ADDITIONAL DATA

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 060831-10, 060919-6, 061102-7, 061013-8
SRR: 29714, 29778, 29862
SDG: 285418
CASE: M. Roberts
VTSR: August 30, 2006
PROJECT#: 06002.01.242

FINAL REPORT

SOUTHWEST RESEARCH INSTITUTE

SAMPLE ANALYSIS DATA SHEET

010002

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 08/30/06, 09/15/06, 09/29/06, 10/13/06

Matrix: Liquid

Task Order: 060831-10, 060919-6, 061002-7, 061013-8

Project No.: 06002.01.322

Method: ICPMS 6020M

SRR: 29714, 29778, 29862, 29917

Client ID	Lab Sample ID	Potassium Result (mg/L)	Silicon Result (mg/L)	Sodium Result (mg/L)
Prep Blank	-----	<0.00500	<0.00500	<0.00500
Lab Control	-----	0.0184	0.0164	0.0189
True Value	-----	0.0200	0.0200	0.0200
Recovery	-----	92.0%	82.0%	94.5%
Cond.130 ^{0}C 8/14/06	285651	0.634	3.48	2.76
Duplicate result	285651D	0.668	3.57	2.65
RPD	-----	5.2%	2.6%	4.1%
Analytical spike result	285651S	1.02	4.22	3.83
Spike added	-----	0.500	1.00	1.00
Recovery	-----	77.2%	74.0%	107.0%
Cond.130 ^{0}C 8/29/06	285652	0.606	3.62	3.07
Cond.130 ^{0}C 9/15/06	286222	0.114	4.17	2.69
Cond.130 ^{0}C 9/07/06	289223	0.574	3.16	2.88
Cond.130 ^{0}C 9/22/06	287406	0.137	3.44	2.72
Cond.130 ^{0}C 9/29/06	287407	0.147	2.66	2.63
Cond.130 ^{0}C 10/12/06	288097	0.165	3.03	2.89
Cond.130 ^{0}C 10/06/06	288098	0.192	2.84	2.20

Reporting Limit:	0.005 mg/L	0.005 mg/L	0.005 mg/L

010003

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 060831-10, 060919-6, 061102-7, 061013-8
SRR: 29714, 29778, 29862
SDG: 285418
CASE: M. Roberts
VTSR: August 30, 2006
PROJECT#: 06002.01.242

Task Orders/01-QPP-015

Southwest Research Institute

Laboratory Task Order

TO #: 060919-6 Revision: 0

010004

SDG: 286222
VTSR: 09/15/06
CASE: YANG

SRR #'s: 29778
Client(s): Div. 20

Project(s): 06002.01.322
Manager(s): SPIES, RADONNA
To PM: 09/29/06
To QA: 09/29/06
To Client: 10/05/06

Instructions

DIVISION 20 - CNWRA. NO TAT listed on COC.
TWO samples received for NO3, NO2, CL and Na, K analysis. Point of Contact is LIETAI YANG (x2483, lietai.yang@swri.org).

Work is 10 CFR 50 Appendix B, 10 CFR Part 21, contact MARK EHNSTROM (ext. 3530) or CHARLIE BUTCHER (ext. 5928, pager 271-5172) or JO ANN BOYD (ext. 2169) BEFORE STARTING ANY WORK ON THIS TASK ORDER.

** NOTE ** Somewhere on your data, please make a notation indicating WHO and WHEN Mark Ehnstrom or Charlie Butcher or Jo Ann Boyd were contacted. This will help facilitate the final package to QA.

Documents Related to this task order: 25852[COC 29778]

Deliverables --> Hard Copy: -YES- EDD: no PDF: no

Test: DIL-DILUTION
Section: METALPREP

Holding: 28 days from CED
Prep, Dilution
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
286222		1	Liquid	Cond. 130 °C 9/15/06	15 Sep 06	13 Oct 06
286223		1	Liquid	Cond. 130 °C 9/7/06	07 Sep 06	05 Oct 06

Test: IC-300.0
Section: WETCHEM

Holding: 28 days from CED
IC Method 300.0 anions
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
286222		1	Liquid	Cond. 130 °C 9/15/06	15 Sep 06	13 Oct 06
286223		1	Liquid	Cond. 130 °C 9/7/06	07 Sep 06	05 Oct 06

Test: ICP-SWRI
Section: METALS

Holding: 180 days from CED
ICP Analysis by SwRI Method - SODIUM, POTASSIUM
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
286222		1	Liquid	Cond. 130 °C 9/15/06	15 Sep 06	14 Mar 07
286223		1	Liquid	Cond. 130 °C 9/7/06	07 Sep 06	06 Mar 07

010005

Southwest Research Institute

Laboratory Task Order

TO #: 061002-7 Revision: 0

SDG: 287406
VTSR: 09/29/06
CASE: YANG

SRR #'s: 29862
Client(s): Div. 20

Project(s): 06002.01.322
Manager(s): SPIES, RADONNA
To PM: 10/09/06
To QA: 10/09/06
To Client: 10/12/06

Instructions

DIVISION 20 - CNWRA. NO TAT listed on COC.
TWO samples received for NO3, NO2, CL and Na, K analysis. Point of Contact is LIETAI YANG (x2483, lietai.yang@swri.org).

Work is 10 CFR 50 Appendix B, 10 CFR Part 21, contact MARK EHNSTROM (ext. 3530) or CHARLIE BUTCHER (ext. 5928, pager 271-5172) or JO ANN BOYD (ext. 2169) BEFORE STARTING ANY WORK ON THIS TASK ORDER.

** NOTE ** Somewhere on your data, please make a notation indicating WHO and WHEN Mark Ehnstrom or Charlie Butcