UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5 CENTRAL REGIONAL LABORATORY

536 SOUTH CLARK STREET

CHICAGO, ILLINOIS 60605

Date: SEP 25 1997

Subject: Review of Region 5 Data for **GENERAL HYDRAULICS**

From: Charles T. Elly, Director
Region 5 Central Regional Laboratory

To:

Attached are the results for **GENERAL HYDRAULICS**
CRL request number **970311**
for analyses for **Cyanide**
Results are reported for sample designations: 97IE06S01, 97IE06S02, 97IE06D02, 97IE06S03 and 97IE06S04

Results Status:

(X) Acceptable for Use: **Cyanide**
( ) Data Qualified, but Acceptable for use:
( ) Data Unacceptable for Use:

( ) Sewer Disposal Criteria Met;

Comments on Data Quality by Reviewer:

All the water samples submitted for Cyanide analysis with the exception of sample 97ZB05S07 were assayed and the results are attached. The matrix spike and control standard distilled with the samples were prepared at 40 µg CN/L instead of 100 µg CN/L as required. The matrix spike and control standard recoveries were 98.7% and 97.4% respectively. All other required quality control criteria for the laboratory, method, and system performance audits were evaluated and determined to be within the limits. Field blank sample 97IE06R01 was found to be acidic (pH less than 2) and was not analyzed. The only other field blank sample submitted for inorganic analyses was found to be acidic as required

when preserving for metals analyses. No cyanide result is available for sample 97IE06R01. All the other sample results are acceptable for use.

Comments on Sample Results:

All the cyanide results are acceptable for use.

Comments by Laboratory Director or Quality Control Coordinator:

Francis A. Awanya 9/24/97
Review and Date (X) Reviewed ( ) Unreviewed

24 Sept 97
Team Leader and Date (X) Reviewed ( ) Unreviewed

QC Coordinator and Date ( ) Reviewed ( ) Unreviewed

Sylvia Griffin SEP 25 1997
Data Management Coordinator and Date Received

Date Transmitted SEP 25 1997

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

Sylvia Griffin
Data Management Coordinator
Region 5 Central Regional Laboratory
SL - 10C

Received by and Date

Comments:

Method: 335.2NS
Site: General Hydraulics
Date: July 15, 1997

TDF: 5104-110
PWO: ESE51089
WAD: 05-97-1-04

NARRATIVE

Six water samples from General Hydraulics (data set 970311) were collected on June 25, 1997 and were received by CRL on June 26, 1997. Sample 97IE06R01 was acidic (pH was less than 2) when received. The metals aliquot for this sample was obtained to determine whether the sample tags may have been switched; however, the metals aliquot was preserved at a pH less than 2. Since all other sample tags and preservation were proper and consistent, the analyst assumes that the cyanide aliquot for this sample was improperly preserved in the field. It was decided after consultation with CRL staff that this sample should not be analyzed.

The five remaining samples were distilled and analyzed using CRL methods with one deviation. The matrix spike and distilled AQC sample were spiked at a level of 40 ug/l CN instead of the 100 ug/l level required by the distillation method. The distillates were analyzed using a Lachat QuickChem AE analyzer. In evaluation the usability of the data, the method acceptance limits were used on percentage basis (e.g. 100 $\pm$ 15 ug/l became 100 $\pm$ 15%, or 40 $\pm$ 6 ug/l).

All samples were analyzed within the 14-day holding time limit.

All QC audits were in control. All results are acceptable.

J. Gang
9-24-97

GENERAL HYDRAULICS (970311)

CYANIDE RESULTS (UG/L) FOR DATA SET 970311

Sample #	Analysis Date	Concentration	Analyst	Date
97IE06S01	7-7-97	8U	J. Gary	7-15-97
97IE06S02	7-7-97	8U	J. Gary	7-15-97
97IE06D02	7-7-97	8U	J. Gary	7-15-97
97IE06S03	7-7-97	8U	J. Gary	7-15-97
97IE06S04	7-7-97	8U	J. Gary	7-15-97

FAA 9/24/97

GENERAL HYDRAULICS (970311)

CYANIDE RESULTS (UG/L) FOR DATA SET 970311

Sample #	Analysis Date	Concentration	Analyst	Date
97IE06S01	7-7-97	8U	J. Barry	7-15-97
97IE06S02	7-7-97	8U	J. Barry	7-15-97
97IE06D02	7-7-97	8U	J. Barry	7-15-97
97IE06S03	7-7-97	8U	J. Barry	7-15-97
97IE06S04	7-7-97	8U	J. Barry	7-15-97

FAA 9/24/97

LOCKHEED MARTIN ESAT CONTRACT
DATA SET CUSTODY TRANSFER FORM

DATA SET NUMBER 970311 PWO NUMBER ESE51089

SITE NAME: General Hydraulics TDF NUMBER 5104-110

PARAMETER: Cyanide MATRIX: Water

SF DU/ACT NO: TFA ✓ Y _____ /C _____

SAMPLE NUMBERS: 97IE06S01-S04, 97IE06D02, 97IE06R01

NUMBER OF SAMPLES: 6

ESAT APPROVALS:

J. Garry	7-15-97	B. Lynn	7-16-97
Analyst	Date	Task Group Leader	Date
Stephanie N. Tobin	7-16-97	Donna McCa	7-17-97
QA/QC Coordinator	Date	ESAT Team Manager	Date

COMMENTS: The RLIMS was not operational; RLIMS reports will be submitted after the system becomes operational.

The above identified data set was transferred from ESAT custody to the custody of the U.S. EPA Region V Central Regional Laboratory in its entirety on the indicated date relinquished.

J. Garry	7-17-97	[illegible]	17 July 97
Relinquished by	Date	Received by	Date

EPA APPROVALS:

Francis A. Arvagi 9/22/97
~~EPA WAM~~ REVIEWED — Date

[X] Reviewed
[ ] Unreviewed
[X] Accepted
[ ] Rejected
[ ] Returned: _____ Date

COMMENTS: _____

[illegible] 24 Sep 97
~~Section~~ Chief TL — Date

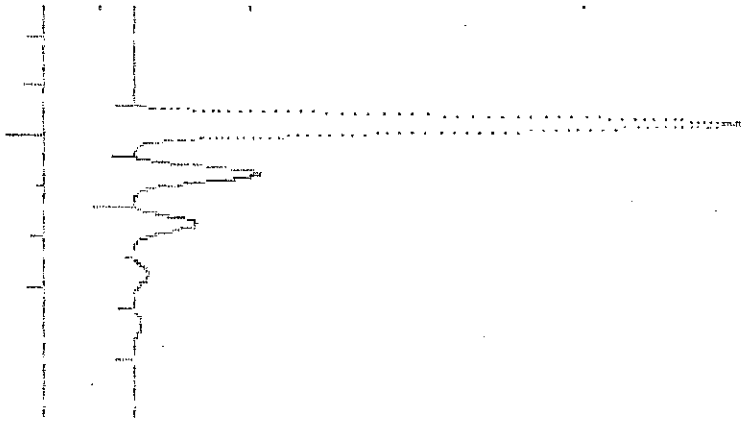
[X] Reviewed [ ] Unreviewed

ESAT RPO — Date

Sylvia Griffin 9/25/97 9/25/97
DATA COORDINATOR/RECD/TRANSMTD

A COPY OF THIS CUSTODY TRANSFER FORM WITH A RECEIVED BY EPA SIGNATURE IS TO BE FILED IN THE TDF FILE. THE ORIGINAL CUSTODY TRANSFER ACCOMPANIES THE DATA SET TO BE APPROVED BY THE EPA AND A COMPLETED COPY RETURNED TO ESAT.

1. Standard A [1]
2. Standard B [1]
3. Standard C [1]
4. Standard D [1]
5. Standard E [1]
6. Standard F [1]



J. Gang
7-15-97

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QuikChem 8E Calibration Report for Calibration 97070702
Method: CYANIDE IN WATER
This calibration was first done or last modified on 07/07/97 at 01:00 pm
This report prepared on 07/07/97 at 01:09 pm

J. Harry
7-15-97

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	Analyte	Units	---- Average Concentrations --- Known	Determined	% Residual	Baseline Corrected Average Absorbance
Standard A,	CYANIDE IN WATER	UG/L	500.000	500.054	-0.01	0.1215

	Analyte	Units	---- Average Concentrations --- Known	Determined	% Residual	Baseline Corrected Average Absorbance
Standard B,	CYANIDE IN WATER	UG/L	100.000	99.778	0.22	0.0245

	Analyte	Units	---- Average Concentrations --- Known	Determined	% Residual	Baseline Corrected Average Absorbance
Standard C,	CYANIDE IN WATER	UG/L	50.000	49.843	0.31	0.0125

	Analyte	Units	---- Average Concentrations --- Known	Determined	% Residual	Baseline Corrected Average Absorbance
Standard D,	CYANIDE IN WATER	UG/L	10.000	10.325	-3.25	0.0030

	Analyte	Units	---- Average Concentrations --- Known	Determined	% Residual	Baseline Corrected Average Absorbance
Standard E,	CYANIDE IN WATER	UG/L	5.000	4.719	5.63	0.0014

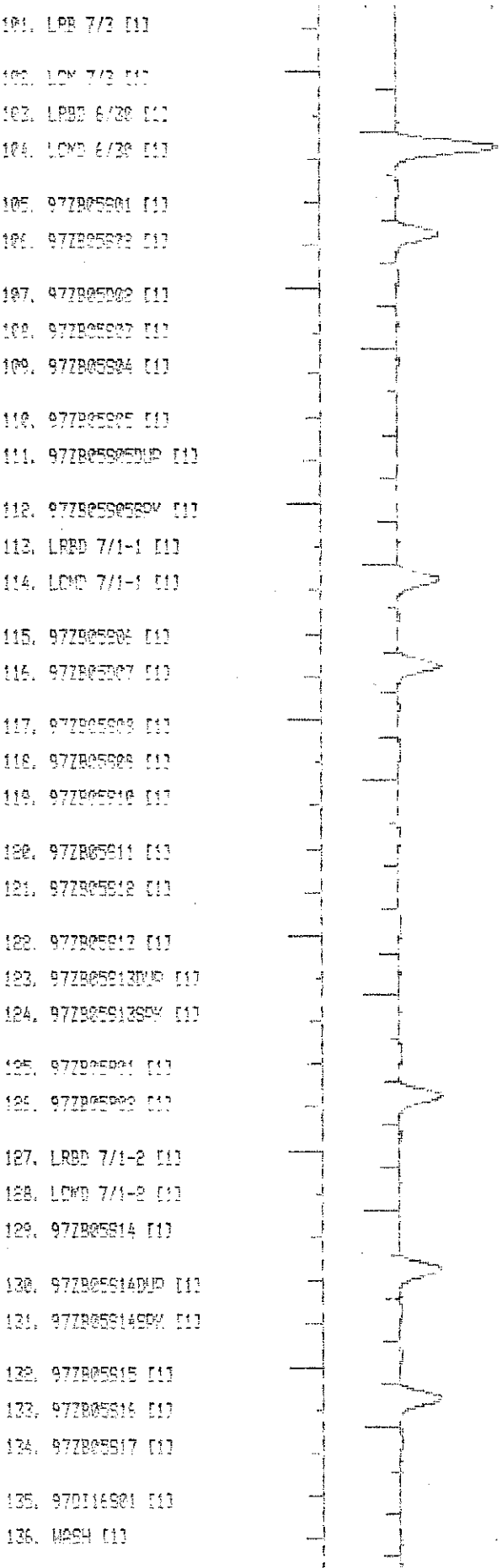
	Analyte	Units	---- Average Concentrations --- Known	Determined	% Residual	Baseline Corrected Average Absorbance
Standard F,	CYANIDE IN WATER	UG/L	0.000	0.141	***.**	0.0001

This calibration may have been modified since it was first run!
If there is any question about this, see the calibration graph displayed
in "Calib Graphs and Stats" menu selection, Results/Approval.

---------- End of Calibration Report ----------

Rack 1 (Ref: 97070708) 07/07/1997, 01:10 pm

J. Gray
7-15-97



138. LRBD 7/2 [1]
139. LCMD 7/2 [1]

140. 97IE06S01 [1]
141. 97IE06S02 [1]

142. 97IE06D02 [1]
143. 97IE06S03 [1]
144. 97IE06S03DUP [1]

145. 97IE06S03SPK [1]
146. 97IE06S04 [1]

147. LPP 7/3 [1]
148. LCK 7/3 [1]

J. Gary
7-15-97

J. Kang
7-15-97

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QuikChek QE Postrun Report for Tray 97070702.RS
Method: CYANIDE IN WATER

This report prepared on 07/07/97 at 01:59 pm.
This tray was run on 07/07/97 at 01:50 pm.
Operator: Tray Template: CN070397

-- Calibration now in effect is Ref: 97070703, 07/07/97, 01:08 pm

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-- Page 1 of report for tray 97070702.RS ----------

Cup#	Sample ID	2 CYANIDE IN WATER UG/L	
101	LRB 7/3	0.004(	Limit = ± 2 µg/L
102	LCM 7/7	99.980	Limit = 100 ± 15 µg/L
103	LRBD 6/30	1.945	Limit = ± 2 µg/L
104	LCMD 6/30	96.646	%R = 96.6 Limit = 100 ± 15%
105	97ZB05S01	1.362	8U
106	97ZB05S02	0.679	8U
107	97ZB05D03	0.759	8U
108	97ZB05S07	-0.085(	8U
109	97ZB05S04	-0.106(	8U
110	97ZB05S05	-0.105(	8U
111	97ZB05S05DUP	-0.059(	8U Difference < 15 µg/L
112	97ZB05S05SPK	39.015	%R = 97.5 Limit = 100 ± ~~15%~~ 20% JG
113	LRBD 7/1-1	0.594(	Limit = ± 2 µg/L
114	LCMD 7/1-1	39.319	%R = 98.3 Limit = 100 ± 15%
115	97ZB05S09	0.515(	8U
116	97ZB05D07	2.434	8U
117	97ZB05S08	0.052(	8U
118	97ZB05S06	0.075	8U
119	97ZB05S10	-0.231(	8U
120	97ZB05S11	1.751	8U
121	97ZB05S12	-0.185(	8U
122	97ZB05S13	-0.172(	8U
123	97ZB05S13DUP	2.054	8U
124	97ZB05S13SPK	39.283	%R = 98.5 Limit = 100 ± ~~15%~~ 20% JG
125	97ZB05P01	0.394(	8U
126	97ZB05P02	-0.040(	8U
127	LRBD 7/1-2	-0.052(	Limit = ± 2 µg/L

) Concentration was significantly greater than the high standard's concentration.

(Concentration was significantly less than the lowest non-zero standard's concentration.
(If sample was diluted, concentration after dilution is shown.

Report for tray 97070702.RS continued on next page . . .

J. Gray 7-15-97

Cup#	Sample ID	CYANIDE IN WATER UG/L	
128	LCMD 7/1-2	38.973	%R = 97.4 Limit = 100 ± 15%
129	97I005914	0.739	8U
130	97I005914DUP	0.471(	8U Difference < 15 ug/L
131	97I005914SPK	38.839	%R = 97.1 Limit = 100 ± 20%
132	97I005915	0.657	8U
133	97I005916	-0.010(	8U
134	97I005917	-0.344(	8U
135	970116501	0.951(	8U
136	WSSH	-0.427(	
137	WSSH	-0.462(	
138	LRSD 7/2	0.317(	Limit = ± 2 ug/L
139	LCMD 7/2	39.078	%R = 97.7 Limit = 100 ± 15%
140	971E06501	0.528(	8U
141	971E06502	-0.250(	8U
142	971E06D02	0.029(	8U
143	971E06502	0.074(	8U
144	971E06502DUP	0.290(	8U Difference < 15 ug/L
145	971E06502SPK	39.364	%R = 98.4 Limit = 100 ± 20%
146	971E06504	0.695	8U
147	LRB 7/3	-0.309(	Limit = ± 2 ug/L
148	LCK 7/3	101.643	%R = 101.6 Limit = 100 ± 15 %

970298

970131

970311

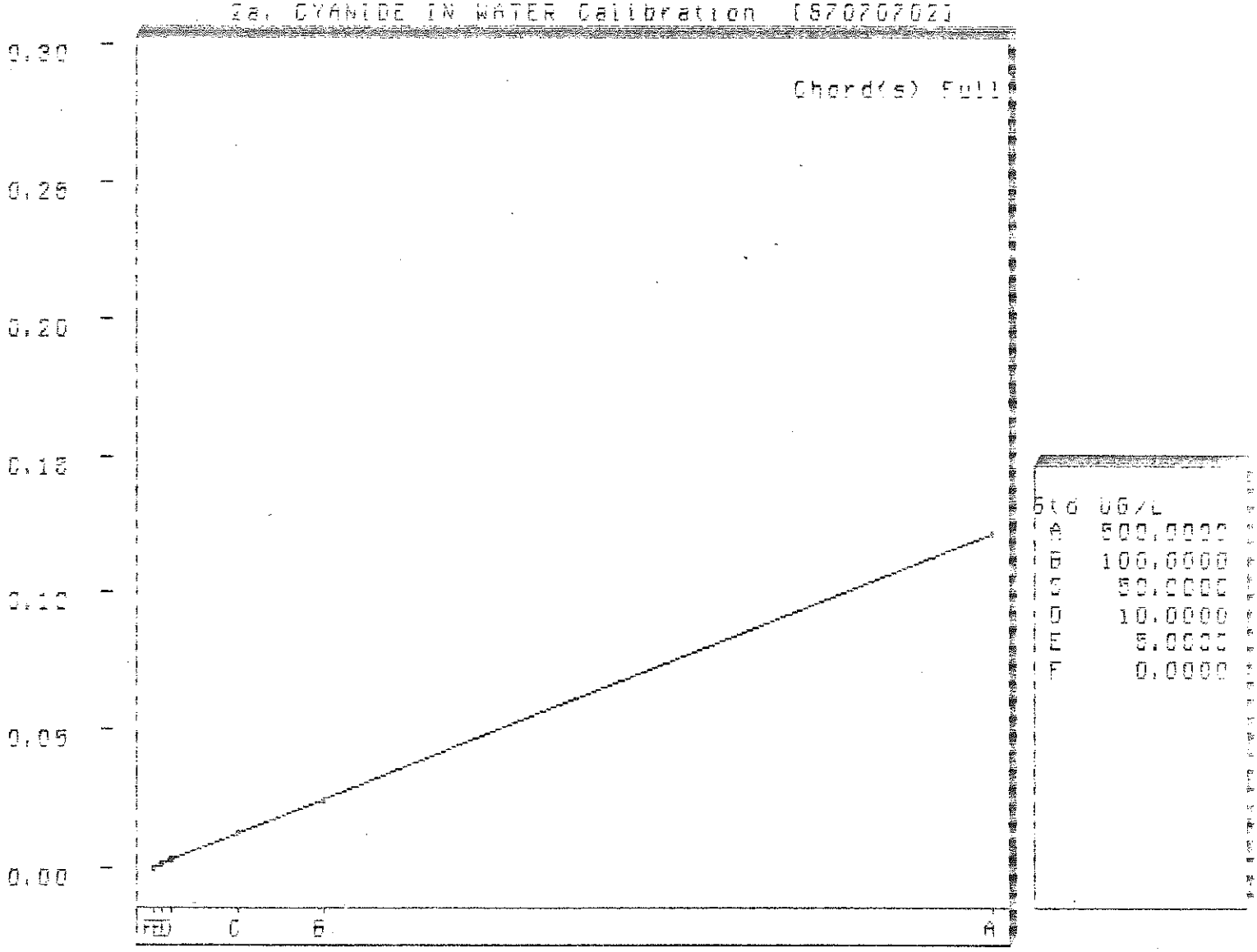
) Concentration was significantly greater than the high standard's concentration.

(Concentration was significantly less than the lowest non-zero standard's concentration.
(If sample was diluted, concentration after dilution is shown.

---------- End of Report for Tray 97070702.RS ----------

J. Barry
7-15-97

2a. CYANIDE IN WATER Calibration [87070702]



Calibration Sequence: ABCDEF

J. Barry
7-15-97

Calibration Statistics Report

Cal Ref: 97070702 07/07/97 02:02 pm
Method: CYANIDE1

Channel: CYANIDE IN WATER

Correlation Coefficients

Seg	Stds	Full	Chord 1	Chord 2	Chord 3	Chord 4	Chord 5
1	A-D	1.0000	0.9999	1.0000	1.0000	1.0000	0.9934 ?
2	D-F	0.9976	0.9987	0.9964	0.9984	0.9969	0.9207 ?

Percent Standard Deviation in Slope

1	A-D	0.1	0.5	0.2	0.2	0.5	5.8
2	D-F	4.9	3.6	6.1	4.0	5.5	29.3

J Gary
7-15-97

CN in water

Analyst
T. Ganz
7-2-97

Distilled 5 samples + QC
data set 970391

97IE06 S01
S02
D02
S03
S03 dup
S03 spike
S04