UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

Griffin
MAY 17 1988
U.S. EPA CENTRAL
REGIONAL LAB

17 MAY 1988

DATE

SUBJECT Review of Region 5 data for Inland Steel

FROM: Curtis Ross, Director
Region 5 Central Regional Laboratory

To Data User:

Attached are the results for

CRL Data Set Numbers SF 5094
Sample Numbers: 88FB19505/006-R01
Parameter(s) CN
Laboratory CRL

Results Status

(✓) DATA ACCEPTABLE FOR USE*
( ) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements refer to the method capability statement for the methods referenced

Comments by the Quality Control Coordinator.

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below, and return it with any comments to

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE: .....

Comments

DATA SET	SITE	DU/ACT
SF 5094	Inland Steel	Y905/G76100

SAMPLES	PARAMETER(S)
88FB19505/D06 - R01	CN

SAMPLED	RECEIVED	DUE	LAB
5/5/88	5/6/88	5/27/88	CRL

SHIPPED	DATA RECEIVED	CONTRACT
—	N/A	—

TEAM LEADER	SECTION CHIEF	QC COORD	DATA COORD
PP 5/10/88			Ag 5-16-88

Comments By Reviewer

DATA MANAGEMENT COORDINATOR

RECEIVED TRANSMITTED

(X) REVIEWED ( ) UNREVIEWED PP 5/10/88 TEAM LEADER/DATE

( ) REVIEWED ( ) UNREVIEWED SECTION CHIEF/DATE

( ) REVIEWED ( ) UNREVIEWED QC COORDINATOR/DATE

REVIEWED BY CONTRACT COORDINATOR/DATE

RECEIVED 5/16/88 TRANSMITTED 5/17/88 DATA MANAGEMENT COORDINATOR Sylvia Puffer

QC QUALITY CONTROL COORDINATOR

CLERICAL SUPPORT

RECEIVED COMPLETED

OK-PP 5/10/88

ACTIVITY #C 76100

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH SUPER FUND (FIT) SAMPLE DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER V905 DATA SET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINNESOTA PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 76020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
88FB19505	RW1 5-157864		X * K5			
88FB19506	RW2 5-157875		X * K5			
88FB19D06	DUPLICATE 5-157889		X * K5			
88FB19R01	BLANK 5-157896		X * K5			
		* These sample were tested by Auto U.V screening method # 335.3 CRL.				
			5/10/88 H. Phan			

* REGRESSION ANALYSIS * CBC VERSION 2.00 *

NAME OF ANALYST ---: HP
PARAMETER NAME ----: CN
DATE OF ANALYSIS --: 05-09-1988

DATA SET NUMBER ---: 5077/5090/5094
DU NUMBER ---------: B304/Y905

Auto - U.V screening method # 335.3 CRL

DEGREE OF FIT : 1

EQUATION : CONCENTRATION = -3.15609E-01
+6.14618E-01 * SIGNAL

COEFFICIENT OF DETERMINATION : .9975292

T-A-B-L-E O-F S-T-A-N-D-A-R-D-S

STANDARD	SIGNAL	CONCENTRATION	CALCULATED
1	+0.000	+0.000	-0.316
2	+8.500	+5.000	+4.908
3	+16.000	+10.000	+9.518
4	+44.000	+25.000	+26.727
5	+80.500	+50.000	+49.161

T-A-B-L-E O-F S-A-M-P-L-E-S

SAMPLE I.D.	SIGNAL	CONCENTRATION	
BLK	+0.000	-0.316	limit ±5
CS TV=20.0	+35.000	+21.196	limit 20±5
88FB19R01	+0.500	-0.009	
S05	+0.500	-0.009	
S06	+0.500	-0.009	
D06	+0.500	-0.009	
88CD05R01	+0.500	-0.009	
88FB19R02	+0.500	-0.009	
S08	+0.500	-0.009	
S09	+0.500	-0.009	
S10	+0.500	-0.009	
S11	+0.000	-0.316	
D08	+0.000	-0.316	
BLK	+0.000	-0.316	limit ±5
88FB19S05 SPK.	+36.500	+22.117	22.1 - (-.009) = 22.1 limit 20±5
88CD05S01	+48.000	+29.186	needs manually distillation
CS TV=20.0	+37.500	+22.732	limit 20±5
BLK	+0.500	-0.009	limit ±5

U.S. Environmental Protection Agency Region V

Superfund Document Management System (SDMS)

Lab Data Reference Sheet

Please contact the Superfund Records Manager for further information.

I. Unscannable item due to format

___ Graph

✓ Mail receipts

___ Sample tags

II. Image Quality (Pages follow / No. of pages ____)

___ Resolution / Contrast

EN' .RONMENTAL PROTECTION AGENCY
Office of Enforcement

REGION 5
230 South Dearborn Street
Chicago, Illinois 60604

CHAIN OF CUSTODY RECORD

Coder # 210

PROJ. NO.: FOS-8802-033
PROJECT NAME: MN0163 / CWZR 9521
SAMPLERS: (Signature)

Superfund 5094

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Plastic Liter-Metals	1 Plastic Liter-Cyanide					REMARKS OTR	ITR	Low Conc Matrix
RW1	5/5/88	1010		X	RW1	2	1	1					EX961	88FB19505	Res well
RW2	5/5/88	1030		X	RW2	2	1	1					EX 963	88FB19506	Res well
~~RW3~~	~~5/5/88~~	~~1100~~		~~X~~	~~RW3~~	~~2~~	~~1~~	~~1~~					EX 964	~~88FB19507~~	Res well
RW4	5/5/88	1030		X	RW4	2	1	1					EX 965	88FB19D	Res well
RWB	5/5/88	1000		X	Blank	2	1	1					EX 966	88FBQR01	Res well

Lot # 1 Liter Plastic C8067014
1 Liter Amber H8109214
120 mL B7273111

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	5/5/88 1430	[signature]			
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)

Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks
		[signature]	5/6/88 12:45pm	Shipped Federal Express To CRL Airbill # 5060108723 Custody Seal #'s 10955, 10956

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5- 07227

ACTIVITY #C 76100

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: MINERALS - NUTRIENTS

DIVISION/BRANCH SUPER FUND (FIT) SAMPLE DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y905 DATA SET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINNESOTA PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	WATER PHENOLICS UG PHENOL/L MIN 74818	WATER CYANIDE UG CN/L MIN 74919	WATER GROSS ALPHA P CI/L MIN 75020	WATER CR^{+6} UG CR^{+6}/L MIN 74616	WATER MERCURY UG HG/L MIN 74717
88FB19505	RW1 5-157864		X			
88FB19506	RW2 5-157875		X			
88FB19006	DUPLICATE 5-157889		X			
88FB19R01	BLANK 5-157896		X			

ACTIVITY# C76100

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND (FIT) SAMPLE DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y905 DATA SET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINN. PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
88FB19S05	RW1 5-157863	X	X	X	X	X	X
88FB19S06	RW2 5-157876	X	X	X	X	X	X
88FB19D06	DUPLICATE 5-157890	X	X	X	X	X	X
88FB19R01	BLANK 5-157897	X	X	X	X	X	X

ACTIVITY#C76100

(9)

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND (FIT) SAMPLING DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y905 DATASET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINNESOTA PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	MATRIX WATER TEST CADMIUM (CD) UNITS UG/L ME1235826
88FB14		
S05	RW1 5-157863	X
S06	RW2 5-157876	X
D06	DUPLICATE 5-157840	X
R01	BLANK 5-157847	X

CRL V.2: 3/85

ENVIRONMENTAL PROTECTION AGENCY
Office of Enforcement

[redacted]

Cooler # 10

[redacted]

PROJ. NO.	PROJECT NAME
CO5-4852-033	MN0163 / CWDR 9521 / 3758E

SAMPLERS: (Signature)

Supervisor [redacted] 5094

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	1 Plastic Liter Matrix	1 Plastic Liter Cyanide					REMARKS OTR	ITR	Low Conc Matrix
RW1	5/5/88	1010		X	RW1	2	1	1					EX 961	88FB19505	Res well
RW2	5/5/88	1030		X	RW2	2	1	1					EX 963	88FB19506	Res well
RW3	5/5/88	1100		X	RW3	2	1	1					EX 964	88FB19507	Res well
RW4	5/5/88	1130		X	RW4	2	1	1					EX 965	88FB19[illegible]	Res well
RWB	5/5/88	1010		X	Blank	2	1	1					EX 966	88FB19801	Res well

Lot # 1 Liter Plastic C8067214
1 Liter Amber H8109214
120 mL 37273111

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
[signature]	5/5/88 1430				
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Shipped Federal Express To CPL Airbill # 5060108723 Custody Seal # 10955, 10956	

Distribution: White — Accompanies Shipment; Pink — Coordinator Field Files; Yellow — Laboratory File

5. 07997

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

DATE: 27 MAY 1988

SUBJECT: **Review of Region 5 data for** Inland Steel

FROM: **Curtis Ross, Director** CR
Region 5 Central Regional Laboratory

To: **Data User:**

Attached are the results for:

CRL Data Set Numbers: SF 5094
Sample Numbers: 88FB19S05-R01
Parameter(s): ICP
Laboratory: CRL

Results Status

(X) **DATA ACCEPTABLE FOR USE***
( ) **DATA QUALIFIED AS TO USE**
( ) **DATA UNACCEPTABLE FOR USE**

* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE: .....
Comments:

cc: Contractor's Reprentative **Filed by/date:**

DATA SET	SITE	DU/ACT
SF 5094	Inland Steel St. Paul	Y905/C761ZZ

SAMPLES	PARAMETER(S)
88FB19505, S06, D06, R01	ICP

SAMPLED	RECEIVED	DUE	LAB
5 May 88	6 May 88	27 May 88	CRL

SHIPPED	DATA RECEIVED	CONTRACT
NA	→	

TEAM LEADER	SECTION CHIEF	QC COORD	DATA COORD
JVM 26 May 88			jg 5-27-88

Comments By Reviewer: Ti not reported due to contamination of acid. Cd reported by GFAA.

DATA MANAGEMENT COORDINATOR

RECEIVED	TRANSMITTED		CLERICAL SUPPORT RECEIVED	COMPLETED
(X) REVIEWED	( ) UNREVIEWED	TEAM LEADER/DATE	[signature] 26 May 88	
( ) REVIEWED	( ) UNREVIEWED	SECTION CHIEF/DATE		
( ) REVIEWED	( ) UNREVIEWED	QC COORDINATOR/DATE		

REVIEWED BY CONTRACT COORDINATOR/DATE

RECEIVED	TRANSMITTED	DATA MANAGEMENT COORDINATOR
5-27-88	5-27-88	[signature]

CC: QUALITY CONTROL COORDINATOR

Jm 26 May 86

Y905/C761ZZ
ETFA05WUZZ

DATA SET : SF5094 Inland Steel St. Paul

ELEMENT		FB19R01		FB19S05		FB19S06		FB19D06
AG	µg/l	< 6.00	<	6.00	<	6.00	<	6.00
AL		< 80.0	<	80.0	<	80.0	<	80.0
B		< 80.0		87.6	<	80.0	<	80.0
BA		< 6.		22.		159.		159.
BE		< 1.00	<	1.00	<	1.00	<	1.00
~~CD~~		~~< 10.0~~	~~<~~	~~10.0~~	~~<~~	~~10.0~~	~~<~~	10.0 Jm
CO		< 6.00	<	6.00	<	6.00	<	6.00
CR		< 8.00	<	8.00	<	8.00	<	8.00
CU		< 6.00	<	6.00		6.57		6.88
FE		< 80.		538.		508.		522.
LI		< 10.0		13.1		10.5		10.5
MN		< 5.		283.		568.		566.
MO		< 15.0	<	15.0	<	15.0	<	15.0
NI		< 15.0	<	15.0	<	15.0	<	15.0
SN		< 40.0	<	40.0	<	40.0	<	40.0
SR		< 10.		255.		123.		123.
~~TI~~		~~76.3~~		~~77.3~~		~~76.7~~		~~77.0~~ Jm
V		< 5.00	<	5.00	<	5.00	<	5.00
Y		< 5.00	<	5.00	<	5.00	<	5.00
ZN		< 40.0	<	40.0	<	40.0	<	40.0
CA	mg/l	< 0.5						
CA				88.5		45.2		45.1
K		< 5.00	<	5.00	<	5.00	<	5.00
MG		< 0.1		34.6		15.7		15.7
NA		< 1.00		8.80		7.22		7.20

RN617A

Run No. ~~615~~ 617

Prep. by RVP RAP Date 5.18.88 Analyzed by Date.

