1058 | -9.0150E+00 | 3.9623E+01 | 8.0793E+00 | 5.0549E-02 | 3.1274E+01 | 6.2058E-01 | 3.7253E-02 |
| 20 | 1.X | AR | 7.0094E+00 | -2.0004E-02 | 2.4670E-04 | 3.3792E-05 | 1.7864E-03 | 4.9834E-08 | 2.8887E-04 |
| 21 | STD | EPA | 5.0057E+00 | 1.6134E+00 | 1.0216E+01 | 4.9062E-03 | 7.9236E+00 | 3.3238E-01 | 3.0426E-03 |
| 22 | MS378 | EPA14 | 1.2018E+01 | -8.0851E-02 | 3.3794E-01 | 1.4480E-05 | 1.7853E-03 | 1.9785E-07 | 1.3245E-03 |
| 23 | X85 | INTER | -3.3051E+01 | 1.7832E+02 | 2.8113E-01 | 2.0713E-02 | 1.3628E+02 | 3.3168E-01 | 1.7464E-01 |
| 24 | /20. | INTER | -1.9024E+01 | 9.8892E+00 | 4.7839E-01 | 3.6322E-03 | 2.3673E+01 | 2.9941E-02 | 1.0532E-02 |

| LINE | CLASS | SAMPLE | NA | NI | PB | SB | SE | SI | SN |
|------|-------|--------|------------|-------------|-------------|-------------|-------------|------------|-------------|
| 1 | 1.X | AR | 1.3793E-02 | 1.9913E-03 | -6.5017E-03 | 1.7602E-02 | 5.1394E-02 | 2.5824E-02 | 1.5185E-03 |
| 2 | STD | EPA | 4.4428E+01 | 1.8767E-01 | 4.6432E-01 | 1.8444E-01 | 7.8978E-02 | 1.5080E+00 | 1.9238E+00 |
| 3 | MS378 | EPA14 | 2.2451E-01 | 1.4284E-03 | 1.2427E-01 | -7.0208E-03 | 3.2310E-02 | 5.3743E-01 | 2.2975E-02 |
| 4 | X85 | INTER | 6.0463E-01 | 8.4189E-01 | 5.0551E+00 | -3.8493E-01 | 1.3594E-01 | 7.4969E-02 | -3.2963E-03 |
| 5 | /20. | INTER | 8.8423E-02 | 4.9163E-02 | 2.9041E-01 | -1.6598E-02 | 1.6385E-02 | 2.7742E-03 | 3.9645E-03 |
| 6 | 1.X | DB | 5.4766E-02 | -2.4241E-03 | 3.7016E-02 | -3.2358E-03 | 4.6524E-02 | 1.1269E-01 | 4.7542E-03 |
| 7 | 1.X | LCSB | 2.6508E-01 | 3.5081E-03 | 1.0162E-01 | -5.6521E-03 | 1.2083E-02 | 6.7462E-01 | 8.2718E-03 |
| 8 | 1.X | LCSA | 1.6580E+01 | 3.8775E-01 | 1.0011E+00 | 2.1015E-01 | 1.0409E-01 | 2.4994E+00 | 1.7980E+00 |
| 9 | 1.X | 1054 | 7.4787E+01 | 1.2124E-03 | 1.4029E-02 | -1.6578E-03 | 3.3972E-02 | 2.6420E+01 | -7.1084E-03 |
| 10 | 1.X | 1055 | 4.3079E+01 | 1.9589E-02 | 8.9895E-02 | -3.5647E-02 | 1.7490E-02 | 4.1520E+01 | 6.9772E-04 |
| 11 | 1.X | 1056 | 7.9934E+01 | 1.5993E-02 | 4.1233E-02 | -2.0881E-02 | 1.8693E-02 | 2.3720E+01 | -8.7018E-03 |
| 12 | 1.X | 1056DP | 7.8998E+01 | 1.7319E-02 | 8.5009E-02 | -2.5826E-02 | -2.0928E-02 | 3.9564E+01 | 3.3667E-03 |
| 13 | 1.X | 1056SP | 1.6063E+02 | 3.6898E-01 | 4.7657E-01 | 3.5563E+00 | 5.3838E-02 | 4.2646E+01 | 4.3034E-01 |
| 14 | 1.X | AR | 1.4150E-02 | -6.4061E-03 | 2.4131E-02 | 5.6049E-03 | -2.4606E-02 | 8.5923E-03 | 1.5157E-03 |
| 15 | STD | EPA | 4.4176E+01 | 1.9136E-01 | 5.1355E-01 | 2.0748E-01 | 4.1413E-02 | 1.5432E+00 | 2.0050E+00 |
| 16 | MS378 | EPA14 | 2.2451E-01 | -6.3636E-03 | 1.1954E-01 | 9.8808E-03 | 2.6530E-02 | 5.1397E-01 | 4.3326E-04 |
| 17 | /4. | 1056SP | 4.0464E+01 | 8.9483E-02 | 1.1704E-01 | 9.0718E-01 | -1.7752E-02 | 1.0654E+01 | 1.2225E-01 |
| 18 | 1.X | 1057 | 7.4412E+01 | 2.2517E-02 | 4.1570E-02 | -4.9229E-03 | 7.7035E-02 | 2.3140E+01 | -1.1610E-02 |
| 19 | 1.X | 1058 | 7.3124E+01 | 4.2529E-02 | 1.2480E-01 | -8.8431E-02 | 4.3311E-02 | 8.6212E+01 | 1.7774E-03 |
| 20 | 1.X | AR | 7.2845E-03 | -2.2510E-03 | 1.8946E-02 | 8.5004E-04 | 5.1240E-02 | 2.1066E-02 | 9.0768E-03 |
| 21 | STD | EPA | 4.4940E+01 | 1.8543E-01 | 4.9923E-01 | 2.1598E-01 | 8.3091E-02 | 1.5650E+00 | 1.9866E+00 |
| 22 | MS378 | EPA14 | 2.4470E-01 | -9.3067E-03 | 1.2054E-01 | 9.7790E-03 | 6.7384E-02 | 6.7320E-01 | 1.3901E-02 |
| 23 | X85 | INTER | 6.3861E-01 | 8.8188E-01 | 5.1453E+00 | -3.8024E-01 | 1.7036E-01 | 6.5025E-02 | 2.1043E-03 |
| 24 | /20. | INTER | 1.0185E-01 | 5.7636E-02 | 3.1657E-01 | -1.0324E-02 | 3.5313E-02 | 4.0838E-02 | 8.9335E-03 |

| LINE | CLASS | SAMPLE | SR | TI | TL | V | Y | ZN |
|------|-------|--------|------------|-------------|-------------|-------------|-------------|-------------|
| 1 | 1.X | AR | 8.1968E-04 | 1.2384E-03 | -1.7802E-02 | 1.2816E-04 | -3.4863E-03 | 1.0953E-03 |
| 2 | STD | EPA | 2.0807E-02 | 7.1780E-05 | 2.4516E-02 | 8.3176E-01 | -1.5492E-03 | 4.0800E-01 |
| 3 | MS378 | EPA14 | 5.1825E-04 | 2.9063E-04 | -5.3723E-02 | 9.8083E-04 | -3.0992E-03 | 4.2912E-04 |
| 4 | X85 | INTER | 1.2348E-01 | 3.4848E-03 | 2.8433E+00 | 3.2710E-01 | -6.1981E-03 | 9.0219E-01 |
| 5 | /20. | INTER | 7.8751E-03 | 9.4698E-04 | 1.8682E-01 | 2.6767E-02 | -1.9452E-03 | 5.1337E-02 |
| 6 | 1.X | DB | 1.0225E-04 | -3.6560E-04 | 3.9751E-02 | 6.6865E-04 | -1.9369E-03 | 1.6307E-02 |
| 7 | 1.X | LCSB | 5.1825E-04 | -2.2598E-03 | -3.2441E-02 | -1.3914E-03 | -1.5493E-03 | 1.2963E-03 |
| 8 | 1.X | LCSA | 6.9688E-03 | -4.3806E-04 | 3.6409E-02 | 1.6525E+00 | -1.5494E-03 | 3.1563E-01 |
| 9 | 1.X | 1054 | 5.1568E-01 | 3.8780E-02 | 7.3114E-02 | 1.9356E-02 | 7.7968E-04 | 6.1015E-02 |
| 10 | 1.X | 1055 | 5.5705E-01 | 7.9888E-02 | 8.2457E-02 | 3.7608E-02 | 1.4733E-02 | 5.2908E-02 |
| 11 | 1.X | 1056 | 5.4933E-01 | 5.3874E-02 | 6.9780E-02 | 2.0479E-02 | 3.4498E-02 | 5.1053E-02 |
| 12 | 1.X | 1056DP | 5.7084E-01 | 6.3998E-02 | 8.6239E-02 | 3.2513E-02 | 3.3328E-02 | 6.1890E-02 |
| 13 | 1.X | 1056SP | 5.5138E-01 | 5.8589E-02 | 1.6052E-01 | 4.7737E-01 | 3.7971E-02 | 2.5498E-01 |
| 14 | 1.X | AR | 5.1825E-04 | -7.4288E-03 | 4.8978E-02 | 2.9073E-04 | -1.9269E-03 | -3.4500E-04 |

| | | | | | | | | |
|----|-------|--------|------------|-------------|-------------|------------|-------------|-------------|
| 16 | WS378 | EPR14 | 9.2222E-04 | -2.1961E-04 | -4.9394E-02 | 1.2199E-04 | -1.5493E-03 | -1.8484E-04 |
| 17 | /4. | 10568P | 1.4138E-01 | 1.442E-02 | 3.1374E-02 | 1.2326E-01 | 7.7557E-03 | 6.7796E-02 |
| 18 | 1.1 | 1057 | 5.0029E-01 | 5.0402E-02 | 1.8992E-02 | 1.5716E-02 | 3.1047E-03 | 7.5031E-02 |
| 19 | 1.1 | 1058 | 5.9446E-01 | 1.6573E-01 | 2.5664E-01 | 9.4881E-02 | 2.4037E-02 | 9.7957E-02 |
| 20 | 1.1 | NR | 5.1223E-04 | -2.9291E-04 | 2.9736E-02 | 6.8298E-04 | -1.5493E-03 | -5.3159E-04 |
| 21 | STD | EPR | 2.0194E-02 | 1.3109E-03 | 1.9759E-02 | 8.3275E-01 | -1.5492E-03 | 4.1635E-01 |
| 22 | WS378 | EPR14 | 9.2215E-04 | 8.0111E-04 | -2.8125E-02 | 9.7468E-04 | -1.9367E-03 | -5.1897E-04 |
| 23 | XMS | INTER | 1.2840E-01 | 3.5700E-03 | 2.3748E+00 | 5.3482E-01 | -3.0987E-03 | 9.2580E-01 |
| 24 | /20. | INTER | 7.2740E-03 | 1.8215E-03 | 1.3657E-01 | 3.2623E-02 | -1.5491E-03 | 5.2701E-02 |

Form VIII

Q.C. Report No. 14

STANDARD ADDITION RESULTS

LAB NAME Veracar, Inc.

CASE NO. 6282

DATE 9-8-86

UNITS ug/l

| Sample # | Element | 0 ADD | 1 ADD | 2 ADD | 3 ADD | FINAL | r* |
|----------|---------|-------|------------------------|------------------------|------------------------|-------------------|--------------------|
| | | ABS. | CON./ABS. ¹ | CON./ABS. ¹ | CON./ABS. ¹ | CON. ² | |
| LCSEA | Pb | 32 | 10/42 | 20/55 | 40/70 | 136 ^A | 0.993 ⁺ |
| MFC 291 | Pb | 55 | 10/68 | 20/82 | 40/98 | 106 ^B | 0.990 ⁺ |
| MFC 293 | Pb | 19 | 10/32 | 20/45 | 40/73 | 14 | 0.999 |
| MFC 294 | Pb | 26 | 10/33 | 20/47 | 40/54 | 38 | 0.962 ⁺ |
| LCSEA | Pb | 23 | 10/44 | 20/59 | 40/75 | 88 | 0.971 ⁺ |
| MFC 291 | Pb | 52 | 10/67 | 20/79 | 40/108 | 75 | 0.999 |
| MFC 294 | Pb | 27 | 10/35 | 20/44 | 40/58 | 35 | 0.998 |
| LCSEA | Pb | 25 | 10/39 | 20/51 | 40/70 | 97 | 0.995 |
| | | | | | | | |
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¹ CON is the concentration added, ABS. is the instrument readout in absorbance or concentration.

² Concentration as determined by MSA

*"r" is the correlation coefficient.

+ - correlation coefficient is outside of control window of 0.995.

A - D.F. of 4
 B - D.F. of 2
 C - D.F. of 1

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: Pb DATE: 9-16-86
PROJECT-BATCH: 957-14 TRAY NO.: 1

INSTRUMENT: 3
WAVELENGTH: 283.2 nm SLIT: 0.7
LIGHT SOURCE: EDL HCL
CURRENT/POWER: 10.2
BACKGROUND CORRECTION: 0.2

TUBE: N REP: 2
PURGE: 40 Ar N₂
PIPET VOL: 10 5 2 1

STANDARD PREP. DATE: 9-16-86

SPIKE = 20 ppb

Matrix Modifier Added Y N

| Step | 1 | 2 | 3 | 4 | 5 |
|----------|-----|-----|------|------|---|
| Temp °C | 110 | 850 | 2300 | 2500 | |
| Ramp (s) | 5 | 5 | 1 | 1 | |
| Hold (s) | 20 | 15 | 4 | 2 | |
| Boc (s) | | 10 | | | |
| Rec (s) | | | | | |

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. µg/L | CONC. mg/kg wt. | COMMENTS |
|-----|-------------|---------------------|--------------|------|------------|-----------------|------------|
| 1. | CB | -1 | | | | | (=0.9999) |
| 2. | 20 ppb | 25 | | | | | |
| 3. | 50 ppb | 66 | | | | | |
| 4. | 100 ppb | 13 & 5 ^y | | | | | |
| 5. | EPA 37F #14 | 76 | 57 | | 57 | | (53) 108% |
| 6. | CB | -1 | <3.0 | | <3.0 | | |
| 7. | 0BLW+B | 1 | <3.0 | | <3.0 | | |
| 8. | ↓ +10 | 16 | 12.9 | | | | |
| 9. | LC5FA+B | 122 | 91 | | | | Recun 4pts |
| 10. | ↓ +10 | 130 | 96 | | | | (50) |
| 11. | 1105N+B | 6 | 5.6 | | 5.6 | | |
| 12. | ↓ +10 | 19 | 15 | | | | (94) |
| 13. | 1055+B | 12 | 10 | | 10 | | |
| 14. | ↓ +10 | 26 | 20 | | | | (100) |
| 15. | 1056+B | 71 | 53 | | | | Recun 4pts |

E = Interference
() = % Rec. of MSA spike

INITIALS E.L.F.

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: Pb DATE: 9-16-86
PROJECT-BATCH: 957-14 TRAY NO.: 1

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. $\mu\text{g/g}$ | CONC. mg/kg wt. | COMMENTS | |
|-----|------------------------|-----------|--------------|-------|-----------------------|--------------------------|------------|------|
| 16. | 11056+1C | 87 | 65 | | | | (120) | |
| 17. | CB | 0 | <3.0 | | <3.0 | | | |
| 18. | EPA 378 #14 | 74 | 56 | | 56. | | [53] 100% | |
| 19. | 11057+B | 4 | 4.2 | } <5. | <5. | | | |
| 20. | ↓ +1C | 13 | 11. | | | | | (68) |
| 21. | 110570P+B | 2 | <3. | } <5. | <5. | | | |
| 22. | ↓ +10 | 11 | 9.3 | | | | | (93) |
| 23. | 11057 <P | 25 | 20. | | 20. | | 100% | |
| 24. | 11058+B | 23 | 18 | | — | | Re-run 4pt | |
| 25. | ↓ +10 | 31 | 24 | | | | (100) | |
| 26. | 11059+B | 27 | 21 | | — | | Re-run 4pt | |
| 27. | ↓ +1C | 30 | 23 | | | | (20) | |
| 28. | CB | -1 | <3.0 | | <3.0 | | | |
| 29. | EPA 378 #14 | 72 | 54 | | 54. | | [53] 102% | |
| 30. | LCSRA +B | 32 | | /4 | | | r=0.993 | |
| 31. | F +10 | 42 | } 34 | | — | | Re-run | |
| 32. | +20 | 55 | | | | | | |
| 33. | +40 | 70 | | | | | | |
| 34. | | | | | | | | |
| 35. | Continued on next page | | | | | | | |

INITIALS EF 

ELEMENT: Pb

DATE: 9-16-86

PROJECT-BATCH: 957-14

TRAY NO.: 2

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. $\mu\text{g/l}$ | CONC. mg/kg wt. | COMMENTS |
|-----|----------|-----------|--------------|------|-----------------------|--------------------------|----------------|
| 1. | 11056 +8 | 55 | 53 | 1/2 | — | — | $r=0.9901$ |
| 2. | +10 | 68 | | | | | |
| 3. | +20 | 82 | | | | | |
| 4. | +40 | 98 | | | | | |
| 5. | 11058 +8 | 19 | 14 | | 14 | | $r=0.9998$ |
| 6. | +10 | 32 | | | | | |
| 7. | +20 | 45 | | | | | |
| 8. | +40 | 73 | | | | | |
| 9. | 11059 +8 | 26 | 38 | | — | — | $r=0.9621$ |
| 10. | +10 | 33 | | | | | |
| 11. | +20 | 49 | | | | | |
| 12. | +40 | 54 | | | | | |
| 13. | CB | 2 | < 3.0 | | < 30 | | |
| 14. | EPA | 72 | 54 | | 54 | | [53] 100% |
| 15. | LCSEA +8 | 23 | 22 | 1/4 | — | — | $r=0.9719$ |
| 16. | +10 | 44 | | | | | |
| 17. | +20 | 59 | | | | | |
| 18. | +40 | 75 | | | | | |
| 19. | 11056 +8 | 52 | 38 | 1/2 | 75 | | $r=0.9994$ |
| 20. | +10 | 67 | | | | | |
| 21. | +20 | 79 | | | | | |
| 22. | +40 | 108 | | | | | |
| 23. | 11059 +8 | 27 | 35 | | 35 | | $r=0.9995$ |
| 24. | +10 | 35 | | | | | |
| 25. | +20 | 44 | | | | | |
| 26. | +40 | 58 | | | | | |
| 27. | LCSEA +8 | 25 | 24 | 1/4 | 97 | | $r=0.9955$ |
| 28. | +10 | 39 | | | | | |
| 29. | +20 | 51 | | | | | |
| 30. | +40 | 70 | | | | | |
| 31. | CB | 0 | < 3.0 | | < 3.0 | | 118% loc 40 |
| 32. | EPA | 72 | 54 | | 54 | | (53) 100% |
| 33. | | | | | | | |
| 34. | | | | | | | |
| 35. | | | | | | | |

INITIALS ELF

Versar inc.

VERSAR INC.
TRACE METALS SECTION
AAS PRINTER TAPES

ELEMENT: Pb
PROJECT-BATCH: 957-14

DATE: 9-16-86

957-14
9/16

| | | | | | | |
|----|--------|----|----|--------|----|--|
| | 0.003 | | | 0.071 | | |
| | -0.001 | | 15 | 0.071 | AV | |
| | 0.001 | AV | | 0.087 | | |
| | 0.000 | | | 0.086 | | |
| | -0.001 | | 16 | 0.087 | AV | |
| | -0.001 | | | -0.002 | | |
| 1 | -0.001 | AV | | 0.001 | | |
| | 0.024 | | 17 | -0.000 | AV | |
| | 0.027 | | | 0.073 | | |
| 2 | 0.025 | AV | | 0.076 | | |
| | 0.068 | | 18 | 0.074 | AV | |
| | 0.064 | | | 0.007 | | |
| 3 | 0.066 | AV | | 0.001 | | |
| | 0.134 | | 19 | 0.004 | AV | |
| | 0.135 | | | 0.015 | | |
| 4 | 0.135 | AV | | 0.011 | | |
| | 0.075 | | 20 | 0.013 | AV | |
| | 0.077 | | | 0.002 | | |
| 5 | 0.076 | AV | | 0.001 | | |
| | -0.003 | | 21 | 0.002 | AV | |
| | 0.001 | | | 0.011 | | |
| 6 | -0.001 | AV | | 0.010 | | |
| | 0.000 | | 22 | 0.011 | AV | |
| | 0.001 | | | 0.027 | | |
| 7 | 0.001 | AV | | 0.023 | | |
| | 0.015 | | 23 | 0.025 | AV | |
| | 0.016 | | | 0.020 | | |
| 8 | 0.016 | AV | | 0.025 | | |
| | 0.125 | | 24 | 0.023 | AV | |
| | 0.119 | | | 0.035 | | |
| 9 | 0.122 | AV | | 0.026 | | |
| | 0.129 | | 25 | 0.031 | AV | |
| | 0.132 | | | 0.026 | | |
| 10 | 0.130 | AV | | 0.027 | | |
| | 0.006 | | 26 | 0.027 | AV | |
| | 0.002 | | | 0.032 | | |
| 11 | 0.002 | AV | | 0.028 | | |
| | 0.007 | | 27 | 0.030 | AV | |
| | 0.004 | | | 0.003 | | |
| | 0.006 | AV | 28 | -0.004 | | |
| | 0.014 | | | -0.001 | AV | |
| | 0.023 | | 29 | 0.072 | | |
| 12 | 0.019 | AV | 30 | 0.072 | AV | |
| | 0.011 | | 31 | 0.032 | | |
| | 0.012 | | 32 | 0.062 | | |
| 13 | 0.012 | AV | 33 | 0.055 | | |
| | 0.011 | | | 0.072 | | |
| 14 | 0.011 | AV | | | | |

957-14
9/16

AV
checked
tube

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: As DATE: 9-6-86
PROJECT-BATCH: 957-19 TRAY NO.: 1

INSTRUMENT: 6
WAVELENGTH: 196.0 nm SLIT: 2.0
LIGHT SOURCE: ✓ EDL HC1
CURRENT/POWER: 6 walls
BACKGROUND CORRECTION: D₂

TUBE: L.P. REP: 2
PURGE: -0- Ar H₂
PIPET VOL: 2.0 ul

STANDARD PREP. DATE: 9-6-86
SPIKE = 10ppb

Matrix Modifier Added Y ✓ N

| Step | 1 | 2 | 3 | 4 | 5 |
|----------|-----|------|------|------|----|
| Temp °C | 160 | 1600 | 2000 | 2600 | 20 |
| Ramp (s) | 2 | 5 | 0 | 1 | 2 |
| Hold (s) | 20 | 15 | 5 | 2 | 4 |
| Boc (s) | | 10 | | | |
| Rec (s) | | | | | |

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. $\mu\text{g/l}$ | CONC. mg/kg wt. | COMMENTS |
|-----|--------------|-----------|--------------|------|-----------------------|--------------------------|----------------|
| 1. | CB | 0 | | | | | $r^2=0.999$ |
| 2. | 10ppb | 37 | | | | | |
| 3. | 20 | 79 | | | | | |
| 4. | 50 | 201 | | | | | |
| 5. | NP 2.34 #2 | 90 | 22.6 | 2 | 45. | | [30.2] 90% |
| 6. | CB | -4 | <3.0 | | <3.0 | | |
| 7. | A.B. W + Blk | -4 | 0.00 } <3.0 | | <3.0 | | |
| 8. | +10 | 75 | 9.05 } | | | | (90) |
| 9. | LCsFA1 + Blk | 69 | 8.5 } 17.5 | | | | use other LCsF |
| 10. | +10 | 112 | 28.1 } | | | | (106) |
| 11. | LCsFA2 + Blk | 74 | 18.7 } 18.7 | | 19. | | [21.9] 87% |
| 12. | +10 | 119 | 29.8 } | | | | (111) |
| 13. | 11054 + Blk | 0 | 0.90 } <3.0 | | <3.0 | | |
| 14. | +10 | 18 | 4.95 } | | | | (44) |
| 15. | CB | 0 | <3.0 | | <2.0 | | |

E = Interference
() = % Rec. of MSA spike

INITIALS Pkw

Versar

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: Se DATE: 9-6-86
PROJECT-BATCH: 957-14 TRAY NO.: 1

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. ug/L | CONC. mg/kg wt. | COMMENTS |
|-----|--------------|-----------|--------------|------|------------|-----------------|----------|
| 16. | Fisher 20ppb | 90 | 20.2 | | 20. | | 100% |
| 17. | 11055+Blk | 1 | 0.64 } <5.0 | | <5.0 | | |
| 18. | +10 | 23 | 6.01 | | | | (50) |
| 19. | 11056+Blk | 1 | 0.64 } <5.0 | | <5.0 | | |
| 20. | +10 | 17 | 4.60 | | | | (90) |
| 21. | 11057+Blk | 1 | 0.64 } <5.0 | | <5.0 | | |
| 22. | +10 | 18 | 4.35 | | | | (42) |
| 23. | 11057dp+Blk | 1 | 0.64 } <5.0 | | <5.0 | | |
| 24. | +10 | 20 | 5.34 | | | | (47) |
| 25. | 11057sp | 19 | 5.10 | | 5.1 | | [10] 51% |
| 26. | BB | 3 | <3.0 | | <3.0 | | |
| 27. | Fisher 20ppb | 90 | 20.2 | | 20. | | 100% |
| 28. | 11058+Blk | 2 | 0.89 } <5.0 | | --- | | Re-run |
| 29. | +10 | 2 | 0.89 | | | | (0) |
| 30. | 11059+Blk | 1 | 0.64 } <5.0 | | --- | | Re-run |
| 31. | +10 | 12 | 3.26 | | | | (27) |
| 32. | 11058+Blk | 2 | 0.89 } <5.0 | 10 | <5.0 | | |
| 33. | +10 | 36 | 9.20 | | | | (84) |
| 34. | 11059+Blk | 3 | 1.14 } <5.0 | 5 | <2.5 | | |
| 35. | +10 | 37 | 9.55 | | | | (84) |

INITIALS PKW

ELEMENT: SL DATE: 9-6-86
PROJECT-BATCH: 957-14 TRAY NO.: 2

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. ug/l | CONC. mg/kg wt. | COMMENTS |
|-----|--------------|-----------|--------------|------|------------|-----------------|----------|
| 1. | 40 | 3 | 43.0 | | 43.0 | | |
| 2. | Fisher 20ppb | 37 | 18.9 | | 20. | | 100% |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. | | | | | | | |
| 7. | | | | | | | |
| 8. | | | | | | | |
| 9. | | | | | | | |
| 10. | | | | | | | |
| 11. | | | | | | | |
| 12. | | | | | | | |
| 13. | | | | | | | |
| 14. | | | | | | | |
| 15. | | | | | | | |
| 16. | | | | | | | |
| 17. | | | | | | | |
| 18. | | | | | | | |
| 19. | | | | | | | |
| 20. | | | | | | | |
| 21. | | | | | | | |
| 22. | | | | | | | |
| 23. | | | | | | | |
| 24. | | | | | | | |
| 25. | | | | | | | |
| 26. | | | | | | | |
| 27. | | | | | | | |
| 28. | | | | | | | |
| 29. | | | | | | | |
| 30. | | | | | | | |
| 31. | | | | | | | |
| 32. | | | | | | | |
| 33. | | | | | | | |
| 34. | | | | | | | |
| 35. | | | | | | | |

INITIALS (2mm)

VERSAR

**VERSAR INC.
TRACE METALS SECTION
AAS PRINTER TAPES**

ELEMENT: DATE:
PROJECT-BATCH:

| | | | | | | | | |
|----|--------|----|----|--------|----|-------------|-------|----|
| | 0.001 | | | 0.082 | | | 0.038 | |
| | 0.002 | | | 0.078 | | | 0.036 | |
| 0 | 0.001 | AV | 16 | 0.080 | AV | 33 | 0.036 | AV |
| | 0.000 | AZ | | -0.000 | | | 0.003 | |
| | -0.000 | | 17 | 0.002 | | | 0.003 | |
| 1 | -0.000 | AV | | 0.001 | AV | 34 | 0.003 | AV |
| | 0.037 | | | 0.025 | | | 0.038 | |
| | 0.037 | | 18 | 0.021 | | | 0.036 | |
| 2 | 0.037 | AV | | 0.023 | AV | 35 | 0.037 | AV |
| | 0.078 | | | 0.001 | | | 0.004 | |
| | 0.079 | | 19 | -0.000 | | | 0.003 | |
| 3 | 0.079 | AV | | 0.001 | AV | Tray 2 1 | 0.003 | AV |
| | 0.199 | | | 0.017 | | | 0.078 | |
| | 0.202 | | 20 | 0.017 | | 2 | 0.080 | |
| 4 | 0.201 | AV | | 0.017 | AV | | 0.079 | AV |
| | 0.091 | | | -0.000 | | | | |
| | 0.090 | | 21 | 0.001 | AV | | | |
| 5 | 0.090 | AV | | 0.019 | | | | |
| | -0.005 | | | 0.017 | | | | |
| | -0.004 | | 22 | 0.018 | AV | | | |
| 6 | -0.004 | AV | | 0.001 | | | | |
| | -0.004 | | | 0.002 | | | | |
| | -0.005 | | 23 | 0.001 | AV | | | |
| 7 | -0.004 | AV | | 0.020 | | | | |
| | 0.034 | | | 0.020 | | | | |
| | 0.036 | | 24 | 0.020 | AV | | | |
| 8 | 0.035 | AV | | 0.020 | | | | |
| | 0.068 | | | 0.019 | | | | |
| | 0.071 | | 25 | 0.019 | AV | | | |
| 9 | 0.069 | AV | | 0.004 | | | | |
| | 0.111 | | | 0.002 | | | | |
| | 0.114 | | 26 | 0.003 | AV | | | |
| 10 | 0.112 | AV | | 0.079 | | | | |
| | 0.076 | | | 0.080 | | | | |
| | 0.073 | | 27 | 0.080 | AV | | | |
| 11 | 0.074 | AV | | 0.001 | | | | |
| | 0.119 | | | 0.003 | | | | |
| | 0.119 | | 28 | 0.002 | AV | | | |
| 12 | 0.119 | AV | | 0.002 | | | | |
| | -0.001 | | | 0.002 | | | | |
| | 0.000 | | 29 | 0.002 | AV | | | |
| 13 | -0.000 | AV | | 0.001 | | | | |
| | 0.018 | | | 0.001 | | | | |
| | 0.017 | | 30 | 0.001 | AV | | | |
| 14 | 0.018 | AV | | 0.012 | | | | |
| | 0.000 | | | 0.012 | | | | |
| | 0.001 | | 31 | 0.012 | AV | | | |
| 15 | 0.000 | AV | | 0.002 | | | | |
| | | | | 0.002 | | | | |
| | | | 32 | 0.002 | AV | | | |

Versar

Page 15

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: TL DATE: 9-9-86
PROJECT-BATCH: 957-14 TRAY NO.: 1

INSTRUMENT: 8
WAVELENGTH: 277.5 nm SLIT: 0.7
LIGHT SOURCE: ✓ EDL NCI
CURRENT/POWER: 7
BACKGROUND CORRECTION: ZETA/ANV
STANDARD PREP. DATE: 9-9-86
SPIKE - 20p
Matrix Modifier Added Y N ✓

TUBE: LiP REP: 2
PURGE: 0 Ar H₂
PIPET VOL: 10 uL

| Step | 1 | 2 | 3 | 4 | 5 |
|----------|-----|-----|------|------|---|
| Temp °C | 170 | 600 | 1400 | 2400 | |
| Ramp (s) | 5 | 5 | 0 | 1 | |
| Hold (s) | 25 | 15 | 5 | 3 | |
| Boc (s) | | | | | |
| Rec (s) | | | | | |

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. ug/L | CONC. mg/kg wt. | COMMENTS |
|-----|-------------|-----------|--------------|------|------------|-----------------|------------|
| 1. | CB | 2 | | | | | 99% |
| 2. | 20p | 48 | | | | | |
| 3. | 50 | 114 | | | | | |
| 4. | 100 | 209 | | | | | |
| 5. | EPA 1185 #1 | 113 | 52. | | 52. | | Exp 1104% |
| 6. | ICV-4 | 110 | 51. | | 51. | | Exp 1107% |
| 7. | CB | -1 | <3.0 | | <3.0 | | |
| 8. | DB +B | 0 | <3.0 | | <3.0 | | |
| 9. | ↓ +20 | 47 | 20. | | | | (100%) |
| 10. | LSB +B | 106 | 49. | | 49. | | 98% |
| 11. | ↓ +20 | 147 | 68. | | | | (95%) |
| 12. | 11054 +b | 0 | <3.0 <10. | | | | re-run / 5 |
| 13. | ↓ +20 | 21 | 7.5) | | | | (88%) |
| 14. | 11055 +B | -1 | <3.0 <10. | | <10. | | |
| 15. | ↓ +20 | 22 | 8.0) | | | | (40%) |

E = Interference
() = % Rec. of MSA spike

INITIALS f

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: Pb DATE: 9.9.86
PROJECT-BATCH: 984-14 TRAY NO.: 1

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. $\mu\text{g}/\text{L}$ | CONC. mg/kg wt. | COMMENTS |
|-----|--------------|-----------|--------------|------|------------------------------|---------------------------------|-------------|
| 16. | 11056 +B | 0 | <3.0 } <10. | | | | norm / S |
| 17. | ↓ +20 | 20 | 7.0 } | | | | (35%) |
| 18. | CB | 1 | <3.0 | | <3.0 | | |
| 19. | EPA 1185 #1 | 118 | 54. | | 54. | | 50% 108% |
| 20. | 11057 +B | 1 | <3.0 } <10. | | <10. | | |
| 21. | ↓ +20 | 23 | 8.4 } | | | | (42%) |
| 22. | 11057 NP +B | -1 | <7.0 } <10. | | | | norm / S |
| 23. | ↓ +20 | 19 | 6.5 } | | | | (32%) |
| 24. | 11058 +B | 0 | <3.0 } <10. | | <10. | | |
| 25. | ↓ +20 | 22 | 8.0 } | | | | (40%) |
| 26. | 11059 +B | 2 | <3.0 } <10. | | <10. | | |
| 27. | ↓ +20 | 24 | 8.9 } | | | | (44%) |
| 28. | 11057 SA. +B | 41 | 17. | | 17. | | 34% |
| 29. | CB | -1 | <3.0 | | <3.0 | | |
| 30. | EPA 1185 #1 | 117 | 54. | | 54. | | 50% 108% |
| 31. | 11054 +B | 0 | <3.0 } <10. | 5 | <50. | | |
| 32. | ↓ +20 | 27 | 10.1 } | ↓ | | | ± 100 (50%) |
| 33. | 11057 NP +B | -1 | <3.0 } <10. | | <50. | | |
| 34. | ↓ +20 | 28 | 11. } | ↓ | | | (55%) |
| 35. | CB | 0 | <3.0 | | <3.0 | | |
| 36. | EPA 1185 #1 | 116 | 54. | | 54. | | 50% 108% |

INITIALS J

TL 957-14

9-9-86

35

```

TL 0001
MEAN= 0.001 STD.DEV.= COEF.VAR.= 13.9%
*****
TL 0001
MEAN= 0.002 STD.DEV.= COEF.VAR.= 95.91%
*****
TL 0002
MEAN= 0.045 STD.DEV.= COEF.VAR.= 0.95%
*****
TL 0003
MEAN= 0.115 STD.DEV.= COEF.VAR.= 0.93%
*****
TL 0004
MEAN= 0.210 STD.DEV.= COEF.VAR.= 0.47%
*****
TL 0005
MEAN= 0.113 STD.DEV.= COEF.VAR.= 1.53%
*****
TL 0006
MEAN= 0.110 STD.DEV.= COEF.VAR.= 0.97%
*****
TL 0007
MEAN= -0.001 STD.DEV.= COEF.VAR.= 11.02%
*****
TL 0008
MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99%
*****
TL 0009
MEAN= 0.047 STD.DEV.= COEF.VAR.= 0.90%
*****
TL 0010
MEAN= 0.105 STD.DEV.= COEF.VAR.= 0.02%
*****

```

```

TL 0011
MEAN= 0.147 STD.DEV.= COEF.VAR.= 1.64%
*****
TL 0012
MEAN= 0.000 STD.DEV.= COEF.VAR.= 99.99%
*****
TL 0013
MEAN= 0.021 STD.DEV.= COEF.VAR.= 9.40%
*****
TL 0014
MEAN= -0.001 STD.DEV.= COEF.VAR.=
*****

```

```

MEAN= -0.001 STD.DEV.= ***** COEF.VAR.= 13.47 % *****
TL 0015
-----
MEAN= 0.022 STD.DEV.= ***** COEF.VAR.= 7.64 % *****
TL 0016
-----
MEAN= 0.000 STD.DEV.= ***** COEF.VAR.= 99.99 % *****
TL 0017
-----
MEAN= 0.020 STD.DEV.= ***** COEF.VAR.= 1.54 % *****
TL 0018
-----
MEAN= 0.001 STD.DEV.= ***** COEF.VAR.= 99.99 % *****
TL 0019
-----
MEAN= 0.118 STD.DEV.= ***** COEF.VAR.= 0.34 % *****
TL 0020
-----
MEAN= 0.001 STD.DEV.= ***** COEF.VAR.= 22.68 % *****
TL 0021
-----
MEAN= 0.003 STD.DEV.= ***** COEF.VAR.= 6.00 % *****
-----
TL 0022
-----
MEAN= -0.001 STD.DEV.= ***** COEF.VAR.= 29.40 % *****
TL 0023
-----
MEAN= 0.019 STD.DEV.= ***** COEF.VAR.= 0.44 % *****
TL 0024
-----
MEAN= 0.000 STD.DEV.= ***** COEF.VAR.= 25.02 % *****
TL 0025
-----
MEAN= 0.022 STD.DEV.= ***** COEF.VAR.= 3.37 % *****
TL 0026
-----
MEAN= 0.002 STD.DEV.= ***** COEF.VAR.= 98.93 % *****
TL 0027
-----
MEAN= 0.024 STD.DEV.= ***** COEF.VAR.= 1.16 % *****
TL 0028
-----
MEAN= 0.041 STD.DEV.= ***** COEF.VAR.= 7.54 % *****
TL 0029

```

3

```

0.000      -0.002
-----
MEAN= -0.001  STD.DEV.=          COEF.VAR.= 99.99 %
*****
TL 0030
0.116      0.119
-----
MEAN=  0.117  STD.DEV.=          COEF.VAR.=  1.41 %
*****
TL 0031
0.001      0.001
-----
MEAN=  0.000  STD.DEV.=          COEF.VAR.= 99.99 %
*****
TL 0032
0.026      0.028
-----
MEAN=  1.027  STD.DEV.=          COEF.VAR.=  3.99 %
*****

```

```

TL 0033
-0.002      -0.001
-----
MEAN= -0.001  STD.DEV.=          COEF.VAR.= 13.38 %
*****
TL 0034
0.028      0.028
-----
MEAN=  0.028  STD.DEV.=          COEF.VAR.=  0.17 %
*****
TL 0035
0.002      -0.001
-----
MEAN=  0.000  STD.DEV.=          COEF.VAR.= 99.99 %
*****
TL 0036
0.116      0.114
-----
MEAN=  0.116  STD.DEV.=          COEF.VAR.=  2.47 %
*****

```

VERSAR INC.
TRACE METALS SECTION
FLAMELESS AAS ANALYSIS LOG SHEET

ELEMENT: TL DATE: 9.16.86
PROJECT-BATCH: 937-14 TRAY NO.: 1

INSTRUMENT: 8
WAVELENGTH: 277 nm SLIT: 0.7
LIGHT SOURCE: EOL HCl
CURRENT/POWER: 7
BACKGROUND CORRECTION: ZEEMAN
STANDARD PREP. DATE: 9.16.86
SPIKE = _____
Matrix Modifier Added Y N

TUBE: LeP. REP: 2
PURGE: 0 Ar _____ N₂ _____
PIPET VOL: 10 uL

| Step | 1 | 2 | 3 | 4 | 5 |
|----------|-----|-----|------|------|---|
| Temp °C | 110 | 600 | 1000 | 2400 | |
| Ramp (s) | 5 | 5 | 0 | 1 | |
| Hold (s) | 20 | 15 | 5 | 3 | |
| Boc (s) | | | | | |
| Rec (s) | | | | | |

| CUP | LAB # | AVG. ABS. | UNADJ. CONC. | D.F. | CONC. $\mu\text{g/l}$ | CONC. mg/kg wt. | COMMENTS |
|-----|------------|-----------|--------------|------|-----------------------|-----------------|-----------|
| 1. | CB | -2 | | | | | 9989 |
| 2. | Z04 | 46 | | | | | |
| 3. | 50 | 112 | | | | | |
| 4. | 100 | 209 | | | | | |
| 5. | ERA 1183*1 | 118 | 55 | | 55 | | 50.1 110% |
| 6. | ICV-4 | 114 | 53 | | 53 | | 51.6 111% |
| 7. | CB | -1 | 22.0 | | <2.0 | | |
| 8. | 110% +B | -2 | <20 <10 | 15 | <50 | | |
| 9. | +20 | 26 | 11 | | | | |
| 10. | CB | -3 | <2.0 | | <2.0 | | |
| 11. | ERA 1183*1 | 117 | 55 | | 55 | | 50.1 110% |
| 12. | | | | | | | |
| 13. | | | | | | | |
| 14. | | | | | | | |
| 15. | | | | | | | |

E = Interference
() = % Rec. of MSA spike

INITIALS

```

TL 0001
0.001 0.001
-----
MEAN= 0.001 STD.DEV.= COEF.VAR.= 5.17 %
*****
0.000 AUTOZERO
*****
TL 0001
-0.002 -0.001
-----
MEAN= -0.002 STD.DEV.= COEF.VAR.= 30.25 %
*****
TL 0002
0.046 0.045
-----
MEAN= 0.046 STD.DEV.= COEF.VAR.= 0.23 %
*****
TL 0003
0.111 0.114
-----
MEAN= 0.112 STD.DEV.= COEF.VAR.= 2.46 %
*****
TL 0004
0.210 0.208
-----
MEAN= 0.209 STD.DEV.= COEF.VAR.= 0.76 %
*****
TL 0005
0.122 0.114
-----
MEAN= 0.118 STD.DEV.= COEF.VAR.= 4.42 %
*****
TL 0006
0.113 0.116
-----
MEAN= 0.114 STD.DEV.= COEF.VAR.= 2.09 %
*****
TL 0007
-0.001 -0.002
-----
MEAN= -0.001 STD.DEV.= COEF.VAR.= 77.51 %
*****
TL 0008
-0.002 -0.003
-----
MEAN= -0.002 STD.DEV.= COEF.VAR.= 22.69 %
*****
TL 0009
0.026 0.026
-----
MEAN= 0.026 STD.DEV.= COEF.VAR.= 0.76 %
*****
TL 0010
-0.003 -0.004
-----
MEAN= -0.003 STD.DEV.= COEF.VAR.= 25.29 %
*****

```

```

TL 0011
0.115 0.120
-----
MEAN= 0.117 STD.DEV.= COEF.VAR.= 2.55 %
*****

```



VERSAR INC.
TRACE METALS SECTION
COLD VAPOR Hg ANALYSIS LOG SHEET

PROJECT/BATCH: 957-14
SAMPLE #s: 11054 → 11059

DATE: 8-15-86

INSTRUMENT: #7
WAVELENGTH: _____ nm SLIT: _____
BACKGROUND CORRECTOR: _____

LIGHT SOURCE EDL HCL
CURRENT/POWER: _____
GAS FLOW: 1.6 Lpm

Spike level = 1 ppb

| | LAB # | ABS. | UNADJ. CONC. ^{µg/l} | D.F. | ADJ. CONC. ^{µg/l} | COMMENTS |
|-----|----------------------------|-------|------------------------------|------|----------------------------|-------------|
| 1. | CB | 0.008 | | | | r = 0.9989 |
| 2. | 0.5 ppb | 0.040 | | | | |
| 3. | 2 | 0.135 | | | | |
| 4. | 5 | 0.32 | | | | |
| 5. | 10 | 0.58 | | | | |
| 6. | CB/MS | 0.007 | <0.2 | | <0.2 | |
| 7. | ¹⁰⁵ /EPA 378 #4 | 0.29 | 4.78 | | 4.8 | [4.47] 109% |
| 8. | CB | 0.006 | <0.2 | | <0.2 | |
| 9. | 11054 | 0.013 | <0.2 | | <0.2 | |
| 10. | 11054dp | 0.008 | <0.2 | | <0.2 | |
| 11. | 11055 | 0.009 | <0.2 | | <0.2 | |
| 12. | 11055sp | 0.086 | 1.22 | | 1.2 | 120% |
| 13. | 11056 | 0.004 | <0.2 | | <0.2 | |
| 14. | 11057 | 0.002 | <0.2 | | <0.2 | |
| 15. | 11058 | 0.008 | <0.2 | | <0.2 | |
| 16. | 11059 | 0.012 | <0.2 | | <0.2 | |
| 17. | CB | 0.004 | <0.2 | | <0.2 | |
| 18. | ALEA | 0.157 | 2.46 | | 2.5 | [2.57] 100% |
| 19. | | | | | | |
| 20. | | | | | | |
| 21. | | | | | | |
| 22. | | | | | | |
| 23. | | | | | | |
| 24. | | | | | | |
| 25. | | | | | | |

Initials

Handwritten initials/signature

1/20/60
 Sample Distribution:
 5/5 to 5/10/60

Total (N) (CAR 112000)

957 10.1.14

| Standard (mg/L) | Response |
|-----------------|----------|
| 200 | 98.3 |
| 100 | 55.2 |
| 50 | 32.5 |
| 25 | 21.4 |
| 10 | 15.0 |
| Calcd BIK | 10.8 |

N = 0.99995

| Lab Sample # | Initial vol (ml) | Final vol (ml) | Response | W. vol (ml) | W F | Response (mg/L) | Comments |
|---------------------------|------------------|----------------|----------|-------------|-----|-----------------|---------------|
| * Cal Check (CS 100 mg/L) | 50. | 250. | 60.0 | 113. | 1/5 | 564. | 101% Recovery |
| Calcd BIK | - | - | 55.9 | 98.4 | - | 98.4 | 98% Recovery |
| Calcd BIK | - | - | 10.2 | 110.0 | - | 110.0 | |
| Batch #10 * L.C.S. | 50. | 250. | 60.0 | 112. | 1/5 | 561. | 100% Recovery |
| Krup BIK | 200. | 250. | 10.4 | 110.0 | - | 110.0 | |
| Calcd BIK | - | - | 10.2 | 110.0 | - | 110.0 | |
| 9889 | 250. | 250 | 10.2 | 110.0 | - | 110.0 | |
| 9890 | 250 | 250 | 10.4 | 110.0 | - | 110.0 | |
| 9891 | 250 | 250 | 10.4 | 110.0 | - | 110.0 | |
| 9891dup | 250 | 250 | 10.2 | 110.0 | - | 110.0 | ± 10.0 mg/L |
| 9892 | 250 | 250 | 10.4 | 110.0 | - | 110.0 | |
| 9892 Spk (Krup) | 250 | 250 | 50.3 | 90.2 | - | 90.2 | 90% Spk Rec |
| 9894 | 250 | 250 | 10.4 | 110.0 | - | 110.0 | |
| 9894 | 250 | 250 | 10.4 | 110.0 | - | 110.0 | |
| 9895 | 250 | 250 | 10.4 | 110.0 | - | 110.0 | |
| 9896 | 250 | 250 | 10.3 | 110.0 | - | 110.0 | |
| CS | - | - | 52.8 | 98.2 | - | 98.2 | 98% Recovery |
| Calcd BIK | - | - | 10.5 | 110.0 | - | 110.0 | |
| 4897 | 250 | 250 | 29.2 | 42.2 | - | 42.2 | |
| Batch #12 * L.C.S. | 50. | 250 | 55.7 | 102. | 1/5 | 512. | 91% Recovery |
| Krup BIK | 200. | 250 | 10.8 | 110.0 | - | 110.0 | |
| CS | - | - | 54.2 | 99.1 | - | 99.1 | 99% Recovery |
| Calcd BIK | - | - | 10.5 | 110.0 | - | 110.0 | |

* L.C.S. and Cal Check - Ref 510 WP 1182 88 = 501 mg/L
 (Samples for
 Met. Analysis
 2/4/80)

10/1/86

Total CN

457 - 10.14
(Cont'd)

| Lab Sample # | Initial vol (L) | Final vol (L) | Recovery | Initial CN (mg/L) | D.F. | Recovery CN (mg/L) | Comments |
|--------------------------|-----------------|---------------|----------|-------------------|------|--------------------|------------------|
| 10322 | 250 | 250 | 11.1 | <10.0 | - | <10.0 | <10.0 mg/L |
| 10325 dup | 250 | 250 | 10.9 | <10.0 | - | <10.0 | |
| 10326 | 250 | 250 | 10.8 | <10.0 | - | <10.0 | |
| 10327 | 250 | 250 | 10.6 | <10.0 | - | <10.0 | |
| 10327 dup | 250 | 250 | 10.8 | <10.0 | - | <10.0 | |
| 10328 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 10329 | 250 | 250 | 10.6 | <10.0 | - | <10.0 | |
| 10330 | 250 | 250 | 11.5 | <10.0 | - | <10.0 | |
| 10331 | 250 | 250 | 11.3 | <10.0 | - | <10.0 | |
| 10332 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| C.S. | - | - | 53.8 | 18.2 | - | 48.2 | 95% Recovery |
| Control BIK | - | - | 11.0 | <10.0 | - | <10.0 | |
| 10333 | 250 | 250 | 11.4 | <10.0 | - | <10.0 | |
| 10334 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 10335 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 10336 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 10337 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 10338 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 10339 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | <10.0 mg/L |
| 10339 dup | 250 | 250 | 11.6 | <10.0 | - | <10.0 | |
| 10339 Spk (1.00 mg/L) | 250 | 250 | 52.3 | 14.8 | - | 94.8 | 95% Recovery |
| C.S. | - | - | 54.4 | 101. | - | 101. | 101% Recovery |
| Control BIK | - | - | 10.8 | <10.0 | - | <10.0 | |
| 1500. #14 | 50. | 250. | 57.4 | 106. | 1/5 | 532. | 95% Recovery |
| Krup BIK | 500. | 250. | 10.2 | <10.0 | - | <10.0 | |
| 11060 | 250 | 250 | 10.9 | <10.0 | - | <10.0 | <10.0 mg/L |
| 11060 dup | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 11060 Spk (1.00 mg/L) | 250 | 250 | 46.4 | 81.3 | - | 81.3 | 81% Spk Recovery |
| 11061 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 11062 | 250 | 250 | 11.0 | <10.0 | - | <10.0 | |
| 11063 | 250 | 250 | 10.8 | <10.0 | - | <10.0 | |

9-16-86

Milene J. Sullivan
9/14/86

1-15-6

Lab. Exp.

957-14 (cont.)

| Lab Sample # | Initial val (g) | Final val (g) | Recovery % | Gravimetry CN Core | U.F. | Recovery CN (% net) | Comments |
|--------------|--------------------|------------------|---------------|-----------------------|------|------------------------|---------------|
| 11064 | 250 | 250 | 10.8 | 410.0 | - | 410.0 | |
| 11065 | 250 | 250 | 10.9 | 410.0 | - | 410.0 | |
| CLS | - | - | 55.2 | 101. | - | 101. | 101% Recovery |
| Calor B/K | - | - | 10.6 | 410.0 | - | 410.0 | |

7.7

1-

VERSAR INC.
 GENERAL INORGANIC CHEMISTRY
 DISTILLATION LOG SHEET

PARAMETER: CN⁻
 MATRIX: H₂O's
 PROJECT/BATCH: 957-14

| LAB #'s | INITIAL VOL. (ml) | SAMPLE WEIGHT (g) | FINAL VOLUME (ml) | INITIALS | DATE | COMMENTS |
|---------------|----------------------|----------------------|----------------------|----------|---------|----------|
| 1) 11060 | 250 | | 250 | RMB | 8/13/86 | |
| 2) 11060 Dup | | | | | | |
| 3) 11061 | | | | | | |
| 4) 11062 | | | | | | |
| 5) 11063 | | | | | | |
| 6) 11064 | | | | | | |
| 7) 11065 | | | | | | |
| 8) BIK | 500 | | | | | |
| 9) LCS | 50 | | | | | |
| 10) JPK 11060 | 250 | | 250 | RB | 8/13/86 | |
| 11) | | | | | | |
| 12) | | | | | | |
| 13) | | | | | | |
| 14) | | | | | | |
| 15) | | | | | | |
| 16) | | | | | | |
| 17) | | | | | | |
| 18) | | | | | | |
| 19) | | | | | | |
| 20) | | | | | | |

SPIN: LAB # 11060 1182 # 8 - SPIKED WITH 2.5 ml of 10.00M mg/l KCN solution
 QA REP. STD. SERIES/CONC.: RB 100 1182 0.561 mg/l # 8