

H0089-T/W

0048939

Thermo NUtech

1030 Wright Avenue
P.O. Box 104
Diamond, CA 94616
TEL: (415) 831-1000 FAX: (415) 831-1043

August 8, 1997

Ms. Doris Ayres
Bechtel Hanford Company
1022 Lee Boulevard
Richland, WA 99352

Reference: P.O. # TSH-SBV-207925
SDG H0089 (Recra Order 9707L537)

Dear Ms. Ayres:

Enclosed is the analytical report for samples received at Thermo NUtech on July 22, 1997 from SAF No. B97-148 for the analysis of TCLP leachate samples for lead. The preliminary data were faxed to you on August 7, 1997.

Please do not hesitate to call if you have any questions.

Sincerely,

Dolores Sanchez
Dolores Sanchez
Program Coordinator

Enclosure: Report



COVER PAGE - INORGANIC ANALYSES DATA PACKAGE

SDG#: H0089
Laboratory Batch: 9707L537

W.O.#: 10985-001-001-9999-00
Collection Date: 07-16-97

<u>SAMPLE ID</u>	<u>LABORATORY ID</u>
BOLBX0	013
BOLBX1	014
BOLBX2	015
BOLBX3	016
BOLBY8	017
BOLCO0	018
BOLCO2	019
BOLBW5	020
BOLBW6	021
BOLBW7	022
BOLBW8	023
BOLBW9	024





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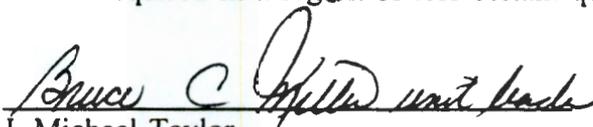
Recra LabNet Philadelphia Analytical Report

Client : TNU-HANFORD
RFW# : 9707L537

W.O.# : 10985-001-001-9999-00
Date Received: 07-23-97

METALS CASE NARRATIVE

1. This narrative covers the analyses of 12 TCLP leachate samples.
2. Samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. The cooler temperature has been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within control limits.
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits.
7. All preparation/method blanks were within method criteria. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. The laboratory control sample (LCS) was within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. Matrix QC could not be performed due to insufficient sample volume.
11. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.


for J. Michael Taylor
Vice President and Laboratory Manager
Lionville Analytical Laboratory

8-6-97
Date

skl/m07-537

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 012 pages.

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METALS METHODS GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this RFW Lot#: 9707L537

Leaching Procedure: 1310 1311 1312 Other: _____

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050A 3051 200.7 SS17
Other: _____

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Antimony	<u>6010A</u> <u>7041</u> ⁵	<u>200.7</u> <u>204.2</u>			<u>99</u>
Arsenic	<u>6010A</u> <u>7060A</u> ⁵	<u>200.7</u> <u>206.2</u>	<u>3113B</u>		<u>99</u>
Barium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Beryllium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Bismuth	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Boron	<u>6010A</u> ¹	<u>200.7</u>			<u>99</u>
Cadmium	<u>6010A</u> <u>7131A</u> ⁵	<u>200.7</u> <u>213.2</u>			<u>99</u>
Calcium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Chromium	<u>6010A</u> <u>7191</u> ⁵	<u>200.7</u> <u>218.2</u>			<u>SS17</u>
Cobalt	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Copper	<u>6010A</u> <u>7211</u> ⁵	<u>200.7</u> <u>220.2</u>			<u>99</u>
Iron	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Lead	<u>6010A</u> <u>7421</u> ⁵	<u>200.7</u> <u>239.2</u>	<u>3113B</u>		<u>99</u>
Lithium	<u>6010A</u> <u>7430</u> ⁴	<u>200.7</u>		<u>1620</u>	<u>99</u>
Magnesium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Manganese	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Mercury	<u>7470A</u> ³ <u>7471A</u> ³	<u>245.1</u> ² <u>245.5</u> ²			<u>99</u>
Molybdenum	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Nickel	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Potassium	<u>6010A</u> <u>7610</u> ⁴	<u>200.7</u> <u>258.1</u> ⁴			<u>99</u>
Rare Earths	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Selenium	<u>6010A</u> <u>7740</u> ⁵	<u>200.7</u> <u>270.2</u>	<u>3113B</u>		<u>99</u>
Silicon	<u>6010A</u> ¹	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silica	<u>6010A</u> ¹	<u>200.7</u>		<u>1620</u>	<u>99</u>
Silver	<u>6010A</u> <u>7761</u> ⁵	<u>200.7</u> <u>272.2</u>			<u>99</u>
Sodium	<u>6010A</u> <u>7770</u> ⁴	<u>200.7</u> <u>273.1</u> ⁴			<u>99</u>
Strontium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Thallium	<u>6010A</u> <u>7841</u> ⁵	<u>200.7</u> <u>279.2</u> <u>200.9</u>			<u>99</u>
Tin	<u>6010A</u> ¹	<u>200.7</u>			<u>99</u>
Titanium	<u>6010A</u> ¹	<u>200.7</u>			<u>99</u>
Uranium	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>
Vanadium	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Zinc	<u>6010A</u>	<u>200.7</u>			<u>99</u>
Zirconium	<u>6010A</u> ¹	<u>200.7</u> ¹		<u>1620</u>	<u>99</u>

Other: _____

Method: _____

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METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.

* = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

MB = Method or Preparation Blank.

MS = Matrix Spike.

MSD = Matrix Spike Duplicate.

REP = Sample Replicate

LCS = Laboratory Control Sample.

NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

RFVW 21-21L-033/N-10/96

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 08/03/97

CLIENT: TNU-HANFORD

RECRA LOT #: 9707L537

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-013	BOLBK0	Lead, TCLP Leachate	146	UG/L	17.2	1.0
-014	BOLBK1	Lead, TCLP Leachate	382	UG/L	17.2	1.0
-015	BOLBK2	Lead, TCLP Leachate	2180	UG/L	17.2	1.0
-016	BOLBK3	Lead, TCLP Leachate	6080	UG/L	17.2	1.0
-017	BOLBY8	Lead, TCLP Leachate	112	UG/L	17.2	1.0
-018	BOLCO0	Lead, TCLP Leachate	17.2 u	UG/L	17.2	1.0
-019	BOLCO2	Lead, TCLP Leachate	39.9	UG/L	17.2	1.0
-020	BOLBW5	Lead, TCLP Leachate	4620	UG/L	17.2	1.0
-021	BOLBW6	Lead, TCLP Leachate	1190	UG/L	17.2	1.0
-022	BOLBW7	Lead, TCLP Leachate	17.2 u	UG/L	17.2	1.0
-023	BOLBW8	Lead, TCLP Leachate	17.2 u	UG/L	17.2	1.0
-024	BOLBW9	Lead, TCLP Leachate	48.9	UG/L	17.2	1.0

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Recra LabNet - Lionville Laboratory
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD

DATE RECEIVED: 07/23/97

RFW LOT # :9707L537

<u>CLIENT ID /ANALYSIS</u>	<u>RFW #</u>	<u>MTX</u>	<u>PREP #</u>	<u>COLLECTION</u>	<u>EXTR/PREP</u>	<u>ANALYSIS</u>
BOLBX0						
TCLP	001	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBX1						
TCLP	002	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBX2						
TCLP	003	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBX3						
TCLP	004	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBY8						
TCLP	005	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLCO0						
TCLP	006	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLCO2						
TCLP	007	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBW5						
TCLP	008	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBW6						
TCLP	009	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBW7						
TCLP	010	SO	97LTO113	07/16/97	07/25/97	07/26/97

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Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD

DATE RECEIVED: 07/23/97

RFW LOT # : 9707L537

CLIENT ID / ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOLBW8						
TCLP	011	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBW9						
TCLP	012	SO	97LTO113	07/16/97	07/25/97	07/26/97
BOLBX0						
LEAD, TCLP LEACHATE	013	W	97L1461	07/26/97	07/31/97	08/02/97
BOLEX1						
LEAD, TCLP LEACHATE	014	W	97L1461	07/26/97	07/31/97	08/02/97
BOLEX2						
LEAD, TCLP LEACHATE	015	W	97L1461	07/26/97	07/31/97	08/02/97
BOLEX3						
LEAD, TCLP LEACHATE	016	W	97L1461	07/26/97	07/31/97	08/02/97
BOLBY8						
LEAD, TCLP LEACHATE	017	W	97L1461	07/26/97	07/31/97	08/02/97
BOLCO0						
LEAD, TCLP LEACHATE	018	W	97L1461	07/26/97	07/31/97	08/02/97
BOLCO2						
LEAD, TCLP LEACHATE	019	W	97L1461	07/26/97	07/31/97	08/02/97
BOLBW5						
LEAD, TCLP LEACHATE	020	W	97L1461	07/26/97	07/31/97	08/02/97

0008

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD

DATE RECEIVED: 07/23/97

RFW LOT # :9707L537

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOLBW6						
LEAD, TCLP LEACHATE	021	W	97L1461	07/26/97	07/31/97	08/02/97
BOLBW7						
LEAD, TCLP LEACHATE	022	W	97L1461	07/26/97	07/31/97	08/02/97
BOLBW8						
LEAD, TCLP LEACHATE	023	W	97L1461	07/26/97	07/31/97	08/02/97
BOLBW9						
LEAD, TCLP LEACHATE	024	W	97L1461	07/26/97	07/31/97	08/02/97

LAB QC:

LEAD LABORATORY	LC1 BS	W	97L1461	N/A	07/31/97	08/02/97
LEAD, TCLP LEACHATE	MB1	W	97L1461	N/A	07/31/97	08/02/97
LEAD, TCLP LEACHATE	MB2	W	97L1461	N/A	07/31/97	08/02/97

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