ROY F. WESTON, INC.
LIONVILLE ANALYTICAL LABORATORY
ANALYTICAL CASE NARRATIVE

Client: M&E SPARTON
RFW #: 9410L747

W.O. #: 03272-036-002-9999-00
Date Received: 10-26-94

CLP METALS

1. This narrative covers the analyses of six (6) water samples.

2. The samples were prepared and analyzed in accordance with the following protocols: CLP SOW 3/90.

3. ICVs, CCVs, and LCSs stock standards were purchased from Inorganic Ventures Laboratory and High Purity.

4. All analyses were performed within the required holding times.

5. All Initial and Continuing Calibration Verifications (ICV/CCV's) were within control limits.

6. All Initial and Continuing Calibration Blanks (ICB/CCB's) were within control limits.

7. All Preparation/Method Blanks were below Reporting Limits.

8. All ICP Interference Check Samples (ICSA and ICSAB) were within control limits.

9. All Laboratory Control Samples (LCS) were within the 80-120% control limits.

10. All Serial Dilution percent differences were within USEPA SOW control limits except for:

RFW #	Element	%Difference
001	Calcium	11.4
	Magnesium	18.2

WESTON

11. All Matrix Spike recoveries were within the 75-125% control limits (exception allowed when sample concentration exceeds the spike added concentration by a factor of 4 or more) except for:

RFW #	Element	%Recovery	RFW #	Element	%Recovery
001	Arsenic	70.5	001T	Selenium	70.0
	Lead	73.5		Lead	70.0
				Thallium	66.2

For analytes where the Matrix Spike is out of control, a Post-Digestion Matrix Spike is performed (exception allowed for Ag).

Matrix Spike analyses are not required for Ca, Mg, Na, and K in waters.

12. All Matrix Spike Duplicates were within the 20% Relative Percent Difference (RPD) control limits.

13. All Duplicate analyses were within the 20% Relative Percent Difference (RPD) control limits for samples values greater than 5X Reporting Limit, or +/- the Reporting Limits for sample values less than 5X Reporting Limit except for:

RFW #	Element	%RPD
001	Calcium	31.5
	Sodium	31.2

14. Method of Standard Additions (MSA) analysis was performed on the following sample:

Element	Sample #
Lead	005

15. The code CV currently in use by the laboratory is for the mercury instrument (HG1). HG1 is complete with autosampler and software, but still requires manual digestion.

16. HG1 requires less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionally scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 ml. For soils, 0.1 gram of sample is taken to a final volume of 50 ml (including all reagents).

17. The graphite furnace time that appears on form XIV is the time of the first injection. The time that appears on the data is the print time.

18. A discrepancy exists between raw data and Form XIVs analytical spikes recovery calculations performed for graphite furnace AA analytes. Instrument software calculates spike recoveries based on absolute values below the IDL for sample results. This is hard-coded by the vendor and is currently not correctable. CLP convention (SOW ILM02.0, Exhibit E, Section V, Item 6, page E-20) requires that when values fall below the IDL, the sample result is equal to zero (0) for the purposes of calculating the percent recovery. The Form XIVs contain the correct calculation.

19. Arsenic, lead, selenium and thallium are calibrated from 0-60 ppb. See Form 12 of package for ICP Linear Ranges.

J. Peter Hershey, Ph.D.
Laboratory Manager
Lionville Analytical Laboratory

11.29.94
Date

mlj/clp-met.nar

USEPA CONTRACT LABORATORY PROGRAM
DATA QUALIFIER DESCRIPTIONS
INORGANIC ANALYSIS SOW 3/90

CONCENTRATION QUALIFIERS:

B	=	INDICATES THAT THE REPORTED VALUE IS LESS THAN THE CRDL BUT GREATER THAN THE IDL.
U	=	INDICATES THAT THE ANALYTE WAS ANALYZED FOR BUT NOT DETECTED.

QUALIFIERS

E	=	THE REPORTED VALUE IS ESTIMATED BECAUSE OF THE PRESENCE INTERFERENCE.
M	=	DUPLICATE INJECTION PRECISION NOT MET.
N	=	SPIKED SAMPLE RECOVERY NOT WITHIN CONTROL LIMITS.
S	=	THE REPORTED VALUE WAS DETERMINED BY THE METHOD OF STANDARD ADDITIONS (MSA).
W	=	POST DIGESTION SPIKE FOR FURNANCE AA ANALYSIS IS OUT OF CONTROL LIMITS (85-125%) WHILE SAMPLE ABSORBANCE IS LESS THAN 50% OF SPIKE ABSORBANCE.
*****	=	DUPLICATE ANALYSIS NOT WITHIN CONTROL LIMITS.
+	=	CORRELATION COEFFICIENT FOR THE MSA IS LESS THAN 0.995.

METHOD

P	=	ICP
A	=	FLAME AA
F	=	FURNACE AA
CV	=	MANUAL COLD VAPOR AA
AV	=	AUTOMATED COLD VAPOR AA
AS	=	SEMI-AUTOMATED SPECTROPHOTOMETRIC
C	=	MANUAL SPECTROPHOTOMETRIC
T	=	TITRIMETRIC
NR	=	NOT REQUIRED

DATA SUMMARY

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	MW-52	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	40.2		UG/L	18.0	1.0
		Arsenic, Total	4.5		UG/L	2.1	1.0
		Barium, Total	34.6		UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	27200		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	2.7		UG/L	2.7	1.0
		Chromium, Total	8.0		UG/L	5.8	1.0
		Copper, Total	2.6		UG/L	1.6	1.0
		Iron, Total	29.8		UG/L	8.4	1.0
		Potassium, Total	4790		UG/L	649	1.0
		Magnesium, Total	6700		UG/L	21.9	1.0
		Manganese, Total	2.6	u	UG/L	2.6	1.0
		Sodium, Total	38600		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Lead, Total	1.0	u	UG/L	1.0	1.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Selenium, Total	1.6		UG/L	1.6	1.0
		Thallium, Total	2.9	u	UG/L	2.9	1.0
		Vanadium, Total	20.1		UG/L	2.7	1.0
		Zinc, Total	12.2		UG/L	1.7	1.0

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INORGANICS DATA SUMMARY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	MW-53	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	25.8		UG/L	18.0	1.0
		Arsenic, Total	3.9		UG/L	2.1	1.0
		Barium, Total	55.4		UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	57500		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	2.7	u	UG/L	2.7	1.0
		Chromium, Total	95.7		UG/L	5.8	1.0
		Copper, Total	2.0		UG/L	1.6	1.0
		Iron, Total	21.8		UG/L	8.4	1.0
		Potassium, Total	5610		UG/L	649	1.0
		Magnesium, Total	10800		UG/L	21.9	1.0
		Manganese, Total	2.6	u	UG/L	2.6	1.0
		Sodium, Total	58300		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Lead, Total	1.6		UG/L	1.0	1.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Selenium, Total	1.6	u	UG/L	1.6	1.0
		Thallium, Total	2.9	u	UG/L	2.9	1.0
		Vanadium, Total	27.7		UG/L	2.7	1.0
		Zinc, Total	32.8		UG/L	1.7	1.0

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	MW-61	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	28.5		UG/L	18.0	1.0
		Arsenic, Total	4.4		UG/L	2.1	1.0
		Barium, Total	52.5		UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	74600		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	2.7	u	UG/L	2.7	1.0
		Chromium, Total	8.2		UG/L	5.8	1.0
		Copper, Total	1.6	u	UG/L	1.6	1.0
		Iron, Total	18.7		UG/L	8.4	1.0
		Potassium, Total	5680		UG/L	649	1.0
		Magnesium, Total	12800		UG/L	21.9	1.0
		Manganese, Total	2.6	u	UG/L	2.6	1.0
		Sodium, Total	56000		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Lead, Total	1.0	u	UG/L	1.0	1.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Selenium, Total	1.6	u	UG/L	1.6	1.0
		Thallium, Total	2.9	u	UG/L	2.9	1.0
		Vanadium, Total	29.7		UG/L	2.7	1.0
		Zinc, Total	10.3		UG/L	1.7	1.0

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	MW-41	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	18.0	u	UG/L	18.0	1.0
		Arsenic, Total	2.1	u	UG/L	2.1	1.0
		Barium, Total	39.8		UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	77700		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	3.5		UG/L	2.7	1.0
		Chromium, Total	5.8	u	UG/L	5.8	1.0
		Copper, Total	2.0		UG/L	1.6	1.0
		Iron, Total	16.6		UG/L	8.4	1.0
		Potassium, Total	4410		UG/L	649	1.0
		Magnesium, Total	11400		UG/L	21.9	1.0
		Manganese, Total	183		UG/L	2.6	1.0
		Sodium, Total	47600		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Lead, Total	1.0	u	UG/L	1.0	1.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Selenium, Total	1.6	u	UG/L	1.6	1.0
		Thallium, Total	2.9	u	UG/L	2.9	1.0
		Vanadium, Total	27.1		UG/L	2.7	1.0
		Zinc, Total	7.3		UG/L	1.7	1.0

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INORGANICS DATA SUMMARY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	MW-32	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	18.1		UG/L	18.0	1.0
		Arsenic, Total	6.0		UG/L	2.1	1.0
		Barium, Total	79.5		UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	89500		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	2.7	u	UG/L	2.7	1.0
		Chromium, Total	5.8	u	UG/L	5.8	1.0
		Copper, Total	1.6	u	UG/L	1.6	1.0
		Iron, Total	938		UG/L	8.4	1.0
		Potassium, Total	4000		UG/L	649	1.0
		Magnesium, Total	13400		UG/L	21.9	1.0
		Manganese, Total	1110		UG/L	2.6	1.0
		Sodium, Total	43300		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Lead, Total	58.9		UG/L	2.0	2.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Selenium, Total	1.6	u	UG/L	1.6	1.0
		Thallium, Total	29.0	u	UG/L	29.0	10.0
		Vanadium, Total	24.0		UG/L	2.7	1.0
		Zinc, Total	24.0		UG/L	1.7	1.0

ROY F. WESTON INC.

INORGANICS DATA SUMMARY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-006	MW-15	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	21.7		UG/L	18.0	1.0
		Arsenic, Total	2.1	u	UG/L	2.1	1.0
		Barium, Total	2.4	u	UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	339		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	2.7	u	UG/L	2.7	1.0
		Chromium, Total	5.8	u	UG/L	5.8	1.0
		Copper, Total	2.3		UG/L	1.6	1.0
		Iron, Total	47.9		UG/L	8.4	1.0
		Potassium, Total	649	u	UG/L	649	1.0
		Magnesium, Total	152		UG/L	21.9	1.0
		Manganese, Total	2.6	u	UG/L	2.6	1.0
		Sodium, Total	611		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Lead, Total	1.0	u	UG/L	1.0	1.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Selenium, Total	1.6	u	UG/L	1.6	1.0
		Thallium, Total	2.9	u	UG/L	2.9	1.0
		Vanadium, Total	10.9		UG/L	2.7	1.0
		Zinc, Total	10.3		UG/L	1.7	1.0

ROY F. WESTON INC.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	94L1673-MB1	Silver, Total	2.0	u	UG/L	2.0	1.0
		Aluminum, Total	20.9		UG/L	18.0	1.0
		Barium, Total	2.4	u	UG/L	2.4	1.0
		Beryllium, Total	0.40	u	UG/L	0.40	1.0
		Calcium, Total	47.6		UG/L	18.3	1.0
		Cadmium, Total	2.6	u	UG/L	2.6	1.0
		Cobalt, Total	2.7	u	UG/L	2.7	1.0
		Chromium, Total	5.8	u	UG/L	5.8	1.0
		Copper, Total	1.6	u	UG/L	1.6	1.0
		Iron, Total	8.4	u	UG/L	8.4	1.0
		Potassium, Total	649	u	UG/L	649	1.0
		Magnesium, Total	119		UG/L	21.9	1.0
		Manganese, Total	2.6	u	UG/L	2.6	1.0
		Sodium, Total	168		UG/L	21.8	1.0
		Nickel, Total	10.3	u	UG/L	10.3	1.0
		Antimony, Total	23.5	u	UG/L	23.5	1.0
		Vanadium, Total	12.5		UG/L	2.7	1.0
		Zinc, Total	2.3		UG/L	1.7	1.0
BLANK1	94L1672-MB1	Arsenic, Total	2.1	u	UG/L	2.1	1.0
		Lead, Total	1.0	u	UG/L	1.0	1.0
		Selenium, Total	1.6	u	UG/L	1.6	1.0
		Tnallium, Total	2.9	u	UG/L	2.9	1.0
BLANK1	94L1741-MB1	Zinc, Total	2.1		UG/L	1.7	1.0

ROY F. WESTON INC.

INORGANICS ACCURACY REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	MW-52	Silver, Total	38.4	2.0 u	50.0	76.8	1.0
		Silver, Total MSD	39.6	2.0 u	50.0	79.2	1.0
		Aluminum, Total	1670	40.2	2000	81.3	1.0
		Aluminum, Total MSD	1700	40.2	2000	83.1	1.0
		Arsenic, Total	32.7	4.5	40.0	70.5	1.0
		Arsenic, Total MSD	35.0	4.5	40.0	76.2	1.0
		Barium, Total	1650	34.6	2000	80.7	1.0
		Barium, Total MSD	1680	34.6	2000	82.5	1.0
		Beryllium, Total	41.3	0.40u	50.0	82.6	1.0
		Beryllium, Total MSD	42.4	0.40u	50.0	84.8	1.0
		Calcium, Total	62300	27200	25000	140.1	1.0
		Calcium, Total MSD	63900	27200	25000	146.4	1.0
		Cadmium, Total	43.1	2.6 u	50.0	86.2	1.0
		Cadmium, Total MSD	42.7	2.6 u	50.0	85.4	1.0
		Cobalt, Total	400	2.7	500	79.5	1.0
		Cobalt, Total MSD	408	2.7	500	81.2	1.0
		Chromium, Total	175	8.0	200	83.6	1.0
		Chromium, Total MSD	178	8.0	200	85.2	1.0
		Copper, Total	200	2.6	250	79.1	1.0
		Copper, Total MSD	204	2.6	250	80.4	1.0
		Iron, Total	815	29.8	1000	78.5	1.0
		Iron, Total MSD	860	29.8	1000	83.0	1.0
		Potassium, Total	30000	4790	25000	100.8	1.0
		Potassium, Total MSD	29900	4790	25000	100.6	1.0
		Magnesium, Total	32800	6700	25000	104.6	1.0
		Magnesium, Total MSD	33600	6700	25000	107.4	1.0
		Manganese, Total	394	2.6 u	500	78.9	1.0
		Manganese, Total MSD	403	2.6 u	500	80.6	1.0
		Sodium, Total	78800	38600	25000	160.8	1.0
		Sodium, Total MSD	80500	38600	25000	167.4	1.0
		Nickel, Total	404	10.3 u	500	80.8	1.0
		Nickel, Total MSD	412	10.3 u	500	82.5	1.0
		Lead, Total	14.7	1.0 u	20.0	73.5	1.0
		Lead, Total MSD	14.0	1.0 u	20.0	70.0	1.0
		Antimony, Total	456	23.5 u	500	91.3	1.0
		Antimony, Total MSD	466	23.5 u	500	93.3	1.0
		Selenium, Total	9.8	1.6	10.0	82.0	1.0
		Selenium, Total MSD	8.6	1.6	10.0	70.0	1.0
		Thallium, Total	39.0	2.9 u	50.0	78.0	1.0
		Thallium, Total MSD	33.1	2.9 u	50.0	66.2	1.0

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INORGANICS ACCURACY REPORT 11/28/94

CLIENT: M&E SPARTON

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SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	MW-52	Vanadium, Total	432	20.1	500	82.4	1.0
		Vanadium, Total MSD	442	20.1	500	84.3	1.0
		Zinc, Total	452	12.2	500	87.9	1.0
		Zinc, Total MSD	455	12.2	500	88.6	1.0

ROY F. WESTON INC.

INORGANICS DUPLICATE SPIKE REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
-001	MW-52	Silver, Total	76.8	79.2	3.1
		Aluminum, Total	81.3	83.1	2.2
		Arsenic, Total	70.5	76.2	7.8
		Barium, Total	80.7	82.5	2.1
		Beryllium, Total	82.6	84.8	2.6
		Calcium, Total	140.1	146.4	4.4
		Cadmium, Total	86.2	85.4	0.93
		Cobalt, Total	79.5	81.2	2.1
		Chromium, Total	83.6	85.2	1.8
		Copper, Total	79.1	80.4	1.6
		Iron, Total	78.5	83.0	5.6
		Potassium, Total	100.8	100.6	0.14
		Magnesium, Total	104.6	107.4	2.7
		Manganese, Total	78.9	80.6	2.1
		Sodium, Total	160.8	167.4	4.0
		Nickel, Total	80.8	82.5	2.0
		Lead, Total	73.5	70.0	4.9
		Antimony, Total	91.3	93.3	2.1
		Selenium, Total	82.0	70.0	15.8
		Thallium, Total	78.0	66.2	16.4
		Vanadium, Total	82.4	84.3	2.2
		Zinc, Total	87.9	88.6	0.88
LCS2	94L1673-LC2	Silver, LCS	90.0	90.4	0.40
		Aluminum, LCS	97.6	98.7	1.1
		Barium, LCS	94.9	96.0	1.2
		Beryllium, LCS	96.4	97.8	1.4
		Calcium, LCS	101.1	102.6	1.5
		Cadmium, LCS	95.6	97.4	1.9
		Cobalt, LCS	97.3	98.6	1.3
		Chromium, LCS	98.2	99.8	1.6
		Copper, LCS	94.4	95.6	1.3
		Iron, LCS	97.7	99.1	1.4
		Potassium, LCS	94.4	96.6	2.3
		Magnesium, LCS	98.8	100.4	1.5
		Manganese, LCS	96.9	97.9	1.0
		Sodium, LCS	94.3	95.9	1.6
		Nickel, LCS	98.2	100.3	2.1
		Antimony, LCS	98.8	99.0	0.17
		Vanadium, LCS	98.9	100.1	1.2
		Zinc, LCS	98.0	99.9	2.0

ROY F. WESTON INC.

INORGANICS DUPLICATE SPIKE REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
LCS2	94L1672-LC2	Arsenic, LCS	94.3	95.7	1.4
		Lead, LCS	94.7	83.0	13.1
		Selenium, LCS	97.0	97.7	0.68
		Thallium, LCS	95.7	91.3	4.6
LCS2	94L1741-LC2	Zinc, LCS	105.0	102.7	2.1

ROY F. WESTON INC.

INORGANICS PRECISION REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	MW-52	Silver, Total	2.0 u	2.0 u	NC	1.0
		Aluminum, Total	40.2	18.1	75.8	1.0
		Arsenic, Total	4.5	5.0	10.5	1.0
		Barium, Total	34.6	43.8	23.5	1.0
		Beryllium, Total	0.40u	0.40u	NC	1.0
		Calcium, Total	27200	37500	31.5	1.0
		Cadmium, Total	2.6 u	2.6 u	NC	1.0
		Cobalt, Total	2.7	2.7 u	NC	1.0
		Chromium, Total	8.0	10.6	28.0	1.0
		Copper, Total	2.6	2.0	26.1	1.0
		Iron, Total	29.8	15.2	64.9	1.0
		Potassium, Total	4790	6480	30.1	1.0
		Magnesium, Total	6700	9170	31.1	1.0
		Manganese, Total	2.6 u	2.6 u	NC	1.0
		Sodium, Total	38600	52900	31.2	1.0
		Nickel, Total	10.3 u	10.3 u	NC	1.0
		Lead, Total	1.0 u	1.0 u	NC	1.0
		Antimony, Total	23.5 u	23.5 u	NC	1.0
		Selenium, Total	1.6	1.6 u	NC	1.0
		Thallium, Total	2.9 u	2.9 u	NC	1.0
		Vanadium, Total	20.1	24.6	20.1	1.0
		Zinc, Total	12.2	13.6	10.9	1.0

ROY F. WESTON INC.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	94L1673-LC1	Silver, LCS	450	500	UG/L	90.0
		Aluminum, LCS	4880	5000	UG/L	97.6
		Barium, LCS	4740	5000	UG/L	94.9
		Beryllium, LCS	241	250	UG/L	96.4
		Calcium, LCS	25300	25000	UG/L	101
		Cadmium, LCS	239	250	UG/L	95.6
		Cobalt, LCS	2430	2500	UG/L	97.3
		Chromium, LCS	491	500	UG/L	98.2
		Copper, LCS	1180	1250	UG/L	94.4
		Iron, LCS	4890	5000	UG/L	97.7
		Potassium, LCS	23600	25000	UG/L	94.4
		Magnesium, LCS	24700	25000	UG/L	98.8
		Manganese, LCS	727	750	UG/L	96.9
		Sodium, LCS	23600	25000	UG/L	94.3
		Nickel, LCS	1960	2000	UG/L	98.2
		Antimony, LCS	2970	3000	UG/L	98.8
		Vanadium, LCS	2470	2500	UG/L	98.9
		Zinc, LCS	980	1000	UG/L	98.0
LCS2	94L1673-LC2	Silver, LCS	452	500	UG/L	90.4
		Aluminum, LCS	4940	5000	UG/L	98.7
		Barium, LCS	4800	5000	UG/L	96.0
		Beryllium, LCS	244	250	UG/L	97.8
		Calcium, LCS	25600	25000	UG/L	103
		Cadmium, LCS	244	250	UG/L	97.4
		Cobalt, LCS	2460	2500	UG/L	98.6
		Chromium, LCS	499	500	UG/L	99.8
		Copper, LCS	1200	1250	UG/L	95.6
		Iron, LCS	4950	5000	UG/L	99.1
		Potassium, LCS	24200	25000	UG/L	96.6
		Magnesium, LCS	25100	25000	UG/L	100
		Manganese, LCS	734	750	UG/L	97.9
		Sodium, LCS	24000	25000	UG/L	95.9
		Nickel, LCS	2010	2000	UG/L	100
		Antimony, LCS	2970	3000	UG/L	99.0
		Vanadium, LCS	2500	2500	UG/L	100
		Zinc, LCS	999	1000	UG/L	99.9
LCS1	94L1672-LC1	Arsenic, LCS	28.3	30.0	UG/L	94.3
		Lead, LCS	28.4	30.0	UG/L	94.7

ROY F. WESTON INC.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/28/94

CLIENT: M&E SPARTON

WESTON BATCH #: 9410L747

WORK ORDER: 03272-036-002-9999-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	94L1672-LC1	Selenium, LCS	29.1	30.0	UG/L	97.0
		Thallium, LCS	28.7	30.0	UG/L	95.7
LCS2	94L1672-LC2	Arsenic, LCS	28.7	30.0	UG/L	95.7
		Lead, LCS	24.9	30.0	UG/L	83.0
		Selenium, LCS	29.3	30.0	UG/L	97.7
		Thallium, LCS	27.4	30.0	UG/L	91.3
LCS1	94L1741-LC1	Zinc, LCS	1050	1000	UG/L	105
LCS2	94L1741-LC2	Zinc, LCS	1030	1000	UG/L	103