Beaker No.	Data Set	Sample	Notes	Pos.	Beaker No	Data Set	Sample	Notes
1	CDO 5059	88CW08 S01		5	26	SF 5077	88 F B19 S08	redone w/ balloon vessel DUPL
2		S03	station #1	8	27	/ /	/	
3		R01	~~Zn TO~~	13	28			
4	SF 5077	88 FB19 S08	Sample top	22	29	CDO 5059	CW08 R01	undigested run w/ CW119 R01
5		S09		12	30	SF 5077	FB19 R02	undigested FB119 R02
6		D08		6	31	CDO 5109	CH09 R01	undigested CH119 R01
7		S10		9	32	CDO 5109	dissolved Fe tag CH09 R01	undigested DS119 R01
8		S11		27	33	SF 5077	88 FB19 R02	bottle (9) dupl to confirm C
9		R02	Zn 45 Ti 32	23	34		Ten 2 + Ag	
10		S10	DUPL	25	35		Ten 3 + Ca	
11		S11	SPK	4	36			
12			BLANK	7	37			
13	CDO 5090	88CD05 S01		2	38			
14		R01		11	39			
15	SF 5094	88FB19 S05		28	40			
16		S06		16	41			
17		D06		26	42			
18		R01		1	43			
19	CDO5109	88CH09 S01		17	44			
20		R01		3	45			
21		S01	DUPL	20	46			
22		S01	SPIKE	15	47			
23	~~CDO~~		BLANK	24	48			
24	CDO5109	DS 88CH09 S01	dissolved Fe	10	49			
25		DS R01	dissolved Fe	14	50			

DM 28 May 88

DATA SET : METALS

ELEMENT		DET LIM	Initial BLANK05	BLANK06	BLANK07
Units: µg/l except where noted					
AG		6.00	1.620	2.23	-0.842
AL		80.0	35.8	13.8	1.94
B		80.0	1.29	-3.59	-2.91
BA		6.00	0.611	0.764	-0.153
BE		1.00	0.195	0.091	0.050
CD		10.0	0.04	0.20	1.43
CO		6.00	-0.50	1.80	1.59
CR		8.00	-4.76	-3.33	-1.66
CU		6.00	1.86	1.85	1.01
FE		80.0	38.8	-0.784	0.250
LI		10.0	0.05	0.20	1.24
MN		5.00	0.459	0.192	0.036
MO		15.0	2.16	-0.24	3.90
NI		15.0	-1.55	3.23	1.81
PB		70.0	-3.26	17.50	7.65
SN		40.0	-19.6	-13.4	-15.5
SR		10.0	0.173	0.028	0.201
TI		25.0	0.963	0.445	0.744
V		5.00	2.31	1.22	0.107
Y		5.00	0.222	0.495	-0.393
ZN		40.0	13.4	-1.32	-1.39
CA	mg/l	0.500	0.012	0.002	0.006
K	↓	5.00	-0.23	-1.14	-1.40
MG		0.100	-0.001	0.001	0.002
NA		1.00	0.021	0.010	0.036

All blank values fall below detection limits.

RP 5.23.88

JM 26May87

DATA SET : METALS

ELEMENT	DET LIM	BLANK08	BLANK09
AG	6.	1.	1.
AL	80.	10.	15.
AS			
B	80.0	-1.3	35.4
BA	6.0	0.1	0.8
BE	1.00	0.085	4.39 *
CD	10.0	0.7	4.4
CO	6.	1.	0.
CR	8.	-5.	-4.
CU	6.00	1.65	5.40
FE	80.0	2.4	2.3
LI	10.	2.	2.
MN	5.00	0.27	4.25
MO	15.	3.	3.
NI	15.0	4.4	7.4
PB	70.	-0.	25.
SN	40.	4.	-16.
SR	10.	0.	1.
TI	25.0	1.25	0.82
V	5.	1.	5.
Y	5.	-0.	1.
ZN	40.0	-1.26	3.94
CA mg/L	0.500	0.008	0.008
K	5.00	-0.98	-1.60
MG	0.10	0.00	0.00
NA	1.0	0.1	0.1

All blank values fall below detection limits.

RJ 5.28.88

JV 26 May 86

DATA SET : DIGESTION BLANK

ELEMENT	DET LIM	BLANK12	
Units: µg/l except where noted.			
AG	6.00	-1.95	
AL	80.0	0.060	
B	80.0	-6.23	
BA	6.00	0.186	
BE	1.00	-0.255	
CD	10.0	-1.82	
CO	6.00	-0.194	
CR	8.00	-0.464	
CU	6.00	-0.899	
FE	80.0	11.0	
LI	10.0	-2.36	
MN	5.00	-0.273	
MO	15.0	2.16	
NI	15.0	4.09	
PB	70.0	13.3	
SN	40.0	-10.7	
SR	10.0	0.769	
TI	25.0	72.6	*
V	5.00	-2.35	
Y	5.00	-0.208	
ZN	40.0	0.968	
CA	0.500	0.270	
K	5.00	-2.85	
MG	0.100	0.047	
NA	1.00	-0.068	

mg/l

* Titanium value is above detection limits.
Remaining elements' blank values are below detection limits

5.23.86

Jw
verify

DATA SET : DIGESTION BLANK

ELEMENT	DET LIM	BLANK23	
Units: µg/l except where noted.			
AG	6.00	2.87	
AL	80.0	31.1	
B	80.0	-6.57	
BA	6.00	2.61	
BE	1.00	-0.072	
CD	10.0	-0.413	
CO	6.00	1.40	
CR	8.00	-2.67	
CU	6.00	3.32	
FE	80.0	11.6	
LI	10.0	-1.27	
MN	5.00	-0.194	
MO	15.0	-0.905	
NI	15.0	5.51	
PB	70.0	53.4	
SN	40.0	1.51	
SR	10.0	0.313	
TI	25.0	74.1	*
V	5.00	6.09	*
Y	5.00	0.271	
ZN	40.0	1.95	
CA mg/l	0.500	0.135	
K	5.00	-2.74	
MG	0.100	0.023	
NA	1.00	-0.042	

* Titanium and vanadium blank results are above detection limits. The remaining elements are less than detection limits.

BP 5-23-80

26 May 86

DL1:[001,054]RN617A.BRN 21-MAY-86 17:55:54 PAGE 1

DATA SET : METALS SAMPLE ID : AQC0865 Initial AQC

ELEMENT	TRUE	MEASURED	% DEV
Units mg/l except where noted.			
AL	4750	4770	0.496
AS	826	821	-0.621
B	1080	1090	1.45
BA	1520	1540	0.891
BE	745	759	1.83
CD	430	434	0.977
CO	992	990	-0.237
CR	1590	1510	-4.92
CU	1190	1200	0.711
FE	3860	3860	0.062
LI	818	824	0.744
MN	1360	1360	0.207
MO	809	795	-1.74
NI	1210	1190	-1.22
PB	2890	2860	-0.700
SN	2420	2380	-1.69
SR	903	915	1.34
TI	1240	1240	-0.428
V	750	772	3.01
Y	792	783	-1.10
ZN	2850	2880	0.956
CA mg/l	13.4	13.0	-3.01
K	97.6	99.6	2.02
MG	5.2	5.17	-1.50
NA	18.3	18.9	3.28

All values fall within ±5% difference.

5.23.88

DATA SET : METALS SAMPLE ID : AQC0866

ELEMENT	TRUE	MEASURED	% DEV
AL	4750	4780	0.668
AS	826	832	0.760
B	1080	1090	1.51
BA	1520	1550	1.88
BE	745	765	2.61
CD	430	439	2.19
CO	992	995	0.295
CR	1590	1540	-3.54
CU	1190	1210	0.984
FE	3860	3870	0.259
LI	818	829	1.32
MN	1360	1370	0.838
MO	809	799	-1.25
NI	1210	1200	-0.363
PB	2890	2840	-1.41
SN	2420	2440	0.956
SR	903	925	2.43
TI	1240	1250	0.777
V	750	776	3.44
Y	792	788	-0.475
ZN	2850	2910	2.05
CA mg/l	13.4	13.1	-2.32
K	97.6	95.8	-1.86
MG	5.25	5.18	-1.28
NA	18.3	19.0	3.87

All values fall within ± 10% difference.

DL1:[001,054]RN617A.BRN 21-MAY-86 17:58:21 PAGE 3

DATA SET : METALS SAMPLE ID : AQC0867

ELEMENT	TRUE	MEASURED	% DEV
AL	4750	4910	3.26
B	1080	1120	3.87
BA	1520	1590	4.22
BE	745	778	4.33
CD	430	451	5.06
CO	992	1010	1.80
CR	1590	1570	-1.45
CU	1190	1230	2.82
FE	3860	3940	2.09
LI	818	863.	5.44
MN	1360	1390	2.29
MO	809	813.	0.512
NI	1210	1230	1.74
PB	2890	2940	1.73
SN	2420	2510	3.94
SR	903	946.	4.69
TI	1240	1280	2.86
V	750	788.	5.12
Y	792	802.	1.36
ZN	2850	2980	4.28
CA	13.4	13.4	-0.486
K	97.6	98.1	0.549
MG	5.25	5.26	0.251
NA	18.3	19.4	6.11

All values fall within ±10% difference.

DATA SET : METALS SAMPLE ID : AQC0868

ELEMENT	TRUE	MEASURED	% DEV
AL	4750	4890	2.99
B	1080	1120	3.89
BA	1520	1580	3.58
BE	745	775	4.03
CD	430	455	5.90
CO	992	1020	2.43
CR	1590	1580	-0.922
CU	1190	1220	2.43
FE	3860	3940	2.10
LI	818	867	5.99
MN	1360	1390	2.25
MO	809	814	0.609
NI	1210	1230	1.95
PB	2890	2930	1.52
SN	2420	2560	5.71
SR	903	941	4.17
TI	1240	1280	2.57
V	750	790	5.34
Y	792	801	1.12
ZN	2850	2980	4.45
CA mg/l	13.4	13.3	-1.02
K	97.600	98.200	0.588
MG	5.250	5.270	0.422
NA	18.30	19.40	6.39

All values are within ±10% difference.

5.23.86

Jm
26 May 86

DATA SET : METALS SAMPLE ID : AQC0869 final

units µg/l except where noted

ELEMENT	TRUE	MEASURED	% DEV
AL	4750	4840	1.85
B	1080	1120	3.83
BA	1520	1560	2.38
BE	745	768	3.05
CD	430	452	5.13
CO	992	1010	1.69
CR	1590	1560	-1.79
CU	1190	1210	1.38
FE	3860	3910	1.19
LI	818	846	3.37
MN	1360	1380	1.39
MO	809	809	-0.029
NI	1210	1230	2.10
PB	2890	2950	2.20
SN	2420	2580	6.56
SR	903	930	2.97
TI	1240	1270	1.76
V	750	785	4.69
Y	792	794	0.317
ZN	2850	2970	3.96
CA mg/l	13.4	13.1	-2.19
K	97.6	96.5	-1.10
MG	5.25	5.23	-0.314
NA	18.3	19.0	4.15

All values fall within ±10% difference.

5.23.86

DL1:[001,054]RN617A.BRN 21-MAY-86 18:04:30

DATA SET : METALS SAMPLE ID : SILVERO

ELEMENT		TRUE	MEASURED	% DEV	
AG		49.500	49.100	-0.741	
AG		49.50	51.50	4.16	
AG		49.50	47.60	-3.88	
AG		49.50	47.00	-5.06	
AG	✓	49.50	47.90	-3.18	final

Initial QC within 5% difference; others within 10% difference.

JVM 28May88

DATA SET : CHECK

ELEMENT	DET LIM	initial HIGHAQC	final HIGHAQC
units ug/l except where noted -			
AG	6.00	-1.66	-5.28
B	80.0	6.02	9.15
BA	6.00	0.917	0.122
BE	1.00	-1.85	-2.18
CD	10.0	-0.144	-0.397
CO	6.00	2.18	-2.34
CR	8.0	-0.2	-10.4
CU	6.00	-3.18	-4.16
LI	10.0	7.46	9.58
MN	5.0	10.5	10.9
MO	15.0	9.21	-2.02
NI	15.0	2.320	0.257
PB	70.0	-29.7	-45.0
SN	40.0	-10.5	-16.7
SR	10.0	1.62	2.00
TI	25.0	7.24	8.39
V	5.00	6.24	5.61
Y	5.00	0.853	-0.051
CA (mg/l)	0.5	94.5	96.0
K	5.00	-1.93	-2.72
MG	0.1	61.5	61.8
NA	1.00	-0.145	-0.116
AL	20.0	90.3	92.1
FE	20.0	89.5	90.7
ZN	20.0	92.2	94.4

BP 5-23-88

21-MAY-86 18:03:16

DL1:[001,054]RN617A.BRN

SAMPLE ID : INTCHKI

DATA SET : METALS

ELEMENT	TRUE	MEASURED	% DEV
AG	50.	-14.	-128.
AS	826.	-192.	-123.
B	1080	20.3	-98.1
BA	1520	2.8	-99.8
BE	745.	-12.	-102.
CD	430.	2.9	-99.3
CO	992.	-3.	-100.
CR	1590	-4.	-100.
CU	1190	-10.	-101.
LI	818	25.1	-96.9
MN	1360	47.9	-96.5
MO	809	24.7	-96.9
NI	1210	8.5	-99.3
PB	2890	-124.	-104.
SN	2420	17.8	-99.3
SR	903	7.4	-99.2
TI	1240	39.2	-96.8
V	750	26.8	-96.4
Y	792	1.2	-99.8
CA	13.	445.	3210.
K	98.	-2.	-103.
MG	5.	68.	1180.
NA	18.	-0.	-100.
AL	5.	453.	9400.
FE	4.	420.	9710.
ZN	3.	451.	16200.

mg/l

JW 21 May 86

DATA SET : METALS SAMPLE ID : INTCHKF

ELEMENT	TRUE	MEASURED	% DEV
Units: µg/L except as noted			
AG	50.	-14.	-128.
B	1080	25.3	-97.6
BA	1520	3.9	-99.7
BE	745.	-12.	-102.
CD	430	2.2	-99.5
CO	992	1.4	-99.9
CR	1590	-2.	-100.
CU	1190	-8.	-101.
LI	818	27.0	-96.7
MN	1360	48.7	-96.4
MO	809	33.0	-95.9
NI	1210	11.7	-99.0
PB	2890	-98.	-103.
SN	2420	14.9	-99.4
SR	903	8.1	-99.1
TI	1240	41.2	-96.7
V	750	30.7	-95.9
Y	792	1.7	-99.8
CA mg/l	13.	452.	3260.
K	98.	-3.	-103.
MG	5.	68.	1190.
NA	18.	-0.	-100.
AL	5.	459.	9530.
FE	4.	425.	9830.
ZN	3.	459.	16500.

RJP 5.23.86

JM
26 May 86

DL1:[001,054]RN617A.BRN 21-MAY-86 18:16:10 PAGE 1

DATA SET : CD05109 SAMPLE ID : CH09S01
Survey: Gary POTW

ELEMENT		SAMPLE	DUPLICATE	AVERAGE	R P D	detection limit control
AG	µg/l	1.	-1.	-0.	-4010	
AL		-8.2	-6.8	-7.5	-19.3	
B		205.	201.	203.	2.19	
BA		34.6	33.7	34.2	2.73	
BE		-0.20	-0.20	-0.20	-1.68	
CD		2.4	4.2	3.3	55.6	
CO		2.	-0.	1.	232.	
CR		1.	7.	4.	155.	
CU		20.7	19.4	20.0	6.71	
FE		768.	765.	767.	0.407	
LI		9.75	9.62	9.69	1.33	
MN		168.	166.	167.	1.12	
MO		7.	2.	5.	105.	
NI		10.7	6.6	8.7	47.3	
PB		129.	123.	126.	5.29	
SN		-26.5	-11.2	-18.8	-81.4	
SR		175.	174.	174.	0.217	
TI		76.3	74.8	75.6	2.00	
V		3.	1.	2.	124.	
Y		0.	-0.	0.	263.	
ZN		47.1	53.1	50.1	12.0	40
				55.8	0.231	
CA	mg/l	62.3	61.4	61.8	1.41	
K		3.0	2.2	2.6	31.8	2
MG		18.2	18.0	18.1	1.27	
NA		66.9	67.1	67.0	0.237	

All duplicate results are < 10 RPD or less than detection limits.

6.03.86

JM 26 May 86

Y905 / C73127
STT A05 N2 Z2

~~DATA SET~~ : ~~SF5077~~ SAMPLE ID : FB19S10
Energy Resources (Inland Steel)

ELEMENT	SAMPLE	DUPLICATE	AVERAGE	R P D
Units: µg/l except where noted.				
AG	-2.8	-2.2	-2.5	-22.8
AL	-105.	-96.6	-101.	-7.86
B	8.4	4.7	6.6	57.2
BA	46.2	47.0	46.6	1.65
BE	-0.5	-0.3	-0.4	-54.7
CD	0.	-1.	-0.	-321.
CO	-3.	-0.	-2.	-172.
CR	-2.	1.	-1.	-642.
CU	31.4	34.6	33.0	9.70
FE	6940	6910	6930	0.535
LI	8.7	9.8	9.2	11.8
MN	2140	2120	2130	1.11
MO	3.1	1.9	2.5	49.4
NI	1.	8.	5.	145.
PB	-11.8	-7.1	-9.5	-49.1
SN	-8.12	-7.36	-7.74	-9.89
SR	114.	114.	114.	0.053
TI	74.6	74.4	74.5	0.202
V	-0.7	-0.3	-0.5	-90.8
Y	-1.	0.	-0.	-291.
ZN	9.1	18.1	13.6	66.7
CA (mg/l)	44.3	43.8	44.0	1.09
K	-1.1	-0.9	-1.0	-17.9
MG	14.1	13.9	14.0	1.27
NA	3.41	3.52	3.47	3.07

All results are less than 10 RPD or less than, the magnitude of the detection limit.

RW 5-23-88

Inorganics

3304/82 007

DL1:[001,054]RN617A.BRN 21-MAY-86 18:31:21 PAGE 1

DATA SET : CD05109 SAMPLE ID : CH09S01

Survey: Gary POTW

ELEMENT	SAMPLE	SPIKE	SPIKE ADDED	% RECOVERY
Units: mg/l except where noted.				
AG	0.5	45.9	50.0	90.8
AL	-8.2	690.	800.	87.3
B	205.	1010	800.	101.
BA	35.	237.	200.	101.
BE	-0.	10.	10.	100.
CD	2.4	26.8	25.0	97.9
CO	2.0	97.0	100.	95.0
CR	1.	133.	100.	132.
CU	21.	71.	50.	101.
FE	768.	1660	800.	112.
LI	9.8	63.6	54.0	99.8
MN	168.	268.	100.	99.7
MO	7.	112.	100.	105.
NI	11.	170.	150.	107.
PB	129.	975.	800.	106.
SN	-26.5	372.	400.	99.7
SR	175.	1210	1000	104.
TI	76.3	176.	100.	99.5
V	3.4	51.8	50.0	97.0
Y	0.5	50.2	50.0	99.4
ZN	47.1	445.	400.	99.4
CA mg/l	62.3	109.	50.0	92.9
K	3.0	22.0	20.0	95.2
MG	18.2	42.1	25.0	95.4
NA	67.	119.	50.	104.

All spike recoveries are within 85-115 % control.

5.23.86

JM 26 May 86

YOC/C 76'ZZ
ETMAOS'1'ZZ

DATA SET : SF5077 SAMPLE ID : FB19S11

Spiking Iron and Chromium

ELEMENT (units: mg/l except where noted)	SAMPLE	SPIKE	SPIKE ADDED	% RECOVERY	
AG	5.9	44.7	50.0	77.6	*
AL	3.5	681.	800.	84.6	*
B	8.0	805.	800.	99.7	
BA	14.	215.	200.	100.	
BE	-0.	10.	10.	101.	
CD	0.7	21.4	25.0	83.0	*
CO	4.2	95.4	100.	91.2	
CR	-0.1	95.0	100.	95.0	
CU	8.9	52.4	50.0	87.0	
FE	75.5	812.	800.	92.0	
LI	3.	61.	54.	108.	
MN	1.9	100.	100.	98.5	
MO	9.8	96.3	100.	86.6	
NI	12.4	152.	150.	93.4	
PB	45.	899.	800.	107.	
SN	-3.1	374.	400.	94.2	
SR	59.	1110	1000	106.	
TI	73.	176.	100.	103.	
V	8.0	51.4	50.0	87.0	
Y	1.0	50.5	50.0	99.1	
ZN	6.6	404.	400.	99.5	
CA (mg/l)	18.1				
CA		62.1	50.0	88.	
K	-1.6	17.2	20.0	93.9	
MG	7.7	30.8	25.0	92.4	
NA	4.1	53.6	50.0	99.1	

Silver, aluminum and cadmium are outside 85-115% recovery limits.
The remaining elements' spikes are within control.

RP 5.23.86

B305/B25016

DL1:[001,054]RN617A.BRN 21-MAY-86 18:37:41 PAGE 1

DATA SET : CD05059 ‡ Accutronics

ELEMENT		CW08S01		CW08R01		CW08S03		UNDIGESTED † CW08R01
AG	µg/l	< 6.00	<	6.00	<	6.00	<	6.00
AL		100.	<	80.0	<	80.0	<	80.0
B		431.	<	80.0		94.5	<	80.0
BA		170.		10.5		119.		11.9
BE		< 1.00	<	1.00	<	1.00	<	1.00
CD		< 10.0	<	10.0	<	10.0	<	10.0
CO		< 6.00	<	6.00	<	6.00	<	6.00
CR		< 8.00	<	8.00	<	8.00	<	8.00
CU		322.	<	6.00		151.	<	6.00
FE		525.	<	80.0		666.	<	80.0
LI		11.5	<	10.0		11.5	<	10.0
MN		9.72	<	5.00		18.4	<	5.00
MO		< 15.0	<	15.0	<	15.0	<	15.0
NI		2810	<	15.0	<	15.0	<	15.0
PB		82.9	<	70.0	<	70.0	<	70.0
SN		< 40.0	<	40.0	<	40.0	<	40.0
SR		373.	<	10.0		485.	<	10.0
TI		75.4		71.4		74.4	<	25.0
V		7.82	<	5.00	<	5.00	<	5.00
Y		< 5.00	<	5.00	<	5.00	<	5.00
ZN		279.	<	40.0		54.3	<	40.0
CA	mg/l			0.651			<	0.500
CA		78.2				81.4		
K		< 5.00	<	5.00	<	5.00	<	5.00
MG		40.20	<	0.100		43.6	<	0.100
NA		18.60	<	1.00		18.5	<	1.00

† Undigested CW08R01 was run to check barium contamination in the digested sample. Both are corrected for added acid. The undigested sample shows Ba-present above the detection limit.

‡ The following samples were below detection limits for the element mentioned in the uncorrected result. The raised detection limit and corrected result is also given:

CW08S01 Li <13 ; Pb <86
CW08R01 Ca <0.7
CW08S03 B <98 ; Li <13

RLP 5-23-86

Jim 16 May 86

B304/ 335017

DATA SET : CD05090 † Roadmaster Corp.

ELEMENT		CD05S01		CD05R01
AG	µg/l	< 6.00	<	6.00
AL		323.	<	80.0
B		3840	<	80.0
BA		22.7		6.08
BE		< 1.00	<	1.00
CD		< 10.0	<	10.0
CO		< 6.00	<	6.00
CR		634.	<	8.00
CU		61.2	<	6.00
FE		1960	<	80.0
LI		27.7	<	10.0
MN		40.0	<	5.00
MO		450.	<	15.0
NI		107.	<	15.0
PB		86.1	<	70.0
SN		41.3	<	40.0
SR		37.6	<	10.0
TI		143.		73.9
V		< 5.00	<	5.00
Y		< 5.00	<	5.00
ZN		1240	<	40.0
CA	mg/l		<	0.500
CA		56.9		
K		86.5	<	5.00
MG		11.8	<	0.100
NA		626.	<	1.00

† The following samples were below detection limits for the element listed in the uncorrected results. The raised detection limit and corrected result is also given:

CD05S01 Sn <49

CD05R01 Ba < 8.

RCP 5.23.88

3304/821007

DATA SET : CD05109

ELEMENT		CH09S01		CH09R01				"CH09S01 dissolved Fe"
AG	<	6.00	<	6.00	<	6.00	<	6.00
AL	<	80.	<	80.	<	80.		186.
B		205.	<	80.	<	80.		251.
BA		34.6		14.1		11.9		42.4
BE	<	1.00	<	1.00	<	1.00	<	1.00
CD	<	10.0	<	10.0	<	10.0	<	10.0
CO	<	6.00	<	6.00	<	6.00	<	6.00
CR	<	8.0	<	8.0	<	8.0		18.6
CU		20.7	<	6.0	<	6.0		22.3
FE		768.	<	80.	<	80.		1970
LI	<	10.0	<	10.0	<	10.0	<	10.0
MN		168.	<	5.	<	5.		176.
MO	<	15.0	<	15.0	<	15.0	<	15.0
NI	<	15.0	<	15.0	<	15.0	<	15.0
PB		129.		94.2		91.7		78.0
SN	<	40.0	<	40.0	<	40.0	<	40.0
SR		175.	<	10.	<	10.		170.
TI		76.3		72.0	<	25.0		75.1
V	<	5.00	<	5.00	<	5.00	<	5.00
Y	<	5.00	<	5.00	<	5.00	<	5.00
ZN		47.1	<	40.0	<	40.0		75.0
CA	mg/l			0.7	<	0.5		
CA		62.3						59.8
K	<	5.00	<	5.00	<	5.00	<	5.00
MG		18.2	<	0.1	<	0.1		17.6
NA		66.9	<	1.0	<	1.0		64.8

† Undigested CH09R01 was run to check lead contamination in the digested sample. Both values are corrected for added acid. The undigested result also shows Pb present above the detection limit.

‡ The second CH09S01 listed is the sample bottle with the tag labelled "dissolved Fe." This sample also had Pb below the detection limit in the uncorrected sample. The raised detection limit and corrected result is < 85 µg/l.

3304/321007

DATA SET : CD05109 Gary POTW

ELEMENT			CH09R01 dissolved Fe †,α		UNDIGESTED CH09R01 dissolved Fe ‡
AG	µg/l	<	6.00	<	6.00
AL			158.		159.
B			104.		104.
BA			12.9		11.6
BE		<	1.00	<	1.00
CD		<	10.0	<	10.0
CO		<	6.00	<	6.00
CR			21.7		20.0
CU			15.3		12.1
FE			95.4	<	80.0
LI		<	10.0	<	10.0
MN		<	5.00	<	5.00
MO		<	15.0	<	15.0
NI		<	15.0	<	15.0
PB			89.		103.
SN		<	40.0	<	40.0
SR		<	10.0	<	10.0
TI			74.6	<	25.0
V		<	5.00	<	5.00
Y		<	5.00	<	5.00
ZN			1410		1500
CA	mg/l		1.23		1.09
K		<	5.00	<	5.00
MG			0.233		0.216
NA			1.40		1.35

† This second CH09R01 is the result for the sample from the bottle with the tag labelled "dissolved Fe."

‡ Undigested CH09R01 "dissolved Fe" was run to check for Fe contamination in the digested sample. The undigested sample shows Fe below detection limits. See note α.

α Sample CH09R01 "dissolved Fe" has Fe below detection limits in the uncorrected sample. The raised detection limit and corrected result is <86 µg Fe/l.

JM
Dunn

Y005/C961ZZ
STFA05WHZZ

DATA SET : SF5077 Iroquois

ELEMENT		FB19S10	FB19S11	Undigested † FB19R02
AG	µg/l	< 6.00	< 6.00	< 6.00
AL		< 80.0	< 80.0	< 80.0
B		< 80.0	< 80.0	< 80.0
BA		46.2	14.1	< 6.00
BE		< 1.00	< 1.00	< 1.00
CD		< 10.0	< 10.0	< 10.0
CO		< 6.00	< 6.00	< 6.00
CR		< 8.00	< 8.00	< 8.00
CU		31.4	8.88	< 6.00
FE		6940	< 80.0	< 80.0
LI		< 10.0	< 10.0	< 10.0
MN		2140	< 5.00	< 5.00
MO		< 15.0	< 15.0	< 15.0
NI		< 15.0	< 15.0	< 15.0
SN		< 40.0	< 40.0	< 40.0
SR		114.	58.9	< 10.0
TI		74.6	73.1	< 25.0
V		< 5.00	7.96	< 5.00
Y		< 5.00	< 5.00	< 5.00
ZN		< 40.0	< 40.0	< 40.0
CA	mg/l		18.1	< 0.500
CA		44.3		
K		< 5.00	< 5.00	< 5.00
MG		14.1	7.74	< 0.100
NA		3.41	4.08	< 1.00

† Undigested FB19R02 was run to check copper contamination in the digested sample. The undigested sample shows Cu BELOW detection limits.

RVP
5-23-88

W
Jenny M

Y905/C761ZZ
STFA05WUZZ

DATA SET : SF5094 † Inland Steel St. Paul

ELEMENT		FB19R01	FB19S05	FB19S06	FB19D06
AG	µg/l	< 6.00	< 6.00	< 6.00	< 6.00
AL		< 80.0	< 80.0	< 80.0	< 80.0
B		< 80.0	87.6	< 80.0	< 80.0
BA		< 6.	22.	159.	159.
BE		< 1.00	< 1.00	< 1.00	< 1.00
CD		< 10.0	< 10.0	< 10.0	< 10.0
CO		< 6.00	< 6.00	< 6.00	< 6.00
CR		< 8.00	< 8.00	< 8.00	< 8.00
CU		< 6.00	< 6.00	6.57	6.88
FE		< 80.	538.	508.	522.
LI		< 10.0	13.1	10.5	10.5
MN		< 5.	283.	568.	566.
MO		< 15.0	< 15.0	< 15.0	< 15.0
NI		< 15.0	< 15.0	< 15.0	< 15.0
SN		< 40.0	< 40.0	< 40.0	< 40.0
SR		< 10.	255.	123.	123.
TI		76.3	77.3	76.7	77.0
V		< 5.00	< 5.00	< 5.00	< 5.00
Y		< 5.00	< 5.00	< 5.00	< 5.00
ZN		< 40.0	< 40.0	< 40.0	< 40.0
CA	mg/l	< 0.5			
CA			88.5	45.2	45.1
K		< 5.00	< 5.00	< 5.00	< 5.00
MG		< 0.1	34.6	15.7	15.7
NA		< 1.00	8.80	7.22	7.20

† The following samples were below detection limits for the element listed, in the uncorrected result. The raised detection limit and corrected result is also given:

FB19S05 B < 98

FB19S06 Cu < 8 ; Li < 13

FB19D06 Cu < 8 ; Li < 13

RJ 5.23.88

DATA SET : SF5077 SAMPLE ID : FB19S08

ELEMENT	SAMPLE	DUPLICATE
AG	-3.	-1.
AL	-116.	-96.4
B	35.7	38.5
BA	47.0	47.8
BE	-0.4	-0.2
CD	-0.	1.
CO	1.	0.
CR	-2.	2.
CU	1.	4.
FE	66.4	67.1
LI	2.8	7.5
MN	121.	122.
MO	-1.	31.
NI	10.6	5.2
PB	26.	1.
SN	-28.5	-15.0
SR	95.3	96.4
TI	72.8	76.0
V	-3.	2.
Y	0.	-0.
ZN	31.	10.
CA	40.3	40.8
K	-2.8	-1.6
MG	20.8	20.8
NA	10.5	10.5

The duplicate is another digestion of FB19S08 to check on reproducibility because a small amount of digested sample was lost from the top of the digestion vessel. For results greater than detection limits, the results agree to < 2 RPD except Ti < 5 RPD.

Jm 26May86

Y905 CF61ZZ
8TFA05WU1ZZ

DATA SET : SF5077 SAMPLE ID : FB19R02
Survey: Roquois Chland

ELEMENT	SAMPLE	SAMPLE
AG (units ug/l except where noted.)	1.7	0.7
AL	22.8	16.7
B	-7.0	-4.7
BA	2.1	2.6
BE	-0.1	-0.1
CD	2.	0.
CO	1.1	1.8
CR	-1.	2.
CU	14.1	12.4
FE	15.9	18.1
LI	-3.	-1.
MN	0.2	0.3
MO	5.	1.
NI	9.29	9.61
PB	42.	9.
SN	-23.1	-14.5
SR	0.3	0.6
TI	73.0	73.6
V	2.55	2.49
Y	0.6	0.3
ZN	32.0	34.9
CA (mg/l)	0.27	0.26
K	-2.5	-3.1
MG	0.0	0.0
NA	0.2	0.2

The second sample is digested FB19R02, rerun ~~to~~ confirm for Cu contamination. The sample value is corrected for added acid. The reanalysis also shows copper present above detection limits.

MP 5.23.86

DATA SET : METALS

ELEMENT	TEN2WAG	TEN3WCA †
AG	938.	-91.9
AL	277.	-19.0
	10000	
B	79.3	10000
BA	14.4	0.581
BE	0.739	9910
CD	-12.4	10100
CO	9940	-4.98
CR	9880	-190.
CU	-4.67	9810
FE	14.0	66.4
LI	9680	6.03
MN	1.64	9660
MO	9690.	5.80
NI	21.4	9720
PB	9790	22.1
SN	10600	7.40
SR	9840	6.66
TI	5.04	0.999
V	-158.	9680
Y	9800	5.44
ZN	6.71	9860
CA	0.078	9.33
K	-1.70	96.2
MG	9.72	0.011
NA	96.2	-0.003

† TEN2WAG is standard TEN2 with added silver. TEN3WCA is standard TEN3 with added calcium.

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

DATE: 09 JUN 1988

SUBJECT: Review of Region 5 data for Inland Steel

FROM: Curtis Ross, Director CR
Region 5 Central Regional Laboratory

To: Data User:

Attached are the results for:

CRL Data Set Numbers: SF5094
Sample Numbers: 88FB19S05-R01
Parameter(s): As, Pb, Sb, Se, Tl, Cd
Laboratory: CRL

Results Status

(X) DATA ACCEPTABLE FOR USE*
( ) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE: .....
Comments:

cc: Contractor's Reprentative

Filed by/date:

DATA SET	SITE	DU/ACT
SF 5094	Inland Steel, St. Paul	Y905 / C761ZZ

SAMPLES	PARAMETER(S)
88FB19 S05, S06, D06, R01	As, Cd, Pb, Sb, Se, Tl

SAMPLED	RECEIVED	DUE	LAB
5 May 88	6 May 88	27 May 88	CRC

SHIPPED	DATA RECEIVED	CONTRACT
NA →		

TEAM LEADER	SECTION CHIEF	QC COORD	DATA COORD
JVM 31 May 88			Sg 6-8-88

Comments By Reviewer:

DATA MANAGEMENT COORDINATOR

RECEIVED	TRANSMITTED		CLERICAL SUPPORT RECEIVED	COMPLETED
(X) REVIEWED	( ) UNREVIEWED	TEAM LEADER/DATE	John V. Moon 31 May 88	
( ) REVIEWED	( ) UNREVIEWED	SECTION CHIEF/DATE		
( ) REVIEWED	( ) UNREVIEWED	QC COORDINATOR/DATE		

REVIEWED BY CONTRACT COORDINATOR/DATE

RECEIVED	TRANSMITTED	DATA MANAGEMENT COORDINATOR
6-8-88	6-9-88	Sylvia Griffin

CC: QUALITY CONTROL COORDINATOR

8TFA05WUZZ

ACTIVITY# ~~C76100~~ C76ZZ

(9)

JVM 31May88

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND (FIT) SAMPLING DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER 4905 DATASET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINNESOTA PRIORITY N CONTRACTOR N

CRL LIMS NUMBER	SAMPLE DESCRIPTION	MATRIX WATER CADMIUM (CD) TEST UNITS UG/L PE1235826	
88FB19			
S05	RW1 5-157863	~~<2~~ <0.2	
S06	RW2 5-157876	~~<2~~ <0.2 ~~<0.20~~	
DU6	DUPLICATE 5-157890	~~<2~~ <0.2	
RU1	BLANK 5-157897	~~<2~~ <0.2	
		AAS	PM
		~~5/23/88~~	5-26-88

RECEIVED BY
JUN 0 8 1988
U.S. EPA CENTRAL REGIONAL LAB

CRL V.2: 3/85

8TFA05WWZZ

JWM 31 May 88

ACTIVITY # ~~C76100~~ C761ZZ

ENVIRONMENTAL PROTECTION AGENCY
FOR THE TEAM: METALS

DIVISION/BRANCH SUPERFUND (FIT) SAMPLE DATE 5/5/88 LAB ARRIVAL DATE 5/6/88 DUE DATE 5/27/88

DU NUMBER Y405 DATA SET NUMBER 5094 STUDY INLAND STEEL ST. PAUL, MINN. PRIORITY N CONTRACTOR N

CRL LOG NUMBER	SAMPLE DESCRIPTION	TOTAL METALS WATER TOTAL ICAP UG/L MET111	TOTAL METALS WATER AS UG/L MET161	TOTAL METALS WATER PB UG/L MET1191	TOTAL METALS WATER SB UG/L MET1201	TOTAL METALS WATER SE UG/L MET1211	TOTAL METALS WATER TL UG/L MET1221
88FB19S05	RW1 5-157863	X	X <2	X <2	X <2	X <2 PM 5-23-88	X <2
88FB19S06	RW2 5-157876	X	X <2	X <2	X <2	X <2 MS 5/23/88	X <2
88FB19D06	DUPLICATE 5-157890	X	X <2	X <2	X <2	X <2 PM 5-23-88	X <2
88FB19R01	BLANK 5-157897	X	X <2	X <2	X <2	X <2 MS 5/23/88	X <2
			PM	MMT	MS		MS
			5-18-88	5-16-88	5/25/88		5/23/88

RECEIVED BY
JUN 09 1988
U.S. EPA CENTRAL REGIONAL LAB

JVM
31 May 88

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: PM
DATE OF ANALYSIS --: 05-18-1988
PARAMETER NAME ----: AS
DATA SET # ---------: WSB5063, SF5094, WSB5102

SAMPLE NO.	CONC.	R VALUE	SLOPE
QC LAST true=235	23.74698	.9986595	8.219998E-03 0%
S58	1.14094	.9999729	7.450001E-03
S59	-.7554409	.9991696	7.810001E-03
FB19S05	-.1838738	.9999941	.00707
FB19S06	-.3698875	.9999249	7.570001E-03
FB19D06	-.4081592	.9997505	7.349999E-03
FB19R01	-.3979469	.9996591	.00779
PW03S73	-.2510486	.9997608	.00717
QC	25.3394	.9997235	7.660004E-03 +8%

QC LAST

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.199	.1952001	-3.79993E-03	-1.946685 %
10	.275	.2774001	2.400041E-03	.8651912 %
20	.353	.3596	6.600023E-03	1.835379 %
30	.447	.4418	-5.199999E-03	-1.177003 %

S58

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	8.500001E-03	5.000001E-04	5.882354 %
10	.084	8.300001E-02	-9.999871E-04	-1.204804 %
20	.157	.1575	5.000085E-04	.3174657 %
30	.232	.232	2.980232E-08	1.284583E-05 %

S59

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-5.899994E-03	-3.899994E-03	66.10166 %
10	.067	7.220001E-02	5.200006E-03	7.202224 %
20	.149	.1503	1.300007E-03	.8649415 %
30	.231	.2284	-2.599985E-03	-1.138347 %

FB19S05

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.299988E-03	-2.999877E-04	23.0762 %

20	.14	.1401	1.000017E-04	.0713788 %
30	.211	.2108	-1.999885E-04	-9.487119E-02 %

JVR
31 May 88

FB19S06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-2.800049E-03	1.999512E-04	-7.140991 %
10	.074	7.289995E-02	-1.100048E-03	-1.508984 %
20	.147	.1486	1.599953E-03	1.076685 %
30	.225	.2243	-7.000268E-04	-.312094 %

FB19D06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-2.99997E-03	3.050082E-08	-1.016704E-03 %
10	.072	7.050002E-02	-1.499981E-03	-2.127632 %
20	.141	.144	2.999991E-03	2.083327 %
30	.219	.2175	-1.500011E-03	-.68966 %

FB19R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-3.100006E-03	-2.100006E-03	67.74201 %
10	.071	.0748	3.79999E-03	5.080201 %
20	.154	.1527	-1.300007E-03	-.8513472 %
30	.231	.2306	-4.000068E-04	-.1734635 %

PW03S73

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-1.800018E-03	-1.800018E-03	100 %
10	6.800001E-02	6.989998E-02	1.89998E-03	2.718141 %
20	.14	.1416	1.599982E-03	1.129931 %
30	.215	.2133	-1.700014E-03	-.7970061 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.192	.1940999	2.099916E-03	1.081874 %
10	.274	.2707	-3.300041E-03	-1.219077 %
20	.347	.3473	2.999902E-04	8.637782E-02 %
30	.423	.4239	9.000003E-04	.2123143 %

BEGIN DATA FILE: AS1.DF

Begin Element - AS
BEGIN DATA FILE: AS3.DF

Begin Element - AS
-0.005
0.000 AZ
-0.004
0.092 H
0.171 DH
0.273
0.226
0.305 QC
0.385
0.489
0.000
0.081 S50
0.159
0.244
0.047
0.126 S52
0.203
0.286
0.039
0.113 S54
0.186
0.279
0.049
0.132 S55
0.210
0.295
0.003
0.088 S56
0.161
0.248
0.087
0.172 S57
0.245
0.322
0.030
0.110 S54D
0.179
0.263
0.199
0.275
0.353 QC
0.447
0.001 Blank
0.008
0.084 S58
0.157
0.232
-0.002
0.067 S59
0.149
0.231
-0.001
0.069 S05 SF5094
0.140
0.211 FB19

-0.003
0.074 S06
0.147
0.225
-0.003
0.072 D06
0.141
0.219
-0.001
0.071 R01
0.154
0.231
-0.000
0.068 PW03S73
0.140
0.215
0.192
0.274 QC
0.347
0.423

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: PM
DATE OF ANALYSIS --: 05-26-1988
PARAMETER NAME ----: CD
DATA SET # --------: SF5094, WSB 5/13

Jun 31 May H

SAMPLE NO.	CONC.	R VALUE	SLOPE
STD	3.497628E-02	.9992754	.1258
QC true = 0.78	.8561057	.9987604	.1376 +9.7
FB19S05	.1689495	.9940688	8.760001E-02 rerun
S06	1.825571E-02	.9990017	9.859999E-02
D06	5.792675E-02	.9930581	9.839999E-02 rerun
R01	9.394906E-02	.9979574	.1256
S76	1.635531	.996488	.1092
S77	1.839929	.9961667	.1112 dilute
S78	.4527408	.9962797	.1058
QC	.7897139	.9991572	.1536 +1.1%

STD

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	4.400015E-03	4.000147E-04	9.091211 %
.5	.07	6.730001E-02	-2.699994E-03	-4.011877 %
1	.126	.1302	4.199997E-03	3.225804 %
1.5	.195	.1931	-1.900002E-03	-.9839474 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.119	.1178001	-1.199909E-03	-1.018597 %
.5	.182	.1866001	4.600063E-03	2.465199 %
1	.261	.2554	-5.599976E-03	-2.192629 %
1.5	.322	.3242	2.200008E-03	.6785958 %

FB19S05

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.018	1.479998E-02	-3.200023E-03	-21.62181 %
.5	.058	5.859998E-02	5.999804E-04	1.023858 %
1	9.399999E-02	.1024	8.399986E-03	8.203113 %
1.5	.152	.1462	-5.799994E-03	-3.967164 %

S06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.004	1.800013E-03	-2.199988E-03	-122.2207 %
.5	.047	5.110001E-02	4.100006E-03	8.023495 %
1	.102	.1004	-1.599997E-03	-1.593623 %
1.5	.15	.1497	-3.000051E-04	-.2004042 %

D06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.012	5.699992E-03	-6.300008E-03	-110.5266 %
.5	.049	5.489999E-02	5.899992E-03	10.7468 %
1	.097	.1041	7.099986E-03	6.820353 %
1.5	.16	.1533	-6.700009E-03	-4.370522 %

Jun 31 May 85

R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.012	.0118	-1.999969E-04	-1.694888 %
.5	.078	7.460001E-02	-3.399991E-03	-4.557627 %
1	.13	.1374	7.400021E-03	5.38575 %
1.5	.204	.2002	-3.799975E-03	-1.898089 %

S76

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.173	.1786	5.599991E-03	3.135493 %
.5	.241	.2332	-7.800013E-03	-3.344774 %
1	.289	.2878	-1.20002E-03	-.4169633 %
1.5	.339	.3424	3.399998E-03	.9929901 %

S77

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.206	.2046	-1.399994E-03	-.684259 %
.5	.254	.2602	6.199986E-03	2.382777 %
1	.324	.3158	-8.20005E-03	-2.596596 %
1.5	.368	.3714	3.399938E-03	.9154386 %

S78

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.044	4.789999E-02	3.899984E-03	8.141931 %
.5	.109	.1008	-8.200005E-03	-8.134926 %
1	.149	.1537	4.69999E-03	3.057899 %
1.5	.207	.2066	-3.999919E-04	-.1936069 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.118	.1213	3.300026E-03	2.720549 %
.5	.204	.1981	-5.899981E-03	-2.978284 %
1	.273	.2749	1.900017E-03	.6911666 %
1.5	.351	.3517	6.99997E-04	.1990324 %

Jim
31 May 88

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: PM
DATE OF ANALYSIS --: 05-26-1988
PARAMETER NAME ----: CD
DATA SET # --------: SF5094, WSB5113

SAMPLE NO.	CONC.	R VALUE	SLOPE
QC LAST	.7897139	.9991572	.1536 41%
S05R	4.909821E-02	.9981298	9.980001E-02 OK
D06 R	2.332658E-02	.999002	9.859999E-02 OK
S77 1/2	.9434694	.9926979	.1026
S78DUP	.4417479	.9978392	.103 OK
PW01S67	1.141741	.9947699	8.959999E-02
S68	2.105366	.9976227	.1006001 dilute
S13 FC21	.1294249	.9929393	9.039999E-02
QC	.7826632	.9984692	.1592 0% dif.

QC LAST

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.118	.1213	3.300026E-03	2.720549 %
.5	.204	.1981	-5.899981E-03	-2.978284 %
1	.273	.2749	1.900017E-03	.6911666 %
1.5	.351	.3517	6.99997E-04	.1990324 %

S05R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	4.900003E-03	-1.099998E-03	-22.44892 %
.5	.056	5.480001E-02	-1.199994E-03	-2.18977 %
1	.099	.1047	5.700015E-03	5.44414 %
1.5	.158	.1546	-3.399983E-03	-2.199213 %

D06 R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	.0023	3.000002E-04	13.04349 %
.5	.054	.0516	-2.400003E-03	-4.65117 %
1	.097	.1009	3.899992E-03	3.865205 %
1.5	.152	.1502	-1.800016E-03	-1.198413 %

S77 1/2

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.102	9.679997E-02	-5.200029E-03	-5.371932 %
.5	.137	.1481	1.109998E-02	7.494924 %
1	.206	.1994	-6.600023E-03	-3.309941 %

1.5	.25	.2307	6.999672E-04	.2792051 %

Jim
31 May 88

S78DUP

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.042	4.550002E-02	3.500018E-03	7.692345 %
.5	.1	.097	-2.999999E-03	-3.092782 %
1	.153	.1485	-4.500002E-03	-3.030304 %
1.5	.196	.2	3.999964E-03	1.999982 %

PW01S67

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.106	.1023	-3.699996E-03	-3.616809 %
.5	.139	.1471	8.100003E-03	5.50646 %
1	.197	.1919	-5.100012E-03	-2.657641 %
1.5	.236	.2367	6.999821E-04	.2957254 %

S68

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.216	.2117999	-4.200101E-03	-1.983051 %
.5	.257	.2620999	5.099923E-03	1.945793 %
1	.31	.3124	2.399951E-03	.7682303 %
1.5	.366	.3627	-3.300011E-03	-.9098459 %

S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.018	1.170001E-02	-6.29999E-03	-53.84602 %
.5	.047	5.690001E-02	9.900011E-03	17.39896 %
1	.103	.1021	-8.999929E-04	-.8814817 %
1.5	.15	.1473	-2.700001E-03	-1.832995 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.129	.1246	-4.400015E-03	-3.531313 %
.5	.196	.2042	8.199975E-03	4.015659 %
1	.287	.2838	-3.200024E-03	-1.127563 %
1.5	.364	.3634	-6.000102E-04	-.1651101 %

$BEGIN DATA F

Begin Element
-0.006
0.000 AZ
0.005
0.010
0.006
0.000 AZ
-0.004
0.004
0.021
0.025
-0.000
0.036
0.048
-0.002
0.002
0.013
0.219
-0.003
0.000 AZ
0.003
0.031
0.069
0.092
0.055
0.088
0.130
0.145
0.003
0.030
0.055
0.091
0.056
0.090
0.116
0.150
0.012
0.000 AZ
-0.005
0.034
-0.018
0.000 AZ
0.004
0.070 std
0.126
0.195
0.110
0.198
0.247 QC out
0.297
~~0.125~~
~~0.186~~
0.119
0.182 QC
0.261
0.322
0.018 F019
0.058
0.094 S05
0.152

0.004
0.047 S06
0.102
0.150
0.012
0.049 D06
0.097
0.160
0.012
0.078 R01
0.130
0.204
0.173
0.241 S76
0.289
0.339
0.206
0.254 S77
0.324
0.368
0.044
0.109 S78
0.149
0.207
0.118
0.204 QC
0.273
0.351
0.006 ~~Blank~~
0.056
0.099 S05R
0.158
0.002
0.054 D06R
0.097
0.152
0.102
0.137 S77 1/2
0.206
0.250
0.042
0.100 S78Dup
0.153
0.196
0.106 PW01
0.139
0.197 S67
0.236
0.216
0.257 PW01
0.310 S68
0.366
0.018 FC21
0.047 S13
0.103
0.150
0.129
0.196 QC
0.287
0.364
0.004 Blank up
0.094
0.162 S77 1:2

0.208
0.248
0.099
0.144 S67
0.198
0.234
0.118
0.152 S77 1:2
0.202
~~0.225~~
0.236
0.108
0.151 S77 1:2
0.195
0.234
0.095
0.154 S68 1:1
0.174
0.241
-0.001
0.049
0.105 S13
0.152
0.003
0.055
0.098 FC21 S14
0.130
0.128
0.214 QC
0.265
0.346
0.089
0.129
0.140
0.162

Begin Element - CD
0.008
-0.002 Blank
~~0.116~~
~~0.166~~
~~0.228~~
0.106
0.168
0.216
0.308
0.120
0.162
0.231
0.311

Jan 31 May 88

JVM
31 May 88

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MMT/DSK
DATE OF ANALYSIS --: 05-18-1988
PARAMETER NAME ----: PB
DATA SET # --------: SF5094

SAMPLE NO.	CONC.	R VALUE	SLOPE
STDCURVE	-.3004279	.9999446	.00233 -7.0%
AQC true=21.1	20.8365	.9999567	.00263 -4.5%
AQC	21.41733	.9998146	2.539999E-03
S05	-.465118	.9983812	8.600001E-04
S06	.5405428	.9996351	.00148
D06	1.258738	.9998534	.00143
R01	-.5855904	.999635	.00222
AQC	20.68548	.9984101	2.480001E-03 -8.0%

STDCURVE

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-6.99997E-04	3.000031E-04	-42.85778 %
10	.023	.0226	-3.999993E-04	-1.769908 %
20	.046	.0459	-1.000017E-04	-.2178686 %
30	.069	.0692	1.999959E-04	.2890115 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.055	5.479999E-02	-2.000108E-04	-.3649834 %
10	.081	8.109999E-02	9.998679E-05	.1232883 %
20	.107	.1074	3.999844E-04	.372425 %
30	.134	.1337	-3.0002E-04	-.2243979 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.054	5.440001E-02	4.000068E-04	.7353065 %
10	.08	.0798	-2.000034E-04	-.2506308 %
20	.106	.1052	-8.000061E-04	-.7604621 %
30	.13	.1306	5.999804E-04	.4594031 %

S05

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-4.000015E-04	-4.000015E-04	100 %
10	8.000001E-03	.0082	1.999997E-04	2.43902 %
20	.016	.0168	8.000005E-04	4.761908 %
30	.026	.0254	-5.999971E-04	-2.362193 %

JW
31 May 81

S06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	8.000031E-04	-1.99997E-04	-24.99953 %
10	.015	.0156	6.000009E-04	3.846159 %
20	.031	.0304	-6.000027E-04	-1.973693 %
30	.045	.0452	1.999922E-04	.4424607 %

D06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	1.799995E-03	-2.000047E-04	-11.1114 %
10	.016	.0161	9.999797E-05	.6211055 %
20	.03	.0304	4.000012E-04	1.315793 %
30	.045	4.470001E-02	-2.999976E-04	-.6711356 %

R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.300011E-03	-3.000107E-04	23.07755 %
10	.021	2.089999E-02	-1.000091E-04	-.4785129 %
20	.042	4.309999E-02	1.099993E-03	2.552188 %
30	.066	6.529999E-02	-7.000119E-04	-1.071994 %

ABC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.05	5.130001E-02	1.300003E-03	2.534119 %
10	.077	7.610001E-02	-8.999929E-04	-1.182645 %
20	.103	.1009	-2.099991E-03	-2.081259 %
30	.124	.1257	1.700029E-03	1.352449 %

JVM
3 May 1

0.004
0.001
0.000
0.002
0.000
-0.001
0.023
0.046 STDC
0.069

0.055
0.081 AQC r = 0.999 ~~RPD~~ %~~RSD~~ =
0.107 x = 20.8
0.134

0.054
0.080 AQC r = 0.997 ~~RPD~~ %~~RSD~~ =
0.106 x = 21.9
0.130

-0.000
0.008 S05 r = 0.998
0.016 x = < 2 ug/L
0.026

0.001
0.015 S06 r = 0.998
0.031 x = < 2 ug/L
0.045

0.002
0.016 D06 r = 0.999
0.030 x = < 2 ug/L
0.045

-0.001
0.021 R01 r = 0.999
0.042 x = < 2 ug/L
0.066

0.050
0.077 AQC r = 0.998 Dev ~~RPD~~ %~~RSD~~ = 8.0%
0.103 x = 20.7
0.124
0.003

Jm 31May88

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: M SHANNON
DATE OF ANALYSIS --: 05-25-1988
PARAMETER NAME ----: SB
DATA SET # ---------:

SAMPLE NO.	CONC.	R VALUE	SLOPE	
BLANK	-.1928366	.9989544	.00726	<2
ADD 20.3	21.11307	.9993769	6.970002E-03	104%
5094 R01	-.3940209	.9975684	.00736	
505	-.3591169	.9984544	.00724	
506	-6.159914E-02	.9989139	9.739999E-03	
006 5094	-.5711434	.9979399	9.980001E-03	
5131 R03	-.340315	.996944	.00764	
513	-.3762815	.9994248	8.769999E-03	
514 5131	.2343757	.9996986	8.959999E-03	
ADD 20.3	21.13474	.9948584	7.050001E-03	
ADD REPEAT 20.3	20.0139	.9989051	7.190003E-03	98%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-1.399994E-03	6.000062E-04	-42.85778 %
10	.075	.0712	-3.800005E-03	-5.337085 %
20	.136	.1438	5.799994E-03	4.033376 %
30	.219	.2164	-2.600014E-03	-1.201485 %

ADD 20.6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.148	.1472	-6.000434E-04	-.5435079 %
10	.218	.2169	-1.100019E-03	-.5071546 %
20	.282	.2866	4.599989E-03	1.60502 %
30	.353	.3563	-2.700001E-03	-.7577887 %

5094 R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-2.899994E-03	-2.899994E-03	100 %
10	.071	.0707	-3.000051E-04	-.4243354 %
20	.135	.1443	9.299979E-03	6.444893 %
30	.224	.2179	-6.100029E-03	-2.799463 %

505

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.003	-2.600006E-03	3.99994E-04	-15.38435 %
10	.074	6.979999E-02	-4.200012E-03	-6.017209 %
20	.135	.1422	7.199988E-03	5.063283 %
30	.218	.2146	-3.399998E-03	-1.584342 %

JM 31 May 88

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-5.999756E-04	-2.599976E-03	433.3469 %
10	.097	9.680001E-02	-1.999885E-04	-.2065996 %
20	.186	.1942	8.200005E-03	4.222453 %
30	.297	.2916	-5.399972E-03	-1.851842 %

D06 5094

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.005	-5.700012E-03	-7.000123E-04	12.28089 %
10	.099	.0941	-4.900001E-03	-5.207228 %
20	.182	.1939	1.190002E-02	6.137195 %
30	.3	.2937	-6.300003E-03	-2.145047 %

5131 R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-2.600006E-03	-1.600006E-03	61.53855 %
10	.077	7.379999E-02	-3.20001E-03	-4.336057 %
20	.133	.1502	1.119998E-02	7.456713 %
30	.233	.2266	-6.400004E-03	-2.824362 %

S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.004	-3.299988E-03	7.000123E-04	-21.21257 %
10	.088	8.440001E-02	-3.599994E-03	-4.265395 %
20	.167	.1721	5.100012E-03	2.9634 %
30	.262	.2598	-2.200008E-03	-.8468081 %

S14 5131

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	2.100006E-03	1.100006E-03	52.38109 %
10	.095	.0917	-3.299996E-03	-3.598687 %
20	.178	.1813	3.299996E-03	1.820185 %
30	.272	.2709	-1.100004E-03	-.4060553 %

AGC 20.6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.153	.149	-4.000053E-03	-2.6846 %
10	.22	.2195	-5.000532E-04	-.2278147 %
20	.277	.29	1.299995E-02	4.482743 %
30	.369	.3605	-8.50001E-03	-2.357839 %

AGC REPEAT 20.6

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.143	.1439	8.999556E-04	.6254036 %
10	.22	.2158	-4.200012E-03	-1.946252 %

	0.000	AZ
	-0.002	
Blank	0.075	
	0.138	~~AQC~~
	0.219	
	0.148	
	0.218	
AQC	0.282	
	0.359	
	0.000	
5094 R01	0.071	
	0.135	
	0.224	
	-0.003	
B05	0.074	
	0.135	
	0.218	
	0.002	
	0.097	
S06	0.186	
	0.297	
	-0.005	
D06	0.099	
	0.182	
	0.300	
	-0.001	
5131	0.077	
R03	0.139	
	0.233	
	-0.004	
S13	0.088	
	0.167	
	0.262	
	0.001	
S14	0.095	
	0.178	
	0.272	
	0.153	
Bad	0.226	
	0.277	
AQC	0.369	

AQC repeat	0.143
	0.220
	0.282
	0.362

30 .218 .2146 -3.399998E-03 -1.584342 % 30 .362 .3596 -2.399951E-0 %

JVM
31 May 88

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: PM
DATE OF ANALYSIS --: 05-23-1988
PARAMETER NAME ----: SE
DATA SET # ---------: SF5077, CD05109, SF5094, SF5031

SAMPLE NO.	CONC.	R VALUE	SLOPE	
STD	.1685367	.9994321	.00178	
QC TV. 9.8	10.77001	.9991554	9.740001E-03	+9.7%
FB19D08	1.203705	.9951333	.00756	
FB19S11	1.09948	.9988509	.00764	
FB19R02	.4789692	.9970082	8.559999E-03	
CH09S01	-.9868419	.9946928	7.600002E-03	
CH09R01	.2628412	.9989127	8.370002E-03	
QC	10.53023	.9961731	9.429999E-03	7.1%
CH09S01 R	.660916	.9994801	6.960001E-03	
FB19S05	.1365696	.9984218	6.590001E-03	
FB19S06	-.5927612	.9941629	9.110002E-03	
FB19D06	1.054502	.998261	8.440001E-03	
FB19R01	.2173929	.9934938	.00782	
FC21S13	8.322286E-02	.9981068	7.209998E-03	
FC21S14	-.4255319	.9951762	7.050001E-03	
FC21R03	.4761913	.9992449	7.560001E-03	
QC	13.27102	.9970064	7.490002E-03	35.4%

✓ JVM samples below detection limit not affected by high bias.

STD

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	2.999954E-04	2.999954E-04	100 %
10	.019	.0181	-9.000022E-04	-4.972389 %
20	.035	.0359	8.999966E-04	2.506955 %
30	.054	.0537	-3.000014E-04	-.5586618 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.1	.1048999	4.899904E-03	4.671028 %
10	.209	.2022999	-6.700084E-03	-3.311956 %
20	.301	.2996999	-1.300067E-03	-.4337895 %
30	.394	.3971	3.099948E-03	.7806469 %

FB19D08

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	9.100006E-03	9.100006E-03	100 %
10	.096	8.469999E-02	-1.130001E-02	-13.34121 %
20	.165	.1603	-4.70002E-03	-2.932015 %
30	.229	.2359	6.899983E-03	2.924961 %

FB19S11

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	8.400025E-03	4.000245E-04	4.762182 %
10	.082	8.480002E-02	2.800018E-03	3.301907 %
20	.163	.1612	-6.799981E-03	-4.21835 %
30	.234	.2376	3.600016E-03	1.515156 %

Jvm
31 May 88

FB19R02

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.01	4.099976E-03	-5.900024E-03	-143.9039 %
10	.086	8.969996E-02	3.699958E-03	4.124816 %
20	.165	.1753	1.029995E-02	5.875615 %
30	.269	.2608999	-8.100063E-03	-3.104663 %

CH09S01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-.0075	-.0075	100 %
10	.054	6.850001E-02	1.450001E-02	21.1679 %
20	.151	.1445	-6.499976E-03	-4.498253 %
30	.221	.2205001	-4.999489E-04	-.2267341 %

CH09R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	2.199982E-03	-3.800019E-03	-172.7296 %
10	.083	.0859	2.900005E-03	3.376024 %
20	.164	.1696	5.600006E-03	3.30189 %
30	.258	.2533001	-4.699946E-03	-1.855486 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.091	9.930005E-02	8.300051E-03	8.358557 %
10	.209	.1936	-1.539998E-02	-7.954533 %
20	.282	.2879	5.900026E-03	2.049331 %
30	.381	.3822	1.20002E-03	.313977 %

CH09S01 R

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	4.599976E-03	2.599975E-03	56.52151 %
10	.077	7.419998E-02	-2.800018E-03	-3.77361 %
20	.146	.1438	-2.200008E-03	-1.529908 %
30	.211	.2134	2.399996E-03	1.124647 %

FB19S05

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	8.999939E-04	-2.100006E-03	-233.3356 %
10	.067	.0668	-2.000034E-04	-.2994063 %
20	.126	.1327	6.700009E-03	5.04899 %

30 .293 .1966 -4.399989E-03 -1.218501 %

SM 21 May 88

FB19S06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	-5.400055E-03	-8.400054E-03	155.555 %
10	.081	8.569997E-02	4.699968E-03	5.484212 %
20	.161	.1768	1.579998E-02	8.936644 %
30	.28	.2679	-1.210001E-02	-4.516615 %

FB19D06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	8.000001E-03	8.899994E-03	8.999938E-04	10.1123 %
10	.099	9.330001E-02	-5.699992E-03	-6.109316 %
20	.169	.1777	8.700013E-03	4.895899 %
30	.266	.2621	-3.899992E-03	-1.487978 %

FB19R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.012	1.700012E-03	-1.029999E-02	-605.8773 %
10	.069	7.990001E-02	1.090001E-02	13.64207 %
20	.149	.1581	9.100005E-03	5.755854 %
30	.246	.2363	-.0097	-4.104952 %

FC21S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.006	6.000367E-04	-5.399964E-03	-899.9389 %
10	.065	7.270003E-02	7.700026E-03	10.5915 %
20	.144	.1448	8.000136E-04	.5524956 %
30	.22	.2169	-3.100023E-03	-1.429241 %

FC21S14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	-.003	-.006	200 %
10	.055	6.750001E-02	1.250001E-02	18.51853 %
20	.145	.138	-6.999985E-03	-5.072452 %
30	.208	.2085	5.000234E-04	.2398193 %

FC21R03

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	3.600006E-03	3.600006E-03	100 %
10	.084	7.920001E-02	-4.799985E-03	-6.060585 %
20	.156	.1548	-1.199991E-03	-.7751876 %
30	.228	.2304	2.400011E-03	1.041671 %

QC

SPIKE	MEASURED	CALC.	ERROR	PER CENT

0	.095	9.939999E-02	4.399993E-03	4.426553 %
10	.176	.1743	-1.699984E-03	-.9753207 %
20	.259	.2492	-9.799987E-03	-3.932579 %
30	.317	.3241001	7.100046E-03	2.190696 %

MM 31 May 91

0.003
0.000 AZ
-0.009
-0.008
0. S1
0.000 AZ
-0.000
0.002
0.019 + A
0.035
0.054
0.100
5X 0.209 QC
0.301
0.394
-0.000
0.096 FB19 D08
0.165
0.229
0.008
0.082
0.168 S11
0.234
0.010
0.086
0.165 R02
0.269
0.000
0.054 CH09
0.151 S01
0.221
0.006
0.083 CH09
0.164 R01
0.258
0.091
0.209 QC
0.282
0.381
0.004 Blank
0.002
0.077 C H09
0.146 S01
0.211 (R)
0.003
0.067
0.126 FB19S05
0.203
0.003
0.081
0.161 FB19S06
0.280
0.008
0.099 FB19D06

0.159
0.265
0.012
0.069 FB19R01
0.149
0.245
0.006
0.065 FC21S13
0.144
0.220
0.003
0.055 FC21S14
0.145
0.208
0.000
0.084 FC21R03
0.156
0.228
0.095
0.176 QC QC out high
0.259
0.317
0.005 Blank
0.013
0.072 FB19R01 R
0.144
0.233
0.006
0.074 FB19S06 R
0.154
0.232
0.005
0.052 FB21S04
0.091
0.162
-0.006
0.061 FB21D04
0.112
0.147
0.008
0.061 FB21S05
0.122
0.182
0.004
0.058 FB21R01
0.141
0.195
0.010
0.083 PW03S73
0.141
0.218
0.094
0.167 QC
0.237

↓ samples must be rerun

JVM
31 May 88

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: M SHANNON
DATE OF ANALYSIS --: 05-26-1988
PARAMETER NAME ----: SE
DATA SET # --------:

SAMPLE NO.	CONC.	R VALUE	SLOPE
NBS 9.7	9.769587	.9965564	.00217 100%
5094 S06	-.5263151	.9998398	.00209
R01	-.7142884	.9997607	.00224
5132 R01	-.9374976	.9992411	.00192
S04	-.6666666	.9973439	.0015
D04	-1.333333	1	.0015
5132 S05	-.9589068	.9957117	2.190001E-03
AQC 9.8	13.65169	.9858506	.00178
NBS 9.7	9.230774	.9990812	.00195 95%

NBS 9.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.019	.0212	2.199998E-03	10.37735 %
10	.046	4.289999E-02	-3.100008E-03	-7.226127 %
20	.065	.0646	-4.000068E-04	-.6192056 %
30	.085	8.629999E-02	1.299985E-03	1.506356 %

5094 S06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.099999E-03	-9.999843E-05	9.090779 %
10	.02	.0198	-1.999997E-04	-1.010099 %
20	.04	.0407	6.99997E-04	1.719894 %
30	.062	.0616	-4.000031E-04	-.6493556 %

R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.600006E-03	-6.000061E-04	37.50024 %
10	.02	.0208	7.999968E-04	3.846139 %
20	.043	.0432	1.999997E-04	.4629622 %
30	.066	.0656	-3.999993E-04	-.6097551 %

5132 R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-1.799995E-03	2.000047E-04	-11.1114 %

30	.055	5.580001E-02	8.000061E-	%

S04

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-9.999999E-04	-9.999999E-04	100 %
10	.012	.014	.002	14.28572 %
20	.03	.029	-9.999983E-04	-3.44827 %
30	.044	.044	0	0 %

D04

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-.002	2.328307E-10	-1.164153E-05 %
10	.013	.013	0	0 %
20	.028	.028	0	0 %
30	.043	.043	0	0 %

5132 S05

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-2.100006E-03	-1.100006E-03	52.38109 %
10	.02	.0198	-2.000015E-04	-1.010109 %
20	.038	.0417	3.700003E-03	8.872909 %
30	.066	6.360001E-02	-2.399996E-03	-3.773578 %

AGC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.022	.0243	2.300004E-03	9.465034 %
10	.043	4.210001E-02	-8.999966E-04	-2.137759 %
20	.065	5.990001E-02	-5.09999E-03	-8.514171 %
30	.074	7.770001E-02	3.700011E-03	4.761918 %

NBS 9.7

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.017	1.800001E-02	1.000006E-03	5.555586 %
10	.039	3.750001E-02	-1.499996E-03	-3.999988 %
20	.057	5.700001E-02	3.72529E-09	6.535597E-06 %
30	.076	.0765	5.00001E-04	.6535961 %

0.001	
0.015	
0.049	
0.071	
0.090	
0.113	
-0.001	
-0.001	
0.016	
0.038	Std curve
0.061	
0.079	
0.052	AQC
0.018	
0.019	
0.046	
0.065	NBS 9.7
0.085	
-0.001	
0.020	5094S06
0.040	
0.062	
-0.001	
0.020	5094R01
0.043	
0.066	
-0.002	
0.017	
0.038	R015132
0.055	
0.000	
0.012	S04
0.030	
0.044	
-0.002	
0.013	
0.028	D04
0.043	
-0.001	
0.020	5132S05
0.038	
0.066	
0.022	
0.043	AQC
0.065	
0.074	
0.017	
0.039	
0.057	NBS 9.7
0.076	

Jan 31 Mar 88

* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: M SHANNON
DATE OF ANALYSIS --: 05-23-1988
PARAMETER NAME ----: TL
DATA SET # ---------: 4991 5131 5094

SAMPLE NO.	CONC.	R VALUE	SLOPE	
AQC	13.24617	.9990365	.01109	105%
5094 R01	.5096622	.9979462	.01138	
~~5131 S13~~	-1.609045	.9807002	.00199	
~~S14~~	-.0502505	.9905684	.00199	
5131 R03	.4054054	.996696	.0111	
~~S05 DUP~~ 1/14	-1.075947	.9948174	.00158	
~~S05 F~~ 1/14	8.022602	.9439125	.00177	
AQC	13.19516	.9998601	.01158	105%

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.141	.1469	5.900026E-03	4.016354 %
10	.265	.2578001	-7.199943E-03	-2.79284 %
20	.372	.3687	-3.299981E-03	-.8950315 %
30	.475	.4796001	4.600048E-03	.9591426 %

5094 R01

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.003	5.799957E-03	2.799957E-03	48.27548 %
10	.117	.1196	2.599985E-03	2.1739 %
20	.247	.2334	-1.359998E-02	-5.826897 %
30	.339	.3472	8.20005E-03	2.361765 %

5131 S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	-3.599999E-03	-4.599999E-03	127.7778 %
10	8.999999E-03	.0163	7.300001E-03	44.78528 %
20	.037	.0362	-7.999987E-04	-2.209941 %
30	.058	5.610001E-02	-1.899995E-03	-3.3868 %

S14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	-9.999848E-05	-2.099999E-03	2100.031 %
10	.019	.0198	8.000005E-04	4.040407 %
20	.035	.0397	4.699998E-03	11.83879 %
30	.063	.0596	-3.400006E-03	-5.704708 %

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	.0045	.0025	55.55555 %
10	.114	.1155	1.500011E-03	1.29871 %
20	.237	.2265	-1.049998E-02	-4.635754 %
30	.331	.3375	6.500006E-03	1.925928 %

JM 31May91

S05 DUP 1/14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.002	-1.699997E-03	3.000032E-04	-17.64728 %
10	.013	.0141	1.100002E-03	7.80143 %
20	.033	.0299	-3.099999E-03	-10.36789 %
30	.044	.0457	1.699999E-03	3.719911 %

S05 P 1/14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.011	1.420001E-02	3.200005E-03	22.53524 %
10	.031	.0319	9.000041E-04	2.821329 %
20	.061	4.960001E-02	-.0114	-22.98386 %
30	.06	.0673	7.300001E-03	10.84696 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.152	.1528	7.999987E-04	.5235594 %
10	.268	.2686	6.000102E-04	.2233843 %
20	.388	.3844	-3.600001E-03	-.9365248 %
30	.498	.5002001	2.200037E-03	.4398315 %

AQC
0.265
0.372
0.003
0.117 R01
0.001 S13
0.009
0.027
0.002
0.017 S14
0.033
0.003
0.114 R03
0.237
0.311
-0.002 S05
0.013 P14
0.033
0.044
0.001 S05P
0.001 Y14
0.012 AQC

S094
S131
S131
S131

JMM
31 May 88

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* FLAMELESS * CSC VERSION 1.00 *

NAME OF ANALYST ---: MS
DATE OF ANALYSIS --: 05-23-1988
PARAMETER NAME ----: TL
DATA SET # --------: 5094 5131 4991

SAMPLE NO.	CONC.		R VALUE	SLOPE	
~~BLANK~~	~~3.928576~~		~~.4556178~~	~~2.800001E-03~~ entry error	
BLANK	.1502494		.9997576	5.990001E-03	<2
ADC	13.32197		.9994691	5.870001E-03	106%
S05 DUP 1/14	1.538462	<25	1	.0013	<3 mg/kg
S05 SPK 1/14	10.35972	190 (190)	.9996381	.00139	13 mg/kg 72% recovery
5094 S05	-.6694586		.9995276	.00239	
S06	.2578867		.9997784	3.489999E-03	
5094 D06	.6691182		.9994646	3.430205E-03	
5131 S13	-.1910799		.9998782	.00157	
S14	.6033086		.9996847	1.490045E-03	
ADC	13.63322		.9989601	5.779999E-03	109%

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	1.100001E-02	1.100001E-02	99.99999 %
10	.061	3.900001E-02	-2.199999E-02	-56.41021 %
20	.123	6.700003E-02	-5.599998E-02	-83.58203 %
20	0	6.700003E-02	6.700003E-02	100 %

BLANK

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	8.999939E-04	8.999939E-04	100 %
10	.061	.0608	-2.000034E-04	-.328953 %
20	.123	.1207	-2.300002E-03	-1.905552 %
30	.179	.1806	1.600012E-03	.8859424 %

ADC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.077	7.819998E-02	1.199983E-03	1.534506 %
10	.137	.1369	-1.000017E-04	-7.304726E-02 %
20	.199	.1956	-3.399998E-03	-1.73824 %
30	.252	.2543	2.299994E-03	.9044413 %

S05 DUP 1/14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.002	.002	-2.328307E-10	-1.164153E-05 %
10	.015	.015	-9.313226E-10	-6.208818E-06 %

30	.041	.041	-3.72529E-09	-9.086074E-06 %

S05 SPK 1/14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.014	1.440001E-02	4.000086E-04	2.777836 %
10	.029	2.830001E-02	-6.999914E-04	-2.473467 %
20	.042	4.220001E-02	2.000071E-04	.4739504 %
30	.056	5.610001E-02	1.000054E-04	.1782628 %

Jvm
31 May 11

5094 S05

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	-.001	-1.600006E-03	-6.000061E-04	37.50024 %
10	.021	.0223	1.299996E-03	5.82958 %
20	.047	.0462	-7.999987E-04	-1.731599 %
30	.07	.0701	1.000017E-04	.1426558 %

S06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.001	9.000244E-04	-9.997562E-05	-11.1081 %
10	.035	3.580002E-02	8.000173E-04	2.234684 %
20	.072	7.070001E-02	-1.299985E-03	-1.838733 %
30	.105	.1056	6.000027E-04	.5681844 %

5094 D06

SPIKE	MEASURED	CALC.	ERROR	PER CENT
.002	.002	2.302073E-03	3.020726E-04	13.12177 %
10	.036	3.659726E-02	5.972609E-04	1.631983 %
20	.073	7.089931E-02	-2.100691E-03	-2.962928 %
30	.104	.1052014	1.201354E-03	1.141957 %

5131 S13

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	0	-2.999954E-04	-2.999954E-04	100 %
10	.015	.0154	4.000021E-04	2.597416 %
20	.031	.0311	9.999983E-05	.3215429 %
30	.047	.0468	-2.000034E-04	-.4273577 %

S14

SPIKE	MEASURED	CALC.	ERROR	PER CENT
.001	.001	9.004468E-04	-9.95532E-05	-11.05598 %
10	.016	1.579941E-02	-2.005957E-04	-1.269641 %
20	.03	3.069985E-02	6.998535E-04	2.279664 %
30	.046	.0456003	-3.997013E-04	-.8765322 %

AQC

SPIKE	MEASURED	CALC.	ERROR	PER CENT
0	.077	7.880001E-02	1.800016E-03	2.284283 %
10	.137	.1366	-3.999919E-04	-.2928198 %
20	.199	.1944	-4.600019E-03	-2.366265 %
30	.249	.2522	3.19998E-03	1.268826 %

JCM
31 May 84

-0.000
0.061 BL
0.123
0.179
0.077
0.137
0.199 AQC
0.262
0.002 S06D
0.015 Y14
0.028
0.041
0.017
0.029 S05P
0.042 11/14
0.056
-0.001
0.021 S05
5094
0.047
0.070
0.001
0.035
0.072 S06
0.105
0.002 D06
5094
0.036
5131
0.073 S13
0.104
-0.000
0.015 S13
5131
0.031
0.047
0.001
0.016 S14
0.030
0.046
0.077
0.137 AQC
0.199
0.249

6/13/88

UNITED STATES
ENVIRONMENTAL PROTECTION AGENCY
REGION 5
CHICAGO, ILLINOIS

DATE: 0 9 JUN 1988

SUBJECT: Review of Region 5 data for Inland Steel

FROM: Curtis Ross, Director CR
Region 5 Central Regional Laboratory

To: Data User: FIT

Attached are the results for:

CRL Data Set Numbers: SF5094
Sample Numbers: 88FB19S05-R01
Parameter(s): As, Pb, Sb, Se, Tl, Cd
Laboratory: CRL

Results Status

(✓) DATA ACCEPTABLE FOR USE*
( ) DATA QUALIFIED AS TO USE
( ) DATA UNACCEPTABLE FOR USE

* For data acceptability requirements, refer to the method capability statement for the methods referenced.

Comments by the Quality Control Coordinator:

If there are any questions regarding the data, refer them to Steve Parker, the Quality Control Coordinator, at 353-3805.

Please sign and date this form below and return it with any comments to:

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
(5SCRL)

RECEIVED BY/DATE:
Comments: