

010001

SOUTHWEST RESEARCH INSTITUTE

NUCLEAR PROJECT

CLIENT: Division 20

TASK ORDER: 061104-3

SRR: 30004

SDG: 289054

CASE: K. Chiang

VTSR: November 3, 2006

PROJECT#: 06002.01.322

FINAL REPORT

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010002

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/03/06

Matrix: Solid

Project No.: 06002.01.322

Task Order: 061104-3

SRR: 30004

Method: 6020 MOD

Sample ID	Lab System ID	Chromium Result (ug/sample)
PBW - M14S1	----	<0.00500
LCSW - M14S1	----	3.88
True Value	----	4.00
Recovery	----	97.0%
Sample E1	289054	0.130
Sample E3	289055	3.99
Sample EW1	289056	8.10
Sample EW3	289057	0.247

Reporting Limit:

0.00500 ug/sample

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010003

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/03/06

Matrix: Solid

Project No.: 06002.01.322

Task Order: 061104-3

SRR: 30004

Method: 218.6 MOD

Sample ID	Lab System ID	Hexavalent Chromium Result (ug/sample)
PBW	----	<0.01
LCSW	----	0.498
True Value	----	0.5
Recovery	----	99.6%
Sample E1	289054	<0.01
Sample E3	289055	0.0119
Sample EW1	289056	<0.01
Sample EW3	289057	<0.01

Reporting Limit:

0.01 ug/sample

010004

SOUTHWEST RESEARCH INSTITUTE

NUCLEAR PROJECT

CLIENT: Division 20

TASK ORDER: 061104-3

SRR: 30004

SDG: 289054

CASE: K. Chiang

VTSR: November 3, 2006

PROJECT#: 06002.01.322

Task Orders/01-QPP-015

Laboratory Task Order

010005

TO #: 061104-3 Revision: 0

Project(s): 06002.01.322
 Manager(s): SPIES, RADONNA
 To PM: 11/15/06
 To QA: 11/15/06
 To Client: 11/16/06

SDG: 289054
 VTSR: 11/03/06
 CASE: DR. CHAING

SRR #'s: 30004
 Client(s): Div. 20

Instructions

DIVISION 20 - Dr. Ken Chiang.
 FOUR specimen samples received on 11/03/06 for total chromium and hexavalent chromium after DI Water Leach.
 Per instructions received from Dr. Ken Chiang, "Please try no to touch the speciment surface."
 Email prelim report, excel and PDF format, to Dr. Chain, ext. 2308, kchiang@swri.org. Send forms only, archive all else.
 RETURN ALL SPECIMENS TO DR. CHAING.

Documents Related to this task order: 26658[COC 30004]

Deliverables --> Hard Copy: -YES- EDD: -YES- PDF: -YES-

Test: CR6_7199

Holding: 1 days from CED

Section: WETCHEM

Hexavalent Chromium by Method 7199 (IC) - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

Test: ICP-6010B

Holding: 180 days from CED

Section: METALS

ICP Method 6010B Total Metals - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

Test: LEACH-DIWATER

Holding: 180 days from CED

Section: METALPREP

LEACH DI WATER - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

SDG: 289054
 VTSR: 11/03/06
 CASE: DR. CHAING

SRR #s: 30004
 Client(s): Div. 20

Project(s): 06002.01.322
 Manager(s): SPIES, RADONNA
 To PM: 11/15/06
 To QA: 11/15/06
 To Client: 11/16/06

Instructions

DIVISION 20 - Dr. Ken Chiang.
 FOUR specimen samples received on 11/03/06 for total chromium and hexavalent chromium after DI Water Leach.
 Per instructions received from Dr. Ken Chiang, "Please try no to touch the speciment surface."
 Email prelim report, excel and PDF format, to Dr. Chain, ext. 2308, kchiang@swri.org. Send forms only, archive all else.
 RETURN ALL SPECIMENS TO DR. CHAING.

Documents Related to this task order: 26658[COC 30004]

Deliverables --> Hard Copy: -YES- EDD: -YES- PDF: -YES-

Test: CR6_7199
 Section: WETCHEM

Holding: 1 days from CED

Hexavalent Chromium by Method 7199 (IC) - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

Test: ICP-6010B
 Section: METALS

Holding: 180 days from CED

ICP Method 6010B Total Metals - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

Test: LEACH-DIWATER
 Section: METALPREP

Holding: 180 days from CED

LEACH DI WATER - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

01-QPP-015
Division 01
Revision 6
June 2006

Document No. _____



Chemistry and Chemical
Engineering Division

QUALITY PROJECT PLAN FOR

**PERFORMANCE OF CHEMICAL ANALYSES
FOR COMMERCIAL NUCLEAR POWER PLANTS
WITHIN THE DEPARTMENT OF ANALYTICAL
AND ENVIRONMENTAL CHEMISTRY**

SOUTHWEST RESEARCH INSTITUTE
Chemistry and Chemical Engineering Division
6220 CULEBRA ROAD, SAN ANTONIO, TEXAS 78238

QUALITY PROJECT PLAN FOR PERFORMANCE OF CHEMICAL ANALYSES
FOR COMMERCIAL NUCLEAR POWER PLANTS
WITHIN THE DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY

SwRI AUTHORIZATION SIGNATORIES

This is to certify that this Quality Project Plan of Southwest Research Institute (SwRI) has been reviewed and approved by the following personnel:



JO ANN BOYD (210) 522-2169
Quality Assurance Manager

6/28/06

DATE



REZA KARIMI (210) 522-2412
Director, Department of Analytical and Environmental Chemistry

6/28/06

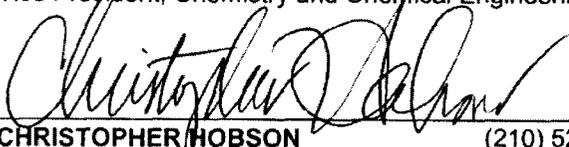
DATE



MICHAEL G. MACNAUGHTON (210) 522-5162
Vice President, Chemistry and Chemical Engineering Division

6/28/06

DATE



CHRISTOPHER HOBSON (210) 522-5838
Quality Assurance Engineer

7/6/2006

DATE

TABLE OF CONTENTS

	Page
1.0 INTRODUCTION.....	1
2.0 SCOPE	1
3.0 REFERENCES.....	1
4.0 APPLICABLE SECTIONS OF SwRI PROGRAM QUALITY PLAN (PQP-NUCLEAR).....	1
4.1 Indoctrination and Training.....	1
4.2 Qualification of Personnel.....	2
4.3 Design Control	2
4.4 Right of Access.....	2
4.5 Control of Supplier-Generated Documents	2
4.6 Acceptance of Services Only	3
4.7 Commercial Grade Items	3
4.8 Inspection	5
4.9 Inspection and Testing	5
4.10 Handling, Storage, Packaging, Preservation, and Delivery	5
4.11 Quality Assurance Records	6
4.12 10 CFR, Part 21	6
4.13 Certified Test Report.....	6
4.14 Valid Documents List.....	7
5.0 HISTORY OF REVISIONS	7

**PERFORMANCE OF CHEMICAL ANALYSES
FOR COMMERCIAL NUCLEAR POWER PLANTS WITHIN THE
DEPARTMENT OF ANALYTICAL AND ENVIRONMENTAL CHEMISTRY**

1.0 INTRODUCTION

This Quality Project Plan (QPP) defines the Quality Assurance (QA) program requirements for personnel providing the chemical analyses for commercial nuclear power plants. Southwest Research Institute (SwRI) *Program Quality Plan (PQP-Nuclear), Nuclear Services* shall implement the QA requirements. Project activities controlled by the PQP-Nuclear shall be accomplished as specified by the appropriate sections of **01-QAP-004**, *Quality Assurance Plan for Analytical and Environmental Services* and/or nationally recognized testing methods as specified on individual purchase orders. This QPP shall be applied to all projects initiated for nuclear utilities in the Department of Analytical and Environmental Chemistry. If, as a result of complexity, duration, or other factors, it is determined that a unique, project-specific quality plan is required, the project QAE shall notify the Project Manager and a project-specific quality plan shall be generated in accordance with **SOP-01-4.2.1**, *Preparation and Revision of Documented Procedures*.

2.0 SCOPE

This Quality Project Plan shall be applied to the chemical analyses performed for commercial nuclear power plants by the Department of Analytical and Environmental Chemistry within the Chemistry and Chemical Engineering Division. Although the majority of the work performed for nuclear facilities resides within the Department of Analytical and Environmental Chemistry, other departments within the division may utilize this Quality Project Plan as deemed necessary when nuclear projects are conducted.

3.0 REFERENCES

- 3.1 *SwRI Quality System Manual – 2000*
- 3.2 *10 CFR 50, Appendix B, ASME NQA-1*
- 3.3 *SwRI Program Quality Plan (PQP-Nuclear), Nuclear Services*
- 3.4 *01-QAP-004, Quality Assurance Plan for Analytical and Environmental Services*

4.0 APPLICABLE SECTIONS OF SwRI PROGRAM QUALITY PLAN (PQP-NUCLEAR)

4.1 Indoctrination and Training

- 4.1.1 Personnel performing duties affecting quality shall receive quality training to the *SwRI Program Quality Plan (PQP-Nuclear), Nuclear Services* prior to performing any work on projects for nuclear utilities. This training will be conducted either by Institute Quality Systems (IQS) or Division 01 Quality Assurance personnel and documentation shall be evident in the personnel training files maintained in Division

01 Quality Assurance.

- 4.1.2 Indoctrination and training of personnel shall be conducted in accordance with **SOP-01-6.2.1, *Qualification and Training***.

4.2 Qualification of Personnel

- 4.2.1 Testing personnel shall be designated as qualified to perform applicable project activities as specified in **SOP-01-6.2.1, *Qualification and Training***.
- 4.2.2 During the performance of each testing process, testing personnel shall have access to the necessary documented procedures, i.e., QPP, QAP, Task Order, Division Quality System Standard Operating Procedures (SOPs), and applicable test/analytical procedures (TAPs) available for ready reference.
- 4.2.3 Any person who has not performed testing activities associated with any particular method being used for nuclear utilities projects for a period of one year shall be reevaluated prior to the conduct of the test.
- 4.2.4 Quality Assurance personnel witnessing the testing process for nuclear utilities shall have documented evidence of qualifications maintained by Institute Quality Systems or Division 01 Quality Assurance.

4.3 Design Control

Not applicable to activities conducted within the Department of Analytical and Environmental Chemistry.

4.4 Right of Access

- 4.4.1 Procurement documents shall provide for access to the suppliers' facilities and records for surveillance, inspection, or audit by SwRI and clients.
- 4.4.2 Where appropriate, quality clause **Q32** shall be noted on the procurement documents to indicate that right of access for inspection and surveillance of activities associated with the order shall be afforded to SwRI and clients.

4.5 Control of Supplier-Generated Documents

- 4.5.1 Client documents shall be controlled in accordance with **SOP-01-4.2.1, *Preparation and Revision of Documented Procedures***. These procedures provide the requirements for the preparation, review, approval, issue, distribution, and revision of documents controlled by the Chemistry and Chemical Engineering Division.
- 4.5.2 Documents may be controlled as Plans or Work Instructions and shall be accessible through the Division Intranet link, ***Contract Requirements*** as PDF files.
- 4.5.3 Nationally recognized test methods shall be of the most current issue or as specified in the purchase order. Task orders shall identify the applicable test methods to be used on the nuclear project.

4.6 Acceptance of Services Only

Not applicable to activities conducted within the Department of Analytical and Environmental Chemistry.

4.7 Commercial Grade Items

4.7.1 Where an item is to be incorporated into a test or deliverable to a client, and that item is not subject to design or specification requirements that are unique to nuclear facilities, used in applications other than nuclear facilities, and procured from the supplier on the specifications set forth in the manufacturers' published product and description, the item shall be considered "commercial grade".

4.7.2 Chemical reagents and standards used for testing purposes shall be ordered to specific chemical grades and certificates of analysis shall be required with each lot.

4.7.3 Controls for procurement planning, supplier selection, supplier performance evaluation, and acceptance of procured items and services other than chemical reagents and standards shall be as identified in **SOP-01-7.4.1, Purchasing**, and any referenced document within that procedure.

4.7.4 Receipt inspection of chemical reagents, standards, and test items for use on nuclear safety-related projects shall be performed by department personnel and documented on the *SwRI Receipt Traveler* or **FRM-109, Item Receipt Report**, as specified in **SOP-01-8.2.4, Monitoring and Measurement**. Any discrepancy such as a damaged container or container label shall be documented on the form and the client shall be contacted for disposition.

4.7.5 Prior to acceptance of a commercial grade item, the receipt inspection shall determine the following:

- (a) Damage was not sustained during shipment;
- (b) The item has satisfied the specified acceptance criteria; and
- (c) Specified documentation, as applicable to the item, was received and is acceptable.

4.7.6 Receipt inspection of chemical reagents and standards shall also consist of verification of chemical type, grade, container integrity, certificate of analysis, and shelf life, where applicable. Upon acceptance of chemical reagents and standards, the containers shall be labeled with the following:

- (a) Chemical name;
- (b) Chemical grade;
- (c) Lot code;

- (d) Date received; and
 - (e) Shelf life, when applicable.
- 4.7.7 Expired shelf life items shall not be used for testing purposes.
- 4.7.8 Lot codes of chemical reagents and standards used during equipment standardization and testing shall be recorded on the individual testing data sheets to provide traceability.
- 4.7.9 Samples supplied to SwRI for testing shall be received by the Sample Custodian and logged into the laboratory logbook. Sample documentation and sample custody shall be maintained in accordance with **TAP-01-0407-001**, *Sample Receipt Inspection*, and **TAP-01-0407-035**, *Organic and Inorganic Sample Security*.
- 4.7.10 Samples supplied to SwRI for testing shall be labeled with the following:
- (a) Sample control number;
 - (b) Purchase order number;
 - (c) Purchase order line item number, as applicable;
 - (d) Task order number;
 - (e) Nuclear QA label; and
 - (f) Sample retention date, when applicable.
- 4.7.11 In the event that samples are damaged upon receipt, a **Sample Discrepancy Record** shall be generated from the Division Intranet.
- 4.7.12 The testing task order shall list the project number, tests required, test methods required, and shall be labeled *Nuclear Quality*.
- 4.7.13 Identification and traceability shall be maintained in accordance with **SOP-01-7.5.1**, *Item Identification and Traceability*.

4.8 Inspection

- 4.8.1 Inspection for acceptance shall be performed by qualified persons other than those who conduct or directly supervise the work being inspected.
- 4.8.2 Institute Quality System (IQS) personnel shall perform surveillance activities as required to ensure compliance with the contract and this Quality Project Plan. Specific areas in which IQS may perform surveillance activities include, but are not limited to, the following:
- (a) Receiving inspection and labeling of chemical reagents, standards, and testing samples;
 - (b) Testing processes;
 - (c) Calibration and major equipment;
 - (d) Sample and record retention; and
 - (e) Test records.

4.9 Inspection and Testing

- 4.9.1 Required tests for acceptance shall be conducted under appropriate environmental conditions using the tools and equipment necessary to conduct the test in a manner to fulfill test requirements and acceptance criteria.
- 4.9.2 Tests shall be conducted, controlled, and verified in accordance with **SOP-01-8.2.4, *Monitoring and Measurement***.
- 4.9.3 Controls for measuring and test equipment shall be as specified in **SOP-01-7.6.1, *Control of Measuring and Test Equipment***.
- 4.9.4 Controls for identification, segregation, reporting, and resolution of nonconforming items and conditions shall be as specified in **SOP-01-8.3.1, *Nonconformance Reporting***.

4.10 Handling, Storage, Packaging, Preservation, and Delivery

- 4.10.1 Controls for handling, storage, packaging, preservation, and delivery of items are identified in **SOP-01-7.5.3, *Handling, Storage, Packaging, Protection, and Delivery of Items***.
- 4.10.2 Samples specified on the purchase order to be returned to the client shall be prepared and packaged as specified on the purchase order. Each package shall be marked legibly and indelibly with the purchase order/release number and line item number(s) relevant to the package.

4.11 Quality Assurance Records

- 4.11.1 Quality assurance records shall furnish documentary evidence that items or activities meet specified quality requirements. Documents that ensure this evidence include **TAP-01-0407-014**, *Inventory of Case File Purges*, and **SOP-01-4.2.4**, *Storage and Maintenance of Quality Records*. These documents and this QPP ensure that QA records shall be legible, identifiable, retrievable, and maintained in dual storage.
- 4.11.2 Records shall be traceable to associated items and activities and shall accurately reflect the work accomplished or information required.
- 4.11.3 Documents shall be considered valid records only if stamped, initialed or signed and dated by authorized personnel or otherwise authenticated.
- 4.11.4 Records of test analyses performed by the Department of Analytical and Environmental Chemistry are classified as *nonpermanent* and shall be retained for a minimum of five years. Nonpermanent records are those required to show evidence that an activity was performed in accordance with the applicable requirements, but need not be retained for the life of the item. Based on the use of the final data, the client shall be responsible for determining and implementing permanent storage requirements.
- 4.11.5 In order to satisfy duplicate storage requirements, one copy of the QA record shall be maintained by the Project Manager in Building 70 and a separate copy shall be maintained in the Division Quality Assurance Archives in Building 201. Storage requirements shall be as stated in **SOP-01-4.2.4**, *Storage and Maintenance of Quality Records*, to ensure protection against the risk of damage or destruction.

4.12 10 CFR, Part 21

- 4.12.1 SwRI procurement documents shall include requirements for reporting and approving disposition of supplier nonconformances and, when required, compliance to 10 CFR, Part 21.
- 4.12.2 The Manager of Institute Quality Assurance or Director of Institute Quality Systems shall determine if a nonconforming condition is reportable under 10 CFR, Part 21, and initiate reporting and condition in accordance with the SwRI Operating Policies and Procedures (OPP). Safety hazards or defects that could create a substantial safety hazard shall be reported. Substantial safety hazard means a loss of safety function to the extent that there is a major reduction in the degree of protection provided to public health and safety.

4.13 Certified Test Report

The Project Manager, Division 01 QA Manager, and IQS Management as complying with all contractual requirements shall certify test reports. The certified test report shall reference the purchase order/release number, the test methods performed, and the purchase order/release line item number.

CHEMISTRY AND CHEMICAL ENGINEERING DIVISION
Division 01 Quality Project Plan

01-QPP-015
Division 01
Rev 6/June 2006
Page 7 of 7

4.14 Valid Documents List

The Department of Analytical and Environmental Chemistry task order shall specify all applicable documents and appropriate document revision level for each document. The task order shall then serve as the Valid Documents List (VDL) for each individual project.

5.0 HISTORY OF REVISIONS

Versions 0 through 3 of this plan are maintained on record in Division 01 Quality Assurance.

Revision 4

Title of document changed from the Standard Project Quality Plan *SPQP-CH/AN* to Quality Project Plan, *QPP-015*

Extensive revision to comply with Project Quality Plan PQP-Nuclear, *Nuclear Services*, which replaces SwRI NQAPM, *Nuclear Quality Assurance Program Manual*.

Revision 5

Revised 4.1.1 to include designated Division 01 QA staff to conduct pertinent nuclear training sessions to the SwRI Program Quality Plan (PQP-Nuclear), *Nuclear Services*

Revised step 4.2.4 to include Division QA as an entity along with IQS, to maintain documented evidence of qualifications.

Revision 6

Revised 4.13 to include "Division 01 QA Manager" for the minimum approval signatures for test procedures for nuclear utility final test reports and to replace "Institute Quality Assurance" with "IQS Management"



PERSONNEL SIGNATURE SHEET FOR PLANS

010017

I have read, and understand the document listed below. By affixing my signature below, I am aware that I am responsible for abiding by and following the requirements identified in the plan specified below. If I become aware of any deviations from this document, I will inform my supervisor.

Doc Number, Title, and (Rev No/Year): QPP-015, Performance of Chemical Analyses for Commercial Nuclear Power Plants within the Department of Analytical & Environmental Chemistry (Rev 6/July 06)

Table with 4 columns: Printed Name, Signature, Date, Tel Extension. Contains handwritten entries for Jenny Zhang, Pamela Piccini, Jason D. Hernandez, and William L. Barclay Jr.

Supervisor's/Manager's Signatures

The Personnel whose signatures appear above have been trained and certified in the contents of the document identified above:

Table with 4 columns: Printed Name, Signature, Date, Tel Extension. Intended for supervisor/manager signatures.



PERSONNEL SIGNATURE SHEET FOR PLANS

I have read, and understand the document listed below. By affixing my signature below, I am aware that I am responsible for abiding by and following the requirements identified in the plan specified below. If I become aware of any deviations from this document, I will inform my supervisor.

Doc Number, Title, and (Rev No/Year): QPP-015, Performance of Chemical Analyses for Commercial Nulcar Power Plants within the Dept of Analytical and Environmental Chemistry (Rev 6/July 06)

Table with 4 columns: Printed Name, Signature, Date, Tel Extension. Contains handwritten entries for Valerie DeJesus, Warren A. Naegeli, Carolina Orduna, Dacia Harris, Jackie Ranger, JAMES JOES, Bernie Villaseñor, and Radonna Spus.

Supervisor's/Manager's Signatures

The Personnel whose signatures appear above have been trained and certified in the contents of the document identified above:

Printed Name Signature Date Tel Extension



PERSONNEL SIGNATURE SHEET FOR PLANS

I have read, and understand the document listed below. By affixing my signature below, I am aware that I am responsible for abiding by and following the requirements identified in the plan specified below. If I become aware of any deviations from this document, I will inform my supervisor.

Doc Number, Title, and (Rev No/Year): QPP-015, Performance of Chemical Analyses for Commercial Nuclear Power Plants within the Dept of Analytical and Environmental Chemistry (Rev 6/July 06)

Printed Name	Signature	Date	Tel Extension
DAVID A. ANETA		7.13.2006	2776
Marissa A. Rodriguez		7/13/06	2476
Rogee PRASAS		7/13/06	3682
CYNTHIA A. SAUCEDA		7/13/06	5896

Supervisor's/Manager's Signatures

The Personnel whose signatures appear above have been trained and certified in the contents of the document identified above:

Printed Name	Signature	Date	Tel Extension
JOANN BOYD		07/13/06	2169

010020

**SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT**

CLIENT: Division 20

TASK ORDER: 061104-3

SRR: 30004

SDG: 289054

CASE: K. Chiang

VTSR: November 3, 2006

PROJECT#: 06002.01.322

Chain of Custody/Login Paperwork

010022

SAMPLE LIST/CHAIN OF CUSTODY

Southwest Research Institute
 Chemistry and Chemical Engineering Division
 6220 Culebra Road
 San Antonio, Texas 78238-5166

Requested Turnaround:
 2 Weeks
 3 Weeks
 Other:

Shipper Name/Address
 Client: **Div 20**

Client Purchase Order/Other ID: **K. Chiang**
 Site/Zone ID

SwRI Contact: **R. Spis**

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers	Hex Cr	Tot. Cr								
E1	-	-	-	-	-	✓	✓								
E3	-	-	-	-	-	✓	✓								
EW1	-	-	-	-	-	✓	✓								
EW3	-	-	-	-	-	✓	✓								

REMARKS
 Preservation
 a = HCl to pH <2
 b = HNO₃ to pH <2
 c = H₂SO₄ to pH <2
 d = NaOH to pH >12
 e = Cool (4°C±2°C)
 f = Other (specify)

Client: Div. 20
 SRR #30004
 Project #06002.01.322
 Case: K. Chiang
 VTSR: 11/03/06 1100
 Sample(s) Received Intact
 Temperature: 22.0 °C/#027

- Matrix Types:**
 A - Air
 B - Biota
 D - Dust
 E - Emission/Stack
 L - Liquid
 P - Product
 Sd - Solid
 S - Soil
 SED - Sediment
 T - Tissue
 W - Water
 WP - Wipe

- Sample Types:**
 D - Duplicate
 ER - Equipment Rinsate
 ES - Environmental Sample
 FB - Field Blank
 FD - Field Duplicate
 MS - Matrix Spike
 MSD - Matrix Spike Dup
 TB - Trip Blank
- Temp: 22.0°C Therm #: 027

Relinquished by (Print/Signature): **Ken Chiang to RSS** Date: 11/3/06 Time: 11:00
 Received by (Print/Signature): **R. Spis** Date: 11/3/06 Time: 11:00
 Relinquished by (Print/Signature):
 Received by (Print/Signature):

SwRI Project#: **20.06002.01.322**
 Received by SwRI Lab: (Signature) **[Signature]**
 Date: 11/3/06 Time: 11:00

Comments: **Rec'd Intact**

Relinquished by (Print/Signature):
 Date: Time:

Samples Disposed by:
 Date: Time:

SAMPLE LOG-IN SHEET

010023

Lab Name
Southwest Research Institute
Received By (Print Name)
DINO ROMAN
Received By (Signature)

Page 1 of 1
Log-in Date
11/03/2006

Case Number
K. Chiang
Remarks: 06002.01.322

Sample Delivery Group No.

SAS Number
N/A

- 1. Custody Seal(s) Present ~~Absent~~*
Intact/Broken
- 2. Custody Seal Nos. N/A
- 3. Chain-of Custody Records ~~Present~~ Absent*
- 4. Traffic Reports or Packing Lists Present ~~Absent~~
- 5. Airbill Airbill/Sticker
~~Present~~ Absent*
- 6. Airbill No. HAND DELIVERED
- 7. Sample Tags Present ~~Absent~~
- Sample Tag Numbers Listed ~~Not~~
listed on Chain of Custody
- 8. Sample Condition ~~Intact~~ Broken*/
Leaking
- 9. Cooler Temperature 22.0C
- 10. Does Information on custody records, traffic reports, and sample tags agree? ~~Yes~~ No*
- 11. Date Received at Lab 11/03/2006
- 12. Time Received 11:00:00

		Corresponding			Remarks:
EPA Sample #	Sample Tag #	Assigned Lab #	Condition of Sample Shipment, etc		
Sample E1	None	289054	Intact		
Sample E3	None	289055	Intact		
Sample EW1	None	289056	Intact		
Sample EW3	None	289057	Intact		

Sample Transfer

Fraction
Area #
By
On

Inorg
Cub #2

Fraction
Area #
By
On

* Contact SMO and attach record of resolution

Reviewed By
Date

[Signature]
11.06.06

Logbook No. Sample Receipt (30004)
Logbook Page No. 5975 SEC 2, 3 of 3

From: Jennifer Willis [jennifer.willis@swri.org]
Sent: Wednesday, December 20, 2006 1:48 PM
To: kchiang@swri.org
Cc: Radonna S Spies
Subject: Preliminary Sample Results 061104-3



061104-3.pdf



061104-3.xls

Attached are the results for the four samples received on 11/03/06, placed in SRR(S)# 30004, Task Order # 061104-3. The report for Chromium and Hexavalent Chromium are attached as a PDF (061104-3.pdf) and Excel (061104-3.xls) file. Should you have any additional questions, please contact Radonna Spies (ext. 3242)

Jennifer Willis
Southwest Research Institute
Department of Analytical and Environmental Chemistry
Division 01
6220 Culebra Road
San Antonio, Texas 78238
Phone (210) 522.3129
Fax (210) 522.5938

010025

SOUTHWEST RESEARCH INSTITUTE

NUCLEAR PROJECT

CLIENT: Division 20

TASK ORDER: 061104-3

SRR: 30004

SDG: 289054

CASE: K. Chiang

VTSR: November 3, 2006

PROJECT#: 06002.01.322

Copies of Login Book

Sample Login Book

Nov 03, 2006

010026

SwRI Login Area
Division 1

Sample Receipt: 30001		Project: 12673.04.00X	Client: Battelle Energy
VTSR Date: Nov 03, 2006		VTSR Time: 08:15:00	Manager: DAMMANN, MIKE
System ID	Customer Sample ID	Matrix	
289039	BEA006238_CFALS1	Water	
289040	BEA006240_CFALS1	Water	
289041	BEA006242_CFALS1	Water	
289042	BEA006244_CFALS1	Water	
289043	BEA006246_CFALS1	Water	
289044	BEA006248_CFALS1	Water	

Sample Receipt: 30002		Project: 12474.01.00X	Client: S.M. Stoller
VTSR Date: Nov 03, 2006		VTSR Time: 08:15:00	Manager: DAMMANN, MIKE
System ID	Customer Sample ID	Matrix	
289045	SW161	WS	
289046	SW162	WS	
289047	SW175	WS	
289048	SW176	WS	
289049	SW185	WS	
289050	SW186	WQ	

Sample Receipt: 30003		Project: 11817.08.008	Client: Lionville Labora
VTSR Date: Nov 03, 2006		VTSR Time: 08:15:00	Manager: SCHELLER, LORRAINE
System ID	Customer Sample ID	Matrix	
289051	2006-08570	Water	
289052	2006-08571	Water	
289053	2006-08604	Water	

Sample Receipt: 30004		Project: 06002.01.322	Client: Div. 20
VTSR Date: Nov 03, 2006		VTSR Time: 11:00:00	Manager: SPIES, RADONNA
System ID	Customer Sample ID	Matrix	
289054	Sample E1	Solid	

Sample Login Book

010027

Nov 03, 2006

SwRI Login Area
Division 1

Sample Receipt: 30004		Project: 06002.01.322	Client: Div. 20
VTSR Date: Nov 03, 2006		VTSR Time: 11:00:00	Manager: SPIES, RADONNA
System ID	Customer Sample ID	Matrix	
289055	Sample E3	Solid	
289056	Sample EW1	Solid	
289057	Sample EW3	Solid	

Sample Receipt: 30005		Project: 10530.01.002	Client: DIVISION 18
VTSR Date: Nov 03, 2006		VTSR Time: 09:30:00	Manager: SPIES, RADONNA
System ID	Customer Sample ID	Matrix	
289058	Test 40	Liquid	

Sample Receipt: 30006		Project: 12750.01.801	Client: Umatilla
VTSR Date: Nov 04, 2006		VTSR Time: 00:00:00	Manager: MARTINEZ, ROBERT
System ID	Customer Sample ID	Matrix	
289059	79D0630400-A	Solid	

Sample Receipt: 30007		Project: 12700.06.007	Client: EEStor, Inc.
VTSR Date: Nov 03, 2006		VTSR Time: 12:25:00	Manager: RANGER, JACKIE
System ID	Customer Sample ID	Matrix	
289061	Ba(NO3)2 P#1 Assay/SPC.GRV.	Liquid	
289062	Ba(NO3)2 P#1 Trace Metals	Liquid	
289063	Ba(NO3)2 P#2 Assay/SPC. GRV.	Liquid	
289064	Ba(NO3)2 P#2 Trace Metals	Liquid	
289065	Ba(NO3)2 CDM Trace Metals	Liquid	
289066	Ca(NO3)2 CDM Assay/SPC. GRV.	Liquid	
289067	Kerosene CDM Trace Metals	Liquid	
289068	TIO 2 CDM Assay/SPC. GRV.	Liquid	

Number of samples for today: 55

Number of Containers for today: 105

010028

SOUTHWEST RESEARCH INSTITUTE

NUCLEAR PROJECT

CLIENT: Division 20

TASK ORDER: 061104-3

SRR: 30004

SDG: 289054

CASE: K. Chiang

VTSR: November 3, 2006

PROJECT#: 06002.01.322

RAW DATA

Div 20
06002.01.322
TO# 061104-3

Walter A. Nageli
12/20/06

010029

Analyst: RSS
Method: EPA 218.6
Sig Fig: 3

Date Analyzed

12/14/06
12/14/06
12/14/06
12/14/06
12/14/06
12/14/06

System ID	Analyte	Conc. ug/L	Coupon	FV ml	RESULT ug	Qual	DL	TV	%REC %RPD
PB	Hexavalent Chromium	0.000	1.0	10	0.01	U	0.01		
LCS	Hexavalent Chromium	49.846	1.0	10	0.498		0.01	0.5	99.6%
289054	Hexavalent Chromium	0.858	1.0	10	0.01	U	0.01		
289055	Hexavalent Chromium	1.190	1.0	10	0.0119		0.01		
289056	Hexavalent Chromium	0.000	1.0	10	0.01	U	0.01		
289057	Hexavalent Chromium	0.504	1.0	10	0.01	U	0.01		

Report as Leachable Cr VI Units ug/sample

Sample Calc: LCS

$$49.846 \frac{\text{ug}}{\text{L}} \times \frac{10\text{mL}}{\text{sample}} \times \frac{1\text{L}}{1000\text{mL}} = 0.498 \frac{\text{ug}}{\text{sample}}$$

U = Undetected

SDG: 289054
VTSR: 11/03/06
CASE: DR. CHAING

SRR #s: 30004
Client(s): Div. 20

Project(s): 06002.01.322
Manager(s): SPIES, RADONNA
To PM: 11/15/06
To QA: 11/15/06
To Client: 11/16/06

Instructions

DIVISION 20 - Dr. Ken Chiang.
FOUR specimen samples received on 11/03/06 for total chromium and hexavalent chromium after DI Water Leach.
Per instructions received from Dr. Ken Chiang, "Please try no to touch the specimen surface."
Email prelim report, excel and PDF format, to Dr. Chain, ext. 2308, kchiang@swri.org. Send forms only, archive all else.
RETURN ALL SPECIMENS TO DR. CHAING.

Documents Related to this task order: 26658[COC 30004]

Deliverables --> Hard Copy: -YES- EDD: -YES- PDF: -YES-

Test: CR6_7199

Holding: 1 days from CED

Section: WETCHEM

Hexavalent Chromium by Method 7199 (IC) - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

Test: ICP-6010B

Holding: 180 days from CED

Section: METALS

ICP Method 6010B Total Metals - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

Test: LEACH-DIWATER

Holding: 180 days from CED

Section: METALPREP

LEACH DI WATER - TRY NOT TO TOUCH THE SPECIMENT SURFACE

Cnt: 4

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
289054		1	Solid	Sample E1		
289055		1	Solid	Sample E3		
289056		1	Solid	Sample EW1		
289057		1	Solid	Sample EW3		

1ml 750

2/4/A

Line	Sample	Sample Type	Level	Method	Data File	Dilution
1	STD1 42-08-IC6	Calibration St	1	crvi4500_061214.met	061214_001.dxd	1
2	STD2 42-07-IC6	Calibration St	2	crvi4500_061214.met	061214_002.dxd	1
3	STD3 42-06-IC6	Calibration St	3	crvi4500_061214.met	061214_003.dxd	1
4	STD4 42-05-IC6	Calibration St	4	crvi4500_061214.met	061214_004.dxd	1
5	STD5 42-04-IC6	Calibration St	5	crvi4500_061214.met	061214_005.dxd	1
6	STD6 42-03-IC6	Calibration St	6	crvi4500_061214.met	061214_006.dxd	1
7	STD7 42-02-IC7	Calibration St	7	crvi4500_061214.met	061214_007.dxd	1
8	ICV	Sample		crvi4500_061214.met	061214_008.dxd	1
9	ICB	Sample		crvi4500_061214.met	061214_009.dxd	1
10	PB	Sample		crvi4500_061214.met	061214_010.dxd	1
11	LCS	Sample		crvi4500_061214.met	061214_011.dxd	1
12	289054	Sample		crvi4500_061214.met	061214_012.dxd	1
13	289055	Sample		crvi4500_061214.met	061214_013.dxd	1
14	289056	Sample		crvi4500_061214.met	061214_014.dxd	1
15	SKIPPED	Sample		crvi4500_061214.met	061214	1
16	289057	Sample		crvi4500_061214.met	061214_016.dxd	1
17	289055R	Sample		crvi4500_061214.met	061214_017.dxd	1
18	289056R	Sample		crvi4500_061214.met	061214_018.dxd	1
19	289057R	Sample		crvi4500_061214.met	061214_019.dxd	1
20	CCV	Sample		crvi4500_061214.met	061214_020.dxd	1
21	CCB	Sample		crvi4500_061214.met	061214_021.dxd	1
22	CCB	Sample		astop4500.met	061214_009.dxd	1

010032

Default Method Path: C:\PEAKNET\METHOD.ACI
Default Data Path: C:\PEAKNET\DATA.ACI\061214
Comment:
DIV20 06002.01.322 TO#061104-3

ICV/CCV = 42-10-IC6 TV = 10PPB

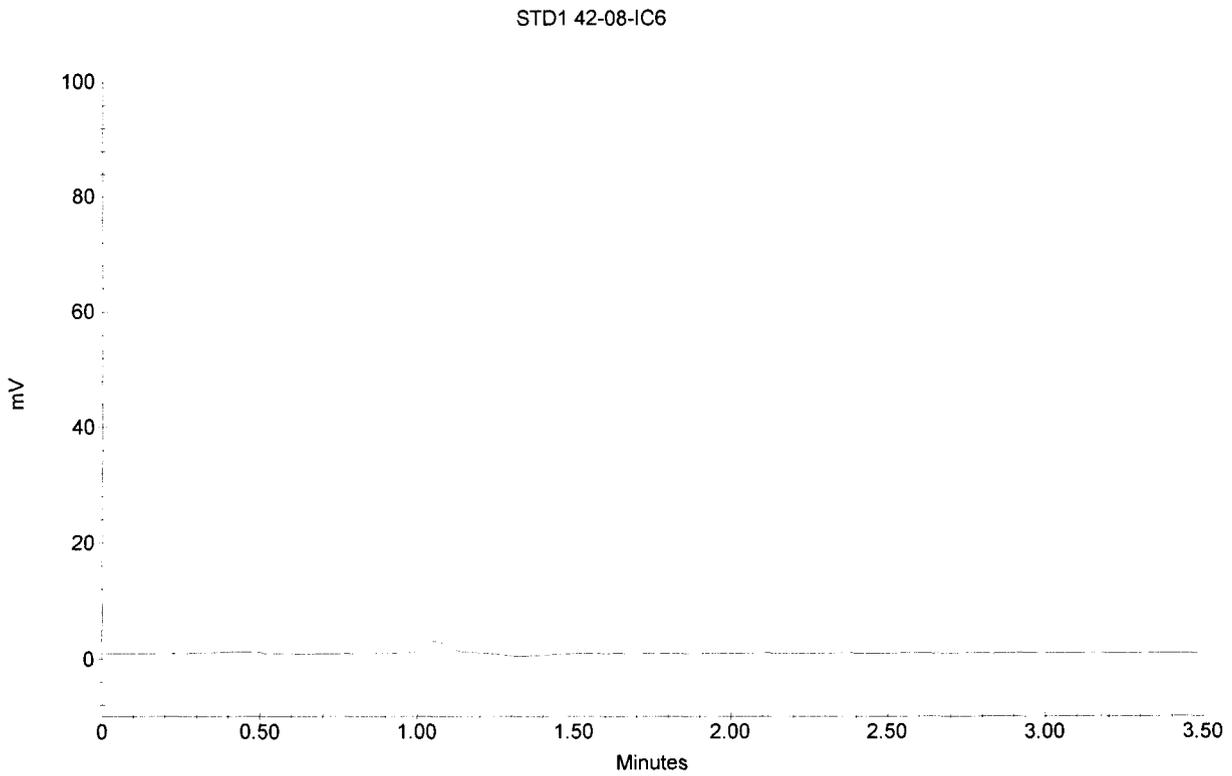
R Spis
12/18/06

Sample Name : STD1 42-08-IC6
Dilution Factor : 1.00
Injection Number : 1
Data File Name : ...061214_001.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 1:56:16 PM
Date Time Updated : 12/14/06 1:59:46 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010033

Peak Information : All Components					
Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
0	0.00	(null)	0.00	0	0



Sample Name : STD2 42-07-IC6
Dilution Factor : 1.00
Injection Number : 2
Data File Name : ...061214_002.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

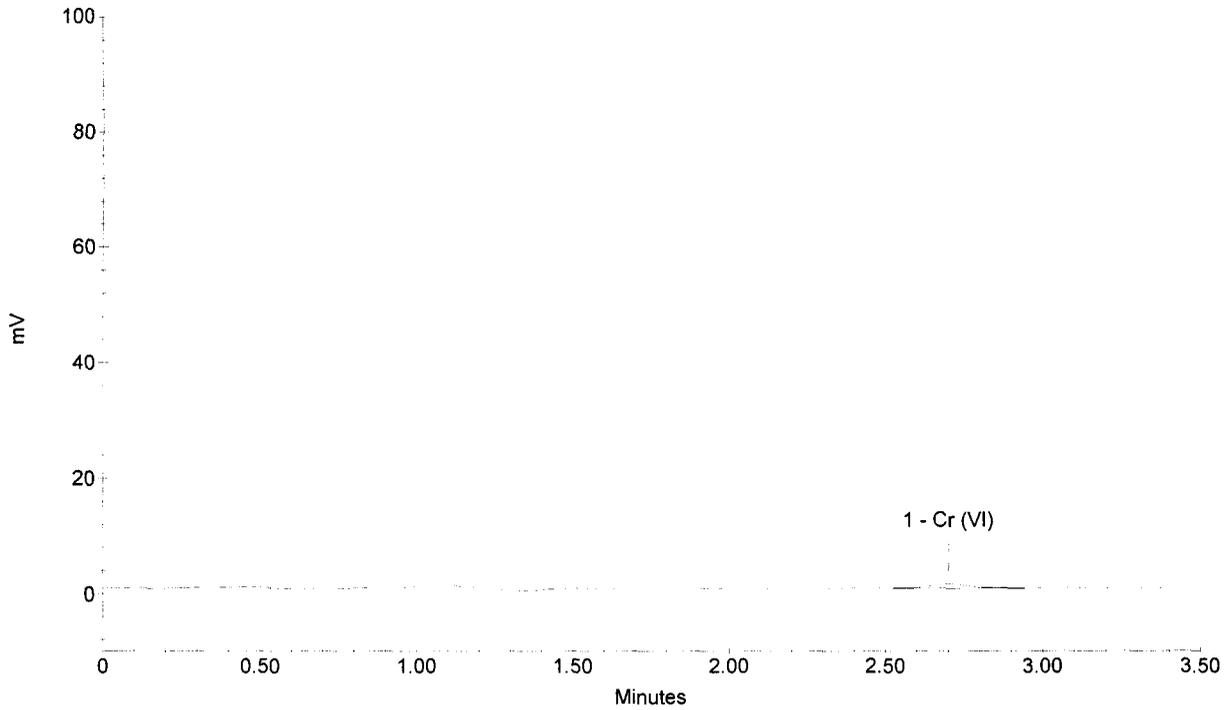
Date Time Collected : 12/14/06 2:02:37 PM
Date Time Updated : 12/14/06 2:06:07 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010034

Peak Information : All Components

Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
1	2.70	Cr (VI)	1.00	6422	757

STD2 42-07-IC6

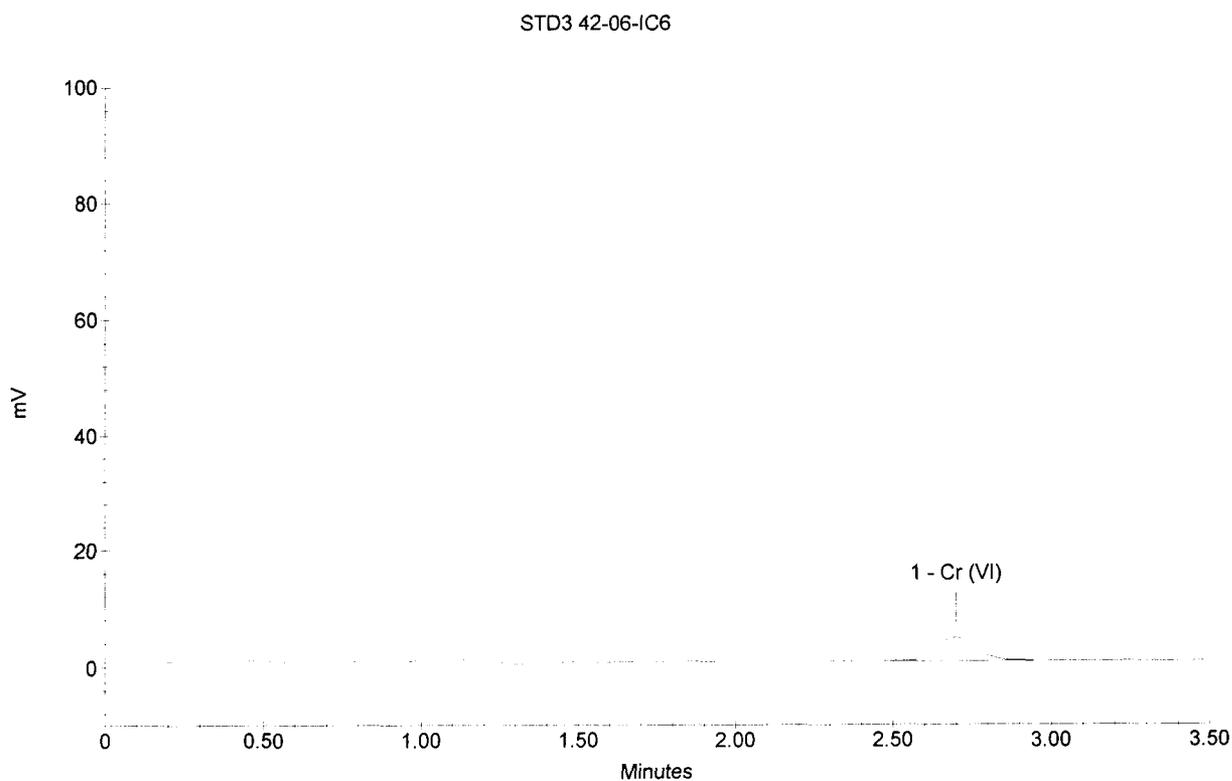


Sample Name : STD3 42-06-IC6
Dilution Factor : 1.00
Injection Number : 3
Data File Name : ...061214_003.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:08:56 PM
Date Time Updated : 12/14/06 2:12:26 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010035

Peak Information : All Components					
Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
1	2.70	Cr (VI)	5.00	32901	3938

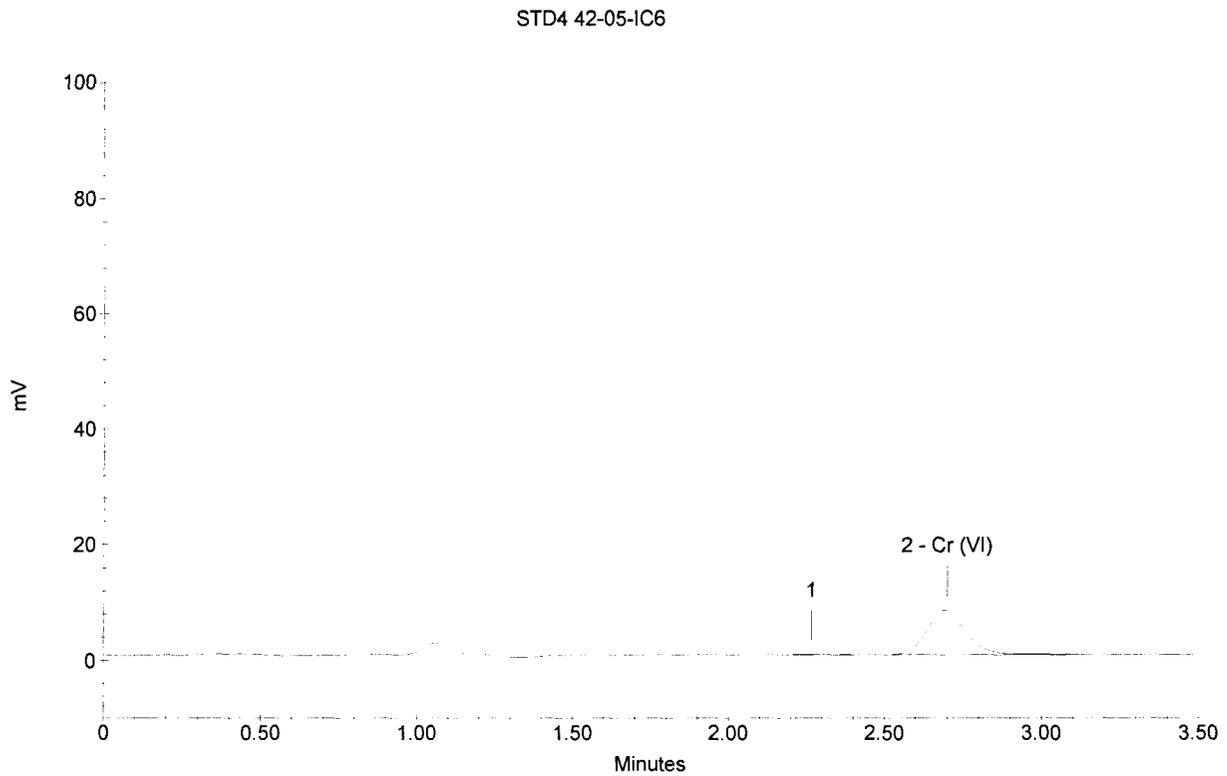


Sample Name : STD4 42-05-IC6
Dilution Factor : 1.00
Injection Number : 4
Data File Name : ...061214_004.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:15:16 PM
Date Time Updated : 12/14/06 2:18:46 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010036

Peak Information : All Components					
Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
2	2.70	Cr (VI)	10.00	65742	7702

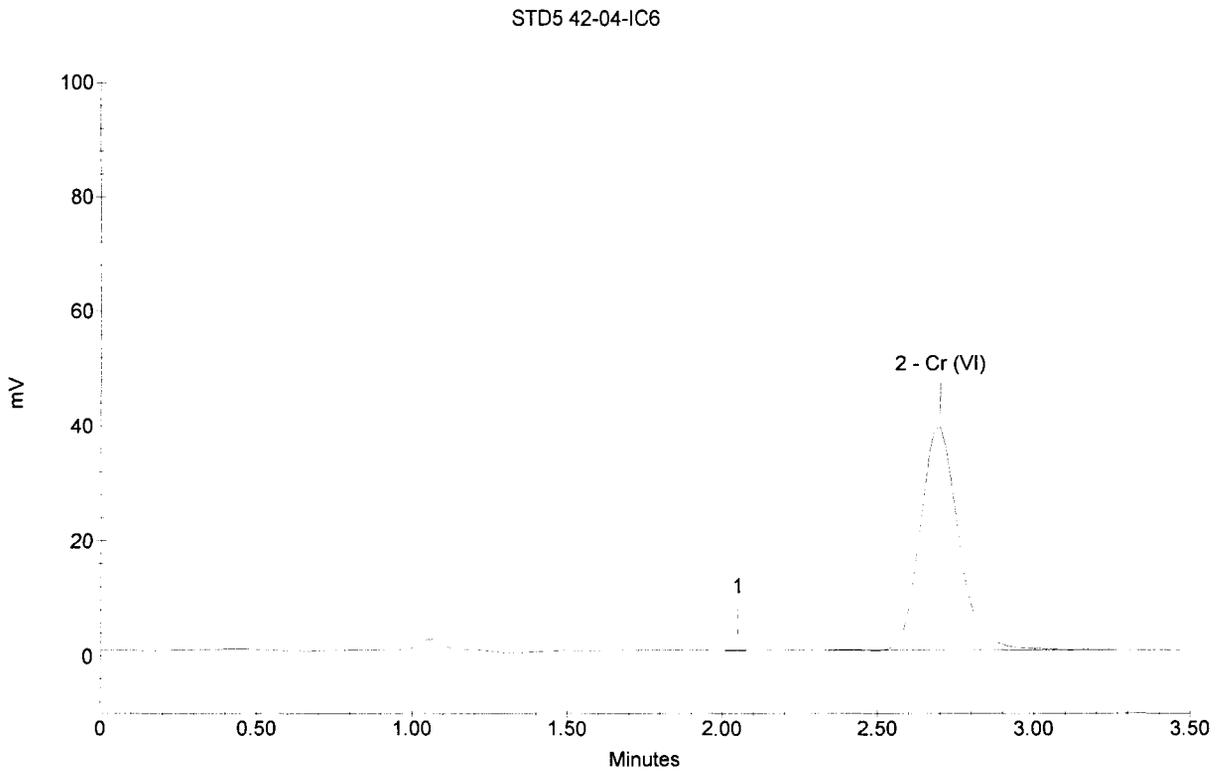


Sample Name : STD5 42-04-IC6
Dilution Factor : 1.00
Injection Number : 5
Data File Name : ...061214_005.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:21:35 PM
Date Time Updated : 12/14/06 2:25:06 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010037

Peak Information : All Components					
Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
2	2.70	Cr (VI)	50.00	331265	38694

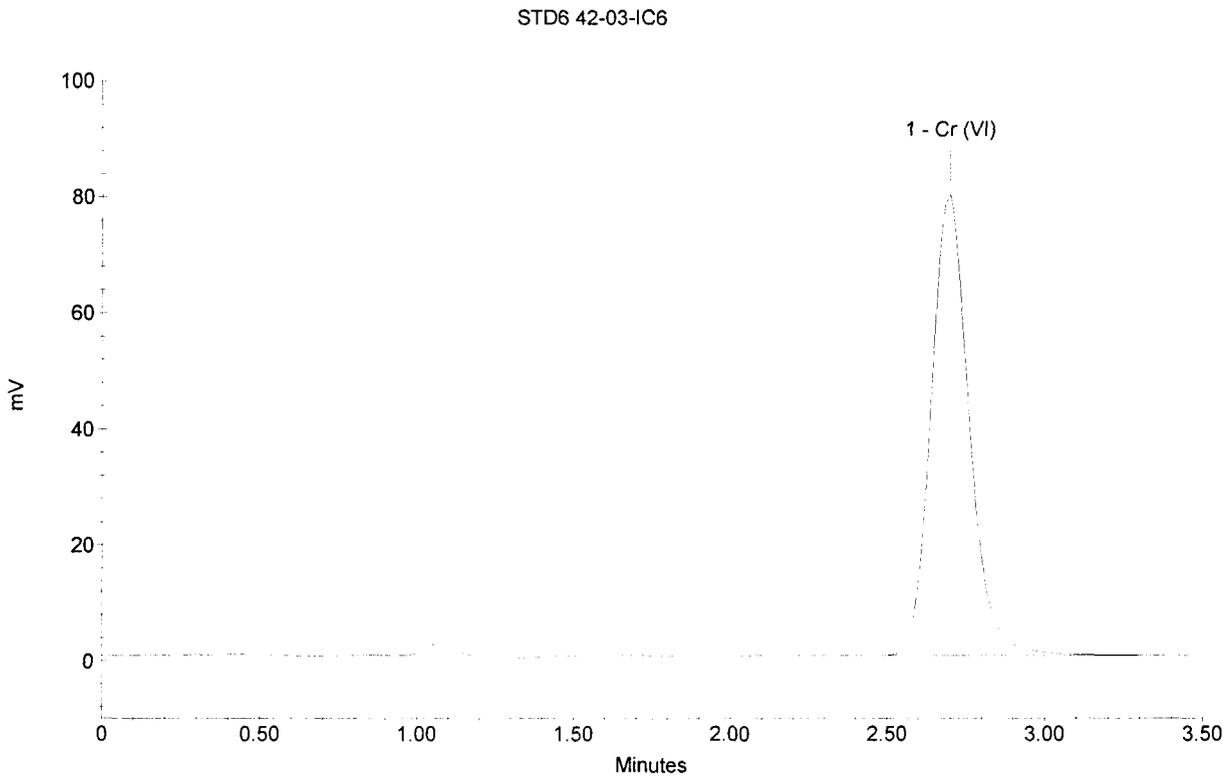


Sample Name : STD6 42-03-IC6
Dilution Factor : 1.00
Injection Number : 6
Data File Name : ...061214_006.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:27:55 PM
Date Time Updated : 12/14/06 2:31:25 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010038

Peak Information : All Components					
Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
1	2.70	Cr (VI)	100.00	664317	79407



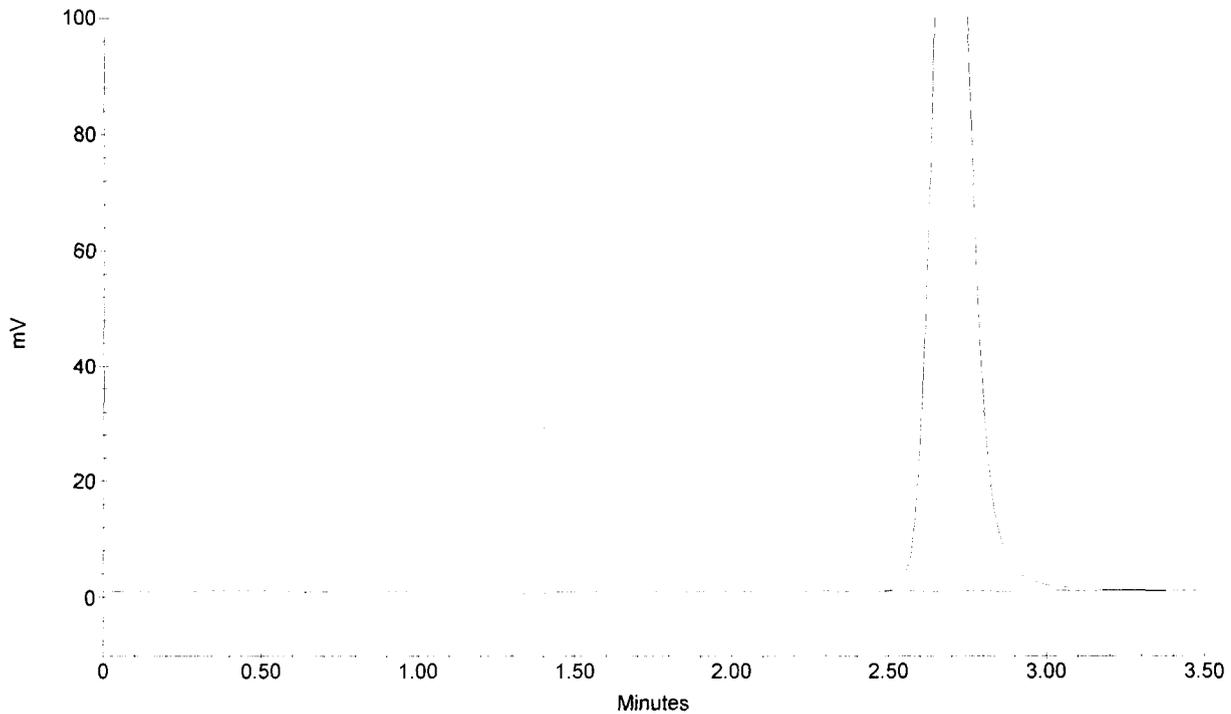
Sample Name : STD7 42-02-IC7
Dilution Factor : 1.00
Injection Number : 7
Data File Name : ...061214_007.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:34:15 PM
Date Time Updated : 12/14/06 2:37:45 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010039

Peak Information : All Components					
Peak Number	Peak Retention Time	Component Name	Concentration, ug/L (PPB)	Peak Area	Peak Height
1	2.70	Cr (VI)	200.00	1317931	155665

STD7 42-02-IC7



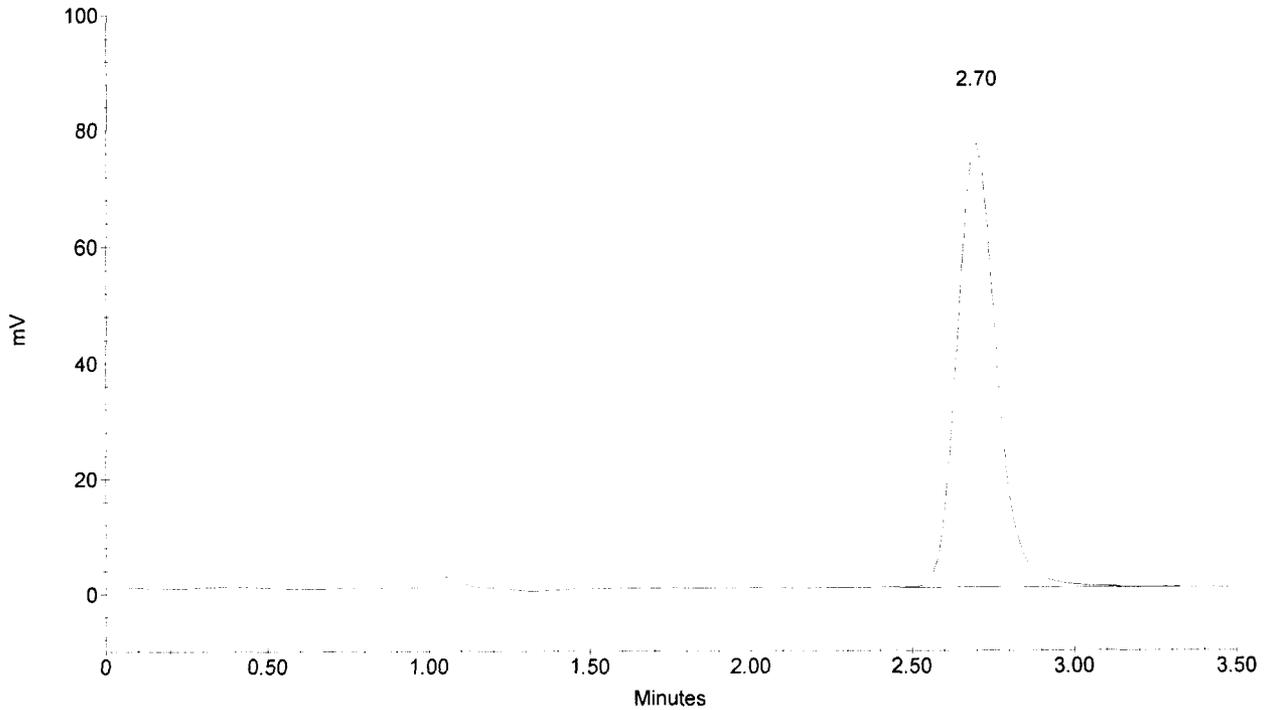
Sample Name : ICV
Dilution Factor : 1.00
Injection Number : 8
Data File Name : ...061214_008.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:40:34 PM
Date Time Updated : 12/14/06 2:44:04 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010040

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta
1	2.70	Cr (VI)	98.694	76482	651536	1	0.00
			---total(s)---				
0.00			98.694		651536		

ICV



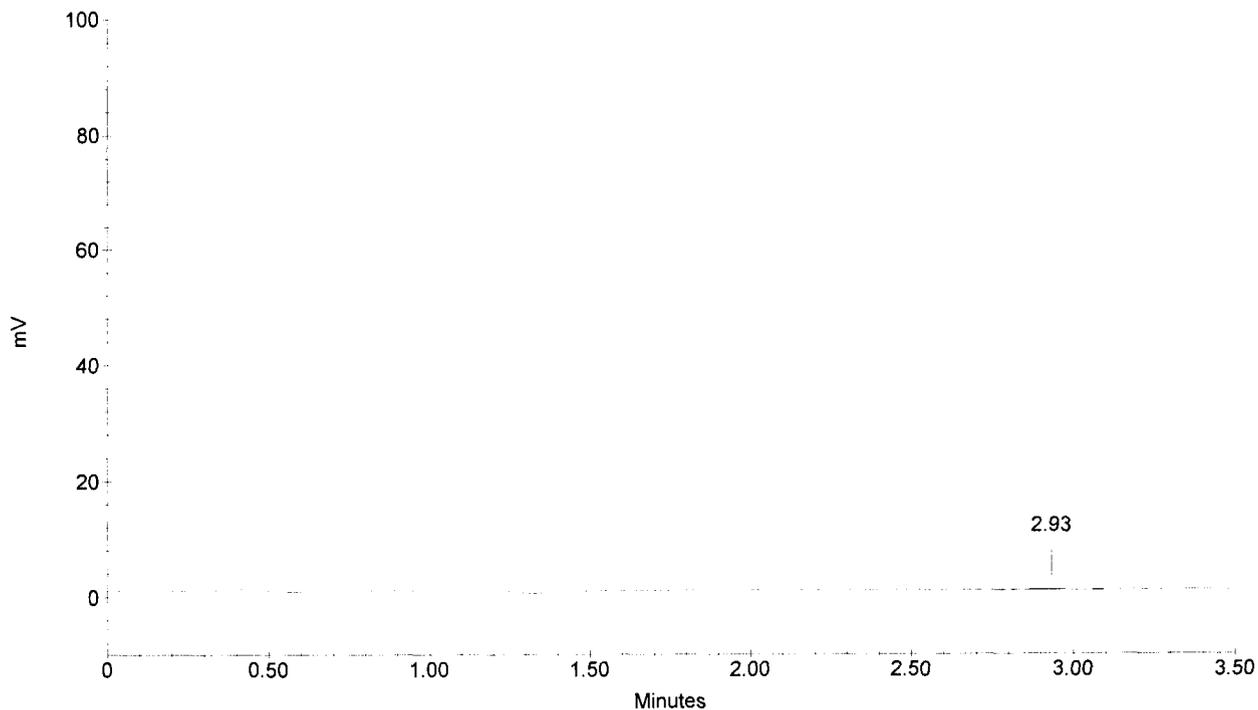
010041

Sample Name : ICB
Dilution Factor : 1.00
Injection Number : 9
Data File Name : ...061214_009.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:46:54 PM
Date Time Updated : 12/14/06 2:50:24 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta
1	2.93	Cr (VI)	0.104	59	687	1	8.64
			---total(s)---				
0.00			0.104			687	

ICB

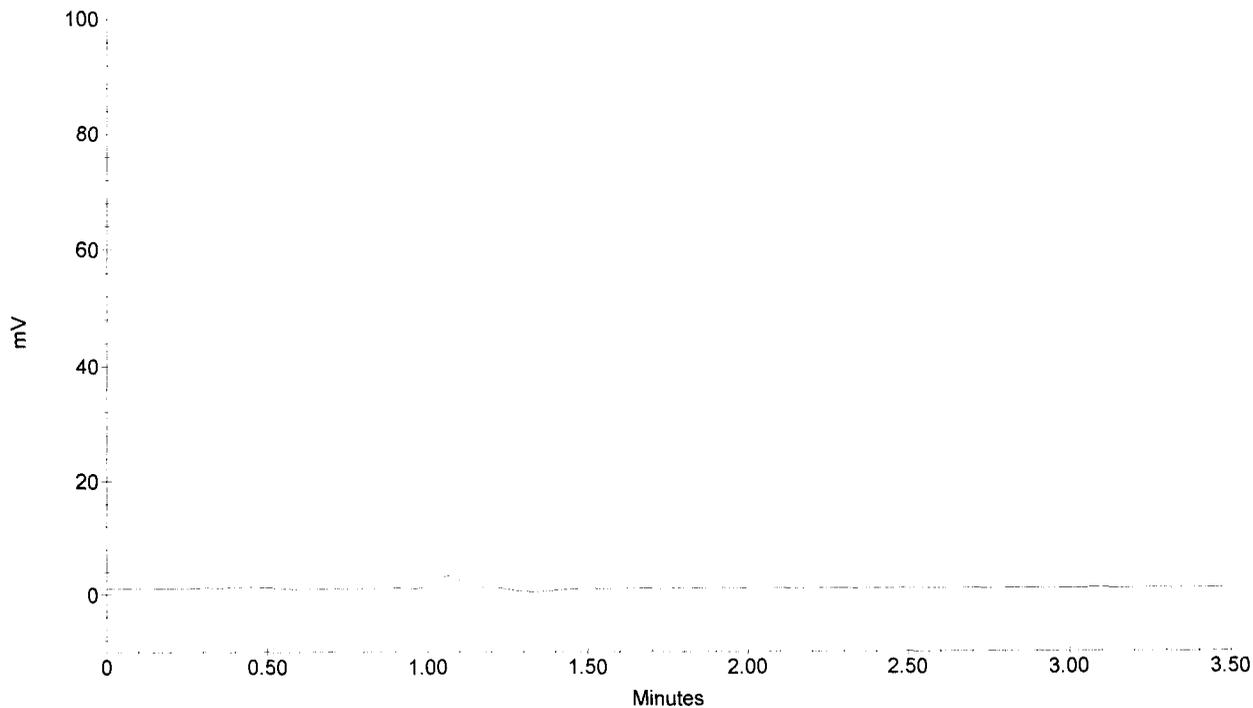


Sample Name : PB
 Dilution Factor : 1.00
 Injection Number : 10
 Data File Name : ...061214_010.DXD
 Method File Name : ...CRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 2:59:40 PM **010042**
 Date Time Updated : 12/14/06 3:03:11 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta
0	0.00	(null)	0.000 ✓	0	0 0		0.00
			---total(s)---				
			0.000		0		

PB



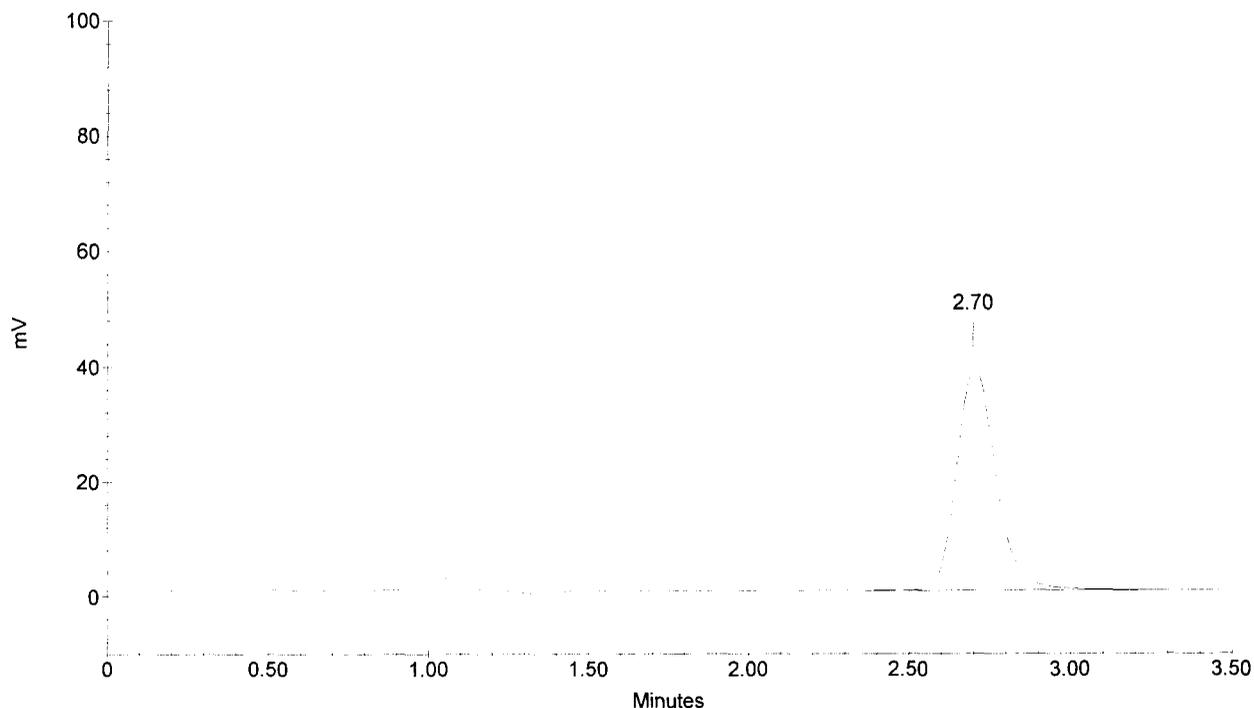
Sample Name : LCS
 Dilution Factor : 1.00
 Injection Number : 11
 Data File Name : ...061214_011.DXD
 Method File Name : ...ACRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:06:00 PM
 Date Time Updated : 12/14/06 3:09:30 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

010043

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta
1	2.70	Cr (VI)	49.846	38887	329060	1	0.00
			---total(s)---				
			0.00	49.846	329060		

LCS



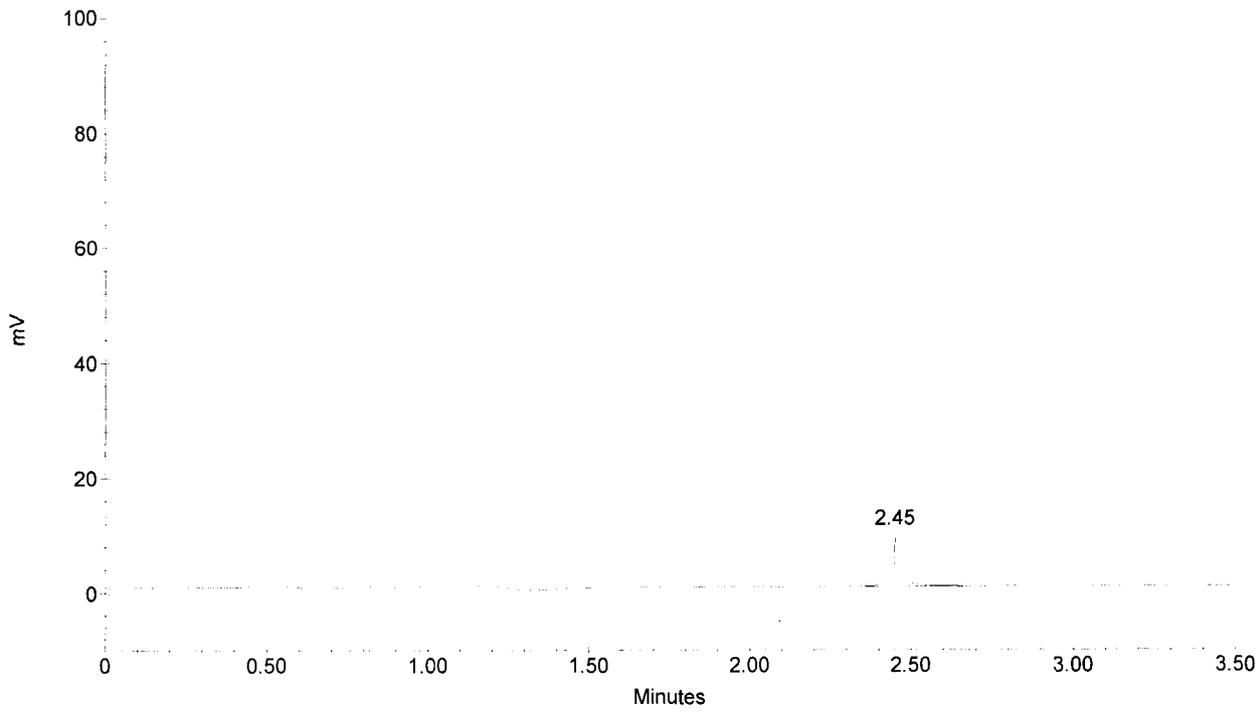
010044

Sample Name : 289054
Dilution Factor : 1.00
Injection Number : 12
Data File Name : ...061214_012.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:12:20 PM
Date Time Updated : 12/14/06 3:15:50 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	2.45	Cr (VI)	0.858 ✓	748	5661	1	-9.26
			---total(s)---				
	0.00		0.858		5661		

289054



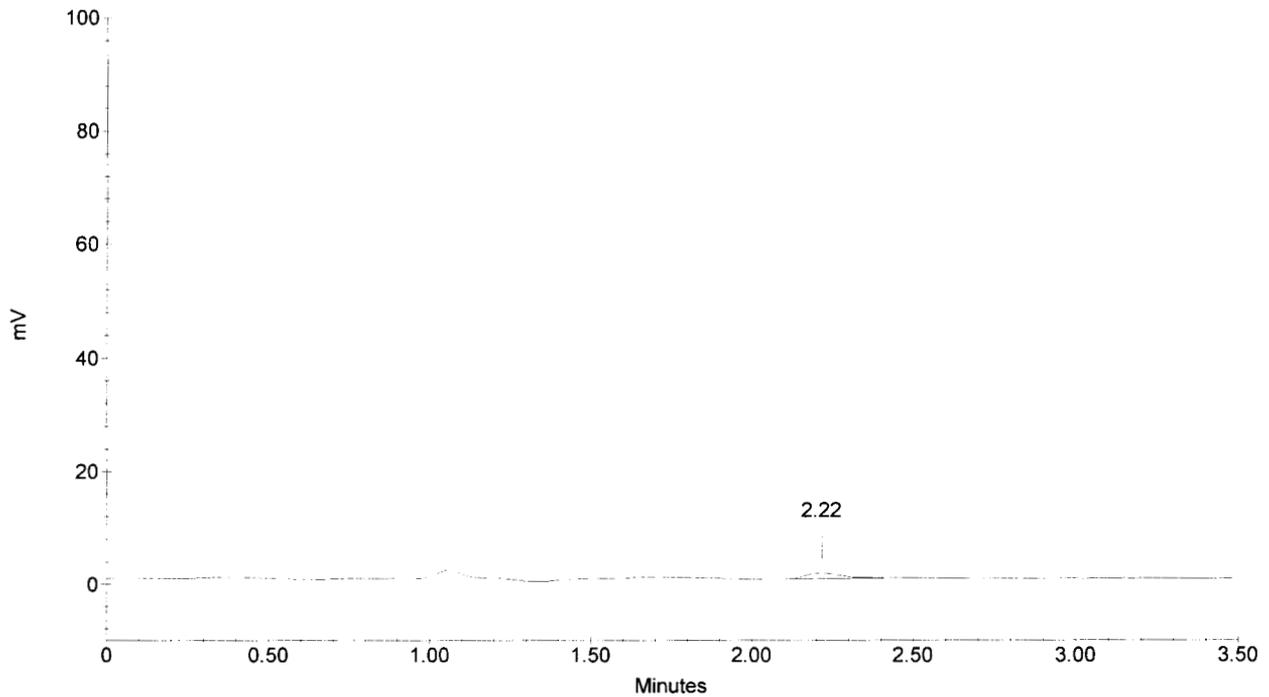
010045

Sample Name : 289055
Dilution Factor : 1.00
Injection Number : 13
Data File Name : ...061214_013.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:18:39 PM
Date Time Updated : 12/14/06 3:22:09 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta
1	2.22	Cr (VI)	1.190 ✓	1008	7854	1	-9.52
			---total(s)---				
0.00			1.190		7854		

289055



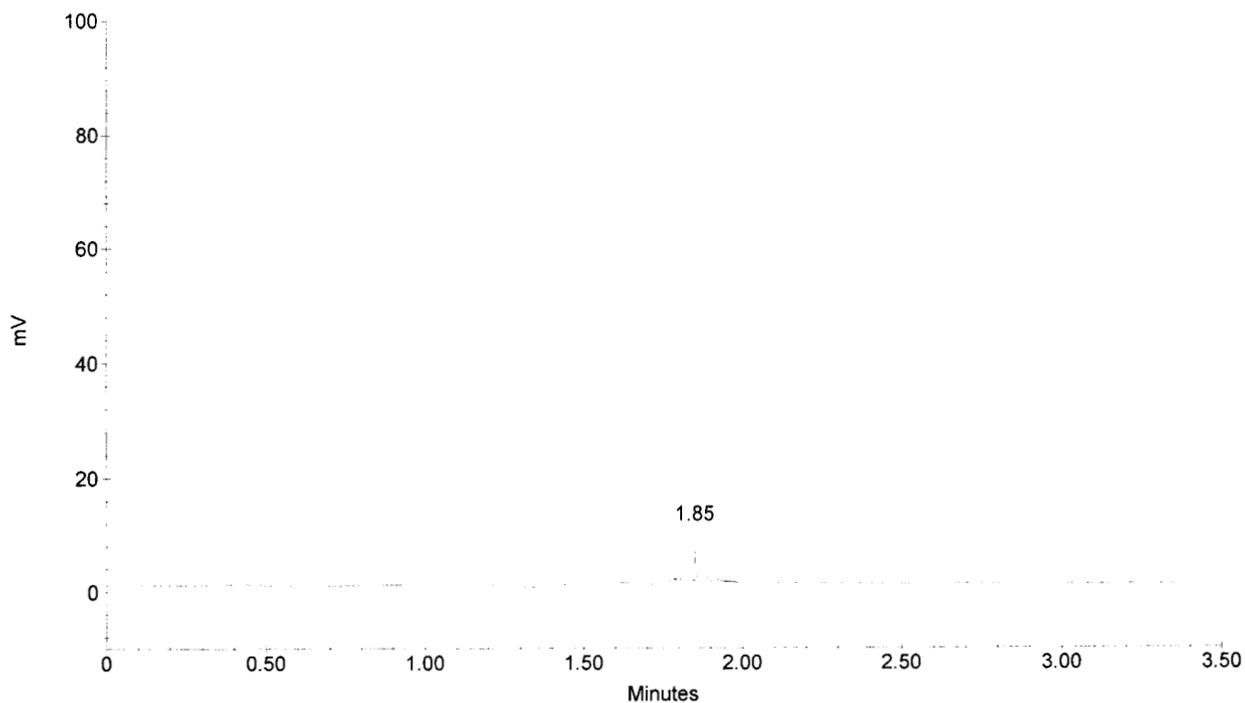
Sample Name : 289056
 Dilution Factor : 1.00
 Injection Number : 14
 Data File Name : ...061214_014.DXD
 Method File Name : ...CRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:24:59 PM
 Date Time Updated : 12/14/06 3:28:29 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

010046

Peak Information : All Components						
PK. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code
1	1.85		0.000	719	4700	1
			---total(s)---			
	0.00		0.000		4700	

289056



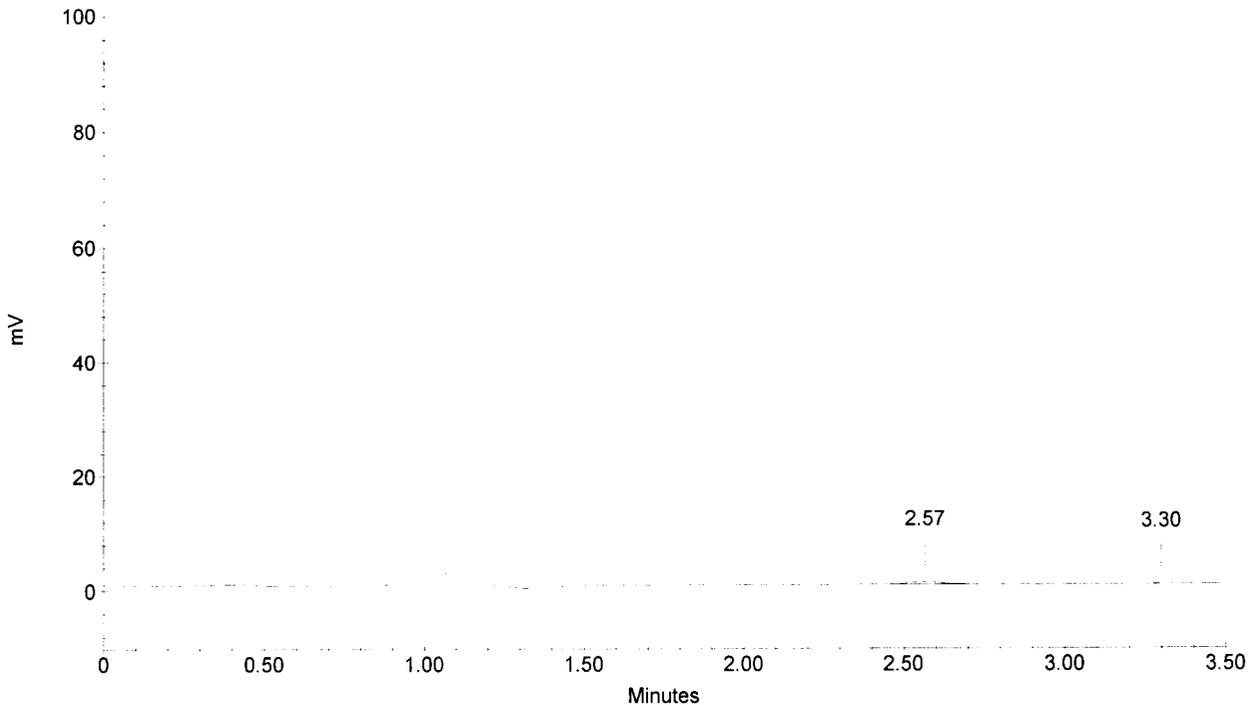
Sample Name : 289057
 Dilution Factor : 1.00
 Injection Number : 16
 Data File Name : ...061214_016.DXD
 Method File Name : ...CRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:34:42 PM
 Date Time Updated : 12/14/06 4:01:06 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

010047

Peak Information : All Components								
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta	
1	2.57	Cr (VI)	0.504 ✓	445	3324	1	-4.94	
			---total(s)---					
0.00			0.504	3324				

289057



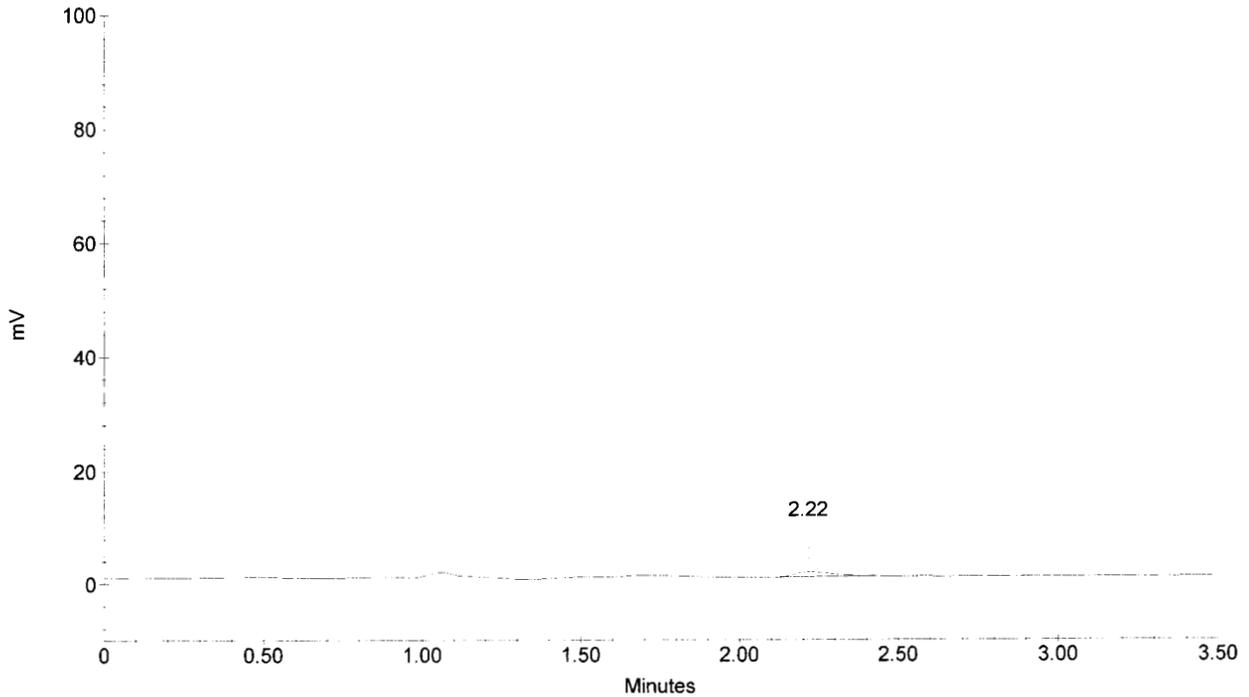
Sample Name : 289055R
 Dilution Factor : 1.00
 Injection Number : 17
 Data File Name : ...061214_017.DXD
 Method File Name : ...CRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:41:03 PM
 Date Time Updated : 12/14/06 4:01:08 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

010048

Peak Information : All Components								
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta	
1	2.22	Cr (VI)	1.028	891	6786	1	-7.64	
			---total(s)---					
0.00			1.028		6786			

289055R



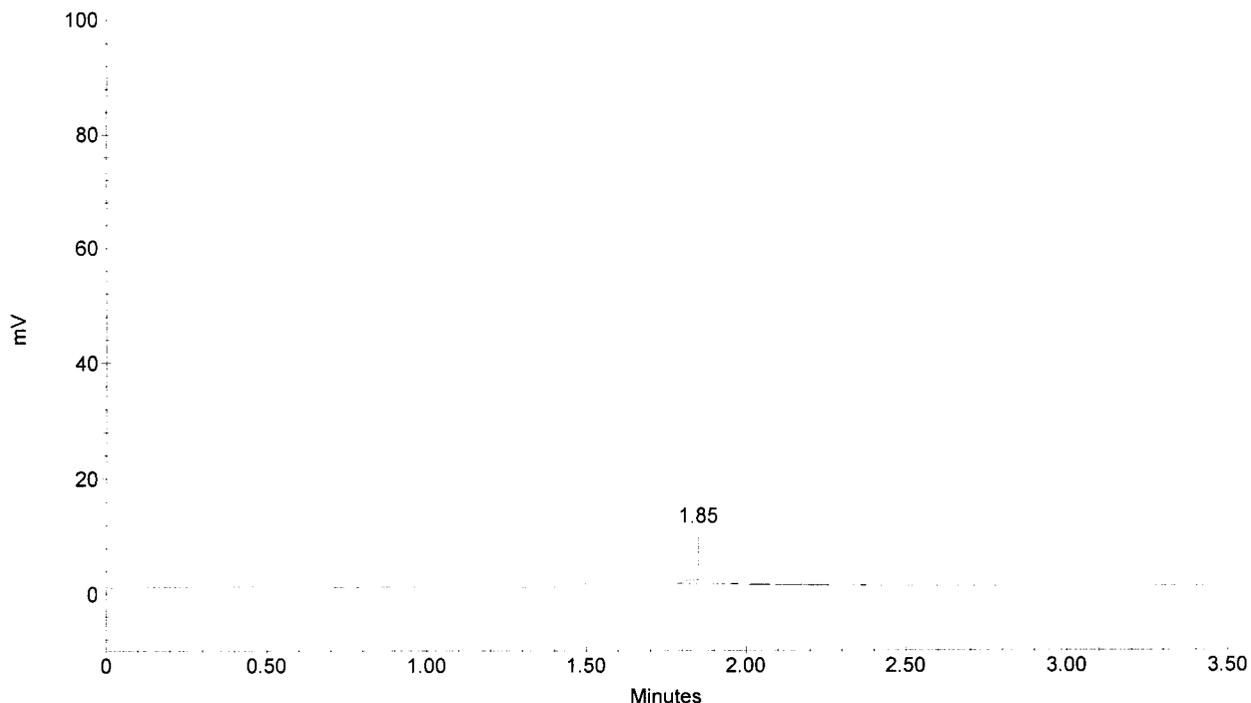
010049

Sample Name : 289056R
Dilution Factor : 1.00
Injection Number : 18
Data File Name : ...061214_018.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:47:23 PM
Date Time Updated : 12/14/06 4:01:10 PM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta
1	1.85		0.000	723	4503	1	
			---total(s)---				
0.00			0.000		4503		

289056R



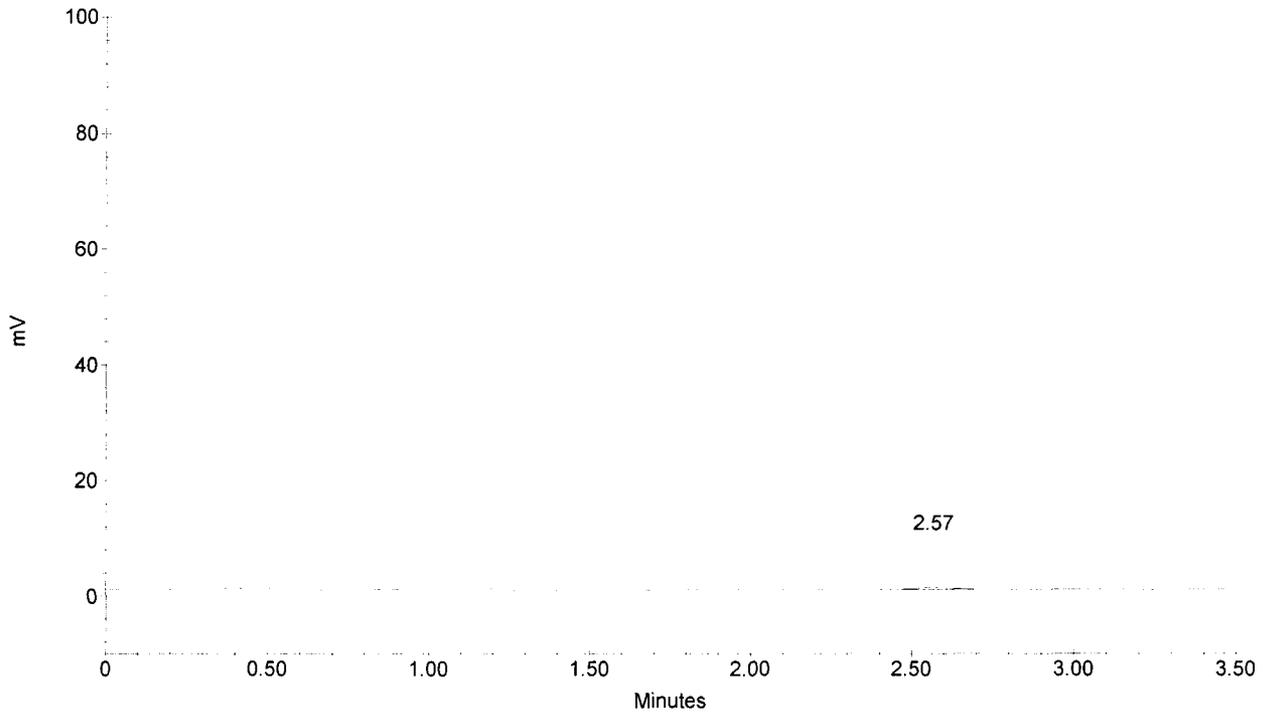
Sample Name : 289057R
 Dilution Factor : 1.00
 Injection Number : 19
 Data File Name : ...061214_019.DXD
 Method File Name : ...CRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 3:53:42 PM
 Date Time Updated : 12/14/06 4:01:13 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

010050

Peak Information : All Components							
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code	%Delta
1	2.57	Cr (VI)	0.416	374	2749	1	-4.94
			---total(s)---				
0.00			0.416			2749	

289057R



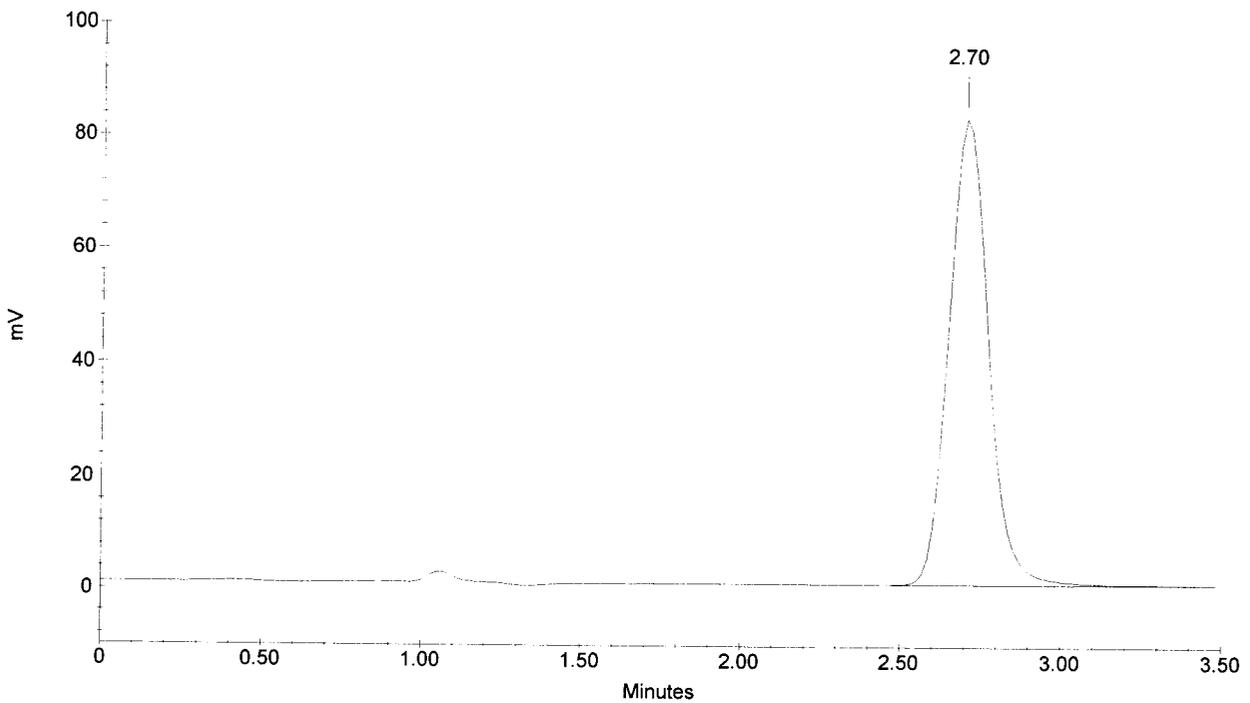
Sample Name : CCV
Dilution Factor : 1.00
Injection Number : 20
Data File Name : ...061214_020.DXD
Method File Name : ...CRVI4500_061214.MET
Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 4:00:00 PM
Date Time Updated : 12/15/06 8:27:45 AM
System Name : DIONEX 4500i
Detector Name : OTHER
Column Type : AS7
System Operator :

010051

Peak Information : All Components								
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	BI. Code	%Delta	
1	2.70	Cr (VI)	107.081	82178	706903	1	0.00	
			---total(s)---					
0.00			107.081	706903				

CCV



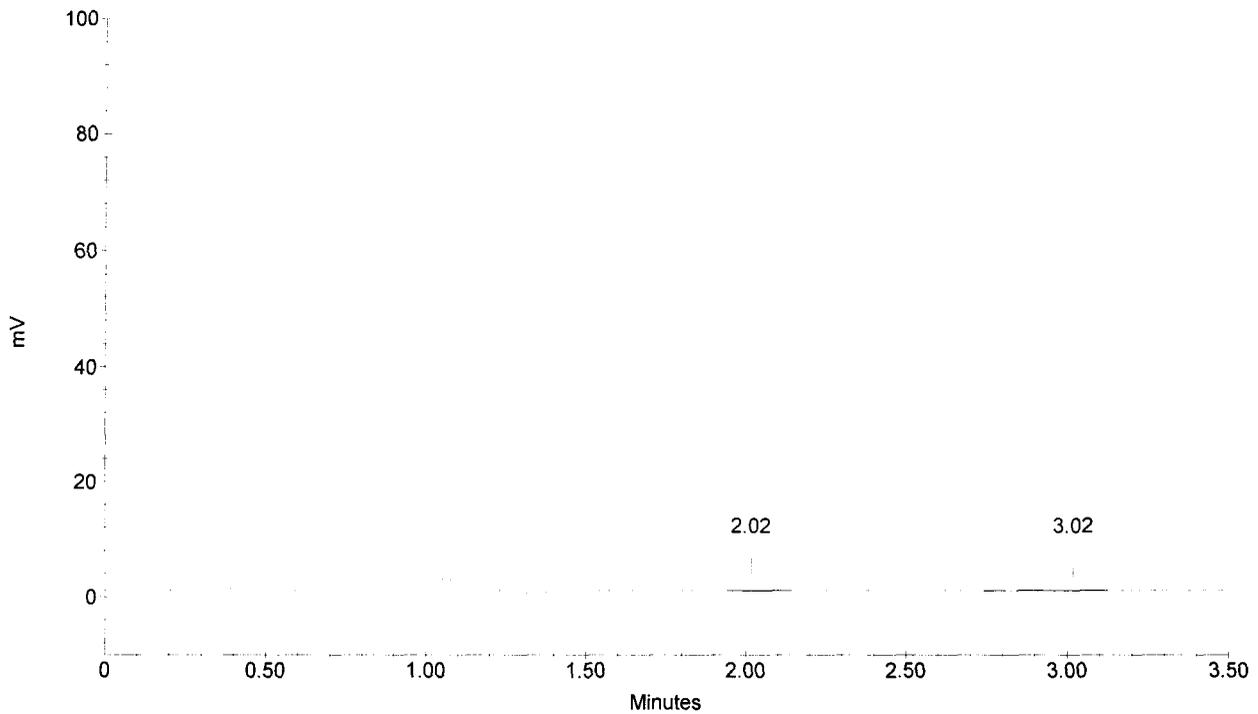
Sample Name : CCB
 Dilution Factor : 1.00
 Injection Number : 21
 Data File Name : ...061214_021.DXD
 Method File Name : ...CRVI4500_061214.MET
 Schedule File Name : ...14dec06.sch

Date Time Collected : 12/14/06 4:06:18 PM
 Date Time Updated : 12/14/06 4:09:48 PM
 System Name : DIONEX 4500i
 Detector Name : OTHER
 Column Type : AS7
 System Operator :

010052

Peak Information : All Components						
Pk. Num	Ret Time	Component Name	Concentration (PPB)	Height	Area	Bl. Code %Delta
1	2.02		0.000	60	448	1
			---total(s)---			
	0.00		0.000		448	

CCB



010053

Div 20
TO# 061104-3
Proj.# 06002.01.322

Aduna
12/15/04

Sample ID	Element	Result	Qual (C)	Qual (Q)	Units	RL	%RPD	%Recovery	TV	rl	ug/sample	sigwt	Dilution	Calc RL	ug/l	Date	Time
pbw-m14s1	Cr_53	0.00500	U		ug/sample	0.005				0.5	-0.00056	-0.0006	1	0.005	-0.05598	12/15/06	11:42 AM
lcsw-m14s1	Cr_53	3.88			ug/sample	0.5		97.0%	4	0.5	3.88101	3.88	100	0.5	3.88101	12/15/06	11:44 AM
289054	Cr_53	0.130			ug/sample	0.01				0.5	0.129529	0.13	2	0.01	6.47645	12/15/06	11:47 AM
289055	Cr_53	3.99			ug/sample	0.25				0.5	3.985515	3.99	50	0.25	7.97103	12/15/06	11:49 AM
289056	Cr_53	8.10			ug/sample	0.25				0.5	8.101135	8.1	50	0.25	16.20227	12/15/06	11:52 AM
289057	Cr_53	0.247			ug/sample	0.025				0.5	0.247414	0.247	5	0.025	4.94828	12/15/06	11:54 AM

$$289054: \frac{6.47645 \text{ ug} \times \text{df}2 \times 0.01 \text{ L}}{\text{L}} = 0.130 \text{ ug sample}$$

V. Sample
12/15/06

200.8 TAP No. 01-0406-107 Rev 2/Jan 06

6020 TAP No. 01-0406-046 Rev 10/Jan 06 *mod*

Other _____

010054

ICP-MS CALIB. STD. ID's

SO M507-068-01
STD. 1 065-0460
STD. 2 _____
STD. 3 _____

ANALYSIS

Cr 53

QC STD. ID's

ICV/CCV M507-065-06
CRI _____
ICSA _____
ICSAB _____

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBK	PG
<u>06002.01.322</u>	<u>Div 20</u>	<u>061104-3</u>	<u>12/15/06</u>	<u>Solid</u>	<u>66</u>	<u>145</u>
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

INSTRUMENT: DRC # FILENAME: _____

Analyst: Aduna 12/15/06

Quantitative Analysis - Summary Report

010055

Sample ID: S-0

Sample Date/Time: Friday, December 15, 2006 11:31:44
Sample Description:
Solution Type: Standard
Blank File:
Number of Replicates: 3
Peak Processing Mode: Average
Signal Profile Processing Mode: Average
Dual Detector Mode: Dual
Dead Time (ns): 35

Aduna
12/15/06

Sample File: C:\Elandata\Sample\leestor_061212-4.sam
Method File: C:\Elandata\Method\SwRINCr_only.mth
Dataset File: c:\elandata\Dataset\06Dec\S-0.1552
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Calibration File:
Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	220	4.166	0.000	
Cr	53	82	8.687	0.000	
Cr-1	52	6765	1.776	0.000	
Y	89	148389	1.316	0.000	
Y-IS	89	148389	1.316	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.001				ug/L
Cr	53	0.001				ug/L
Cr-1	52	0.046				ug/L
Y	89	148389.116				ug/L
Y-IS	89	148389.116	100.000	1.32	1.3	%R

✓ Sample
12/15/06

Quantitative Analysis - Summary Report

Sample ID: S-10

Sample Date/Time: Friday, December 15, 2006 11:34:08

Sample Description:

Solution Type: Standard

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\leestor_061212-4.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\S-10.1553

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	17606	1.087	0.000	
Cr	53	2013	0.924	0.000	
Cr-1	52	81472	1.104	0.000	
Y	89	164041	1.723	0.000	
Y-IS	89	164041	1.723	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.107	10.000	0.28	2.8	ug/L
Cr	53	0.012	10.000	0.17	1.7	ug/L
Cr-1	52	0.497	10.000	0.09	0.9	ug/L
Y	89	164040.970				ug/L
Y-IS	89	164040.970	110.548	1.90	1.7	%R

Quantitative Analysis - Summary Report

Sample ID: icv

Sample Date/Time: Friday, December 15, 2006 11:36:32

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\leestor_061212-4.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\icv.1554

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

TV=20ppb

Oduwa

12/15/06

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
[	Cr	52	34138	1.037	0.000	
|	Cr	53	3705	0.977	0.000	
|	Cr-1	52	150074	2.472	0.000	
[>	Y	89	148111	2.812	0.000	
	Y-IS	89	148111	2.812	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
[	Cr	52	0.231	21.642	0.72	3.3	ug/L
|	Cr	53	0.025	20.871	0.40	1.9	ug/L
|	Cr-1	52	1.013	21.452	0.09	0.4	ug/L
[>	Y	89	148111.232				ug/L
	Y-IS	89	148111.232	99.813	2.81	2.8	%R

Quantitative Analysis - Summary Report

010058

Sample ID: icb

Sample Date/Time: Friday, December 15, 2006 11:38:56

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\leestor_061212-4.sam

Method File: C:\Elandata\Method\SwR\ICr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\icb.1555

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	230	11.571	0.000	
Cr	53	91	9.389	0.000	
Cr-1	52	6204	1.492	0.000	
Y	89	145860	0.497	0.000	
Y-IS	89	145860	0.497	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.002	0.009	0.02	196.1	ug/L
Cr	53	0.001	0.062	0.05	79.2	ug/L
Cr-1	52	0.043	-0.068	0.02	27.6	ug/L
Y	89	145859.522				ug/L
Y-IS	89	145859.522	98.295	0.49	0.5	%R

Quantitative Analysis - Summary Report

010059

Sample ID: pbw-m14s1

Sample Date/Time: Friday, December 15, 2006 11:42:27

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\pbw-m14s1.1556

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	216	4.115	0.000	
Cr	53	75	12.719	0.000	
Cr-1	52	6751	0.757	0.000	
Y	89	154675	1.403	0.000	
Y-IS	89	154675	1.403	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.001	-0.008	0.01	80.3	ug/L
Cr	53	0.000	-0.056	0.05	97.7	ug/L
Cr-1	52	0.044	-0.043	0.01	18.4	ug/L
Y	89	154675.288				ug/L
Y-IS	89	154675.288	104.236	1.46	1.4	%R

Quantitative Analysis - Summary Report

010060

Sample ID: lcsw-m14s1 df100

Sample Date/Time: Friday, December 15, 2006 11:44:52

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRINCr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\lcsw-m14s1 df100.1557

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	6728	1.715	0.000	
Cr	53	759	2.113	0.000	
Cr-1	52	34172	1.218	0.000	
Y	89	148861	2.435	0.000	
Y-IS	89	148861	2.435	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.045	4.129	0.03	0.8	ug/L
Cr	53	0.005	3.881	0.03	0.8	ug/L
Cr-1	52	0.230	4.079	0.09	2.1	ug/L
Y	89	148861.203				ug/L
Y-IS	89	148861.203	100.318	2.44	2.4	%R

Quantitative Analysis - Summary Report

010061

Sample ID: 289054 df2

Sample Date/Time: Friday, December 15, 2006 11:47:17

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwR\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\289054 df2.1558

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	10687	2.332	0.000	
Cr	53	1200	3.076	0.000	
Cr-1	52	46580	4.266	0.000	
Y	89	147309	1.006	0.000	
Y-IS	89	147309	1.006	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.073	6.711	0.09	1.4	ug/L
Cr	53	0.008	6.476	0.22	3.5	ug/L
Cr-1	52	0.316	6.001	0.36	6.0	ug/L
Y	89	147309.323				ug/L
Y-IS	89	147309.323	99.272	1.00	1.0	%R

Quantitative Analysis - Summary Report

010062

Sample ID: 289055 df50

Sample Date/Time: Friday, December 15, 2006 11:49:41

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\289055 df50.1559

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	13770	7.667	0.000	
Cr	53	1527	6.560	0.000	
Cr-1	52	105930	3.286	0.000	
Y	89	154295	1.549	0.000	
Y-IS	89	154295	1.549	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.089	8.289	0.63	7.6	ug/L
Cr	53	0.010	7.971	0.53	6.7	ug/L
Cr-1	52	0.686	14.207	0.33	2.4	ug/L
Y	89	154294.898				ug/L
Y-IS	89	154294.898	103.980	1.61	1.5	%R

Quantitative Analysis - Summary Report

010063

Sample ID: 289056 df50

Sample Date/Time: Friday, December 15, 2006 11:52:06

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwR\ICr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\289056 df50.1560

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	26788	2.917	0.000	
Cr	53	2997	2.974	0.000	
Cr-1	52	158029	1.129	0.000	
Y	89	153364	0.955	0.000	
Y-IS	89	153364	0.955	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.175	16.362	0.64	3.9	ug/L
Cr	53	0.020	16.202	0.66	4.0	ug/L
Cr-1	52	1.030	21.833	0.32	1.4	ug/L
Y	89	153363.534				ug/L
Y-IS	89	153363.534	103.352	0.99	1.0	%R

Quantitative Analysis - Summary Report

010064

Sample ID: 289057 df5

Sample Date/Time: Friday, December 15, 2006 11:54:31

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\289057 df5.1561

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens.	Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52		8689	3.532	0.000	
Cr	53		980	4.278	0.000	
Cr-1	52		52983	2.552	0.000	
Y	89		154375	1.437	0.000	
Y-IS	89		154375	1.437	0.000	

Concentration Results

Analyte	Mass	Net Intens.	Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52		0.056	5.177	0.21	4.0	ug/L
Cr	53		0.006	4.948	0.28	5.7	ug/L
Cr-1	52		0.343	6.597	0.09	1.4	ug/L
Y	89		154375.409				ug/L
Y-IS	89		154375.409	104.034	1.49	1.4	%R

Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Friday, December 15, 2006 11:56:56

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

010065

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\ccv.1562

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	37178	3.400	0.000	
Cr	53	4142	3.683	0.000	
Cr-1	52	165598	1.468	0.000	
Y	89	157508	0.413	0.000	
Y-IS	89	157508	0.413	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.236	22.153	0.69	3.1	ug/L
Cr	53	0.026	21.957	0.74	3.3	ug/L
Cr-1	52	1.051	22.296	0.30	1.4	ug/L
Y	89	157507.888				ug/L
Y-IS	89	157507.888	106.145	0.44	0.4	%R

Quantitative Analysis - Summary Report

010066

Sample ID: ccb

Sample Date/Time: Friday, December 15, 2006 11:59:20

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\ccb.1563

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	334	4.780	0.000	
Cr	53	95	18.184	0.000	
Cr-1	52	7103	1.796	0.000	
Y	89	156967	2.302	0.000	
Y-IS	89	156967	2.302	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.002	0.061	0.01	8.8	ug/L
Cr	53	0.001	0.045	0.10	213.8	ug/L
Cr-1	52	0.045	-0.007	0.01	81.8	ug/L
Y	89	156966.940				ug/L
Y-IS	89	156966.940	105.781	2.44	2.3	%R

Quantitative Analysis - Summary Report

010067

Sample ID: ccv

Sample Date/Time: Friday, December 15, 2006 12:01:44

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\ccv.1564

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
Cr	52	35299	2.234	0.000	
Cr	53	3918	3.380	0.000	
Cr-1	52	165118	0.829	0.000	
Y	89	159988	0.238	0.000	
Y-IS	89	159988	0.238	0.000	

Concentration Results

Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
Cr	52	0.221	20.699	0.42	2.0	ug/L
Cr	53	0.024	20.416	0.66	3.2	ug/L
Cr-1	52	1.032	21.868	0.24	1.1	ug/L
Y	89	159988.216				ug/L
Y-IS	89	159988.216	107.817	0.26	0.2	%R

Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Friday, December 15, 2006 12:04:08

Sample Description:

Solution Type: Sample

Blank File:

Number of Replicates: 3

Peak Processing Mode: Average

Signal Profile Processing Mode: Average

Dual Detector Mode: Dual

Dead Time (ns): 35

Sample File: C:\Elandata\Sample\div20.sam

Method File: C:\Elandata\Method\SwRI\Cr_only.mth

Dataset File: c:\elandata\Dataset\06Dec\ccb.1565

Tuning File: c:\elandata\Tuning\default.tun

Optimization File: c:\elandata\Optimize\default.dac

Calibration File:

Calibration Type: External Calibration

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
[	Cr	52	280	0.900	0.000	
|	Cr	53	83	22.995	0.000	
|	Cr-1	52	6932	1.548	0.000	
L>	Y	89	159280	0.517	0.000	
	Y-IS	89	159280	0.517	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	Conc. Mean	Conc. SD	Conc. RSD	Sample Unit
[	Cr	52	0.002	0.026	0.00	3.6	ug/L
|	Cr	53	0.001	-0.027	0.10	366.9	ug/L
|	Cr-1	52	0.044	-0.046	0.01	21.8	ug/L
L>	Y	89	159280.385				ug/L
	Y-IS	89	159280.385	107.340	0.55	0.5	%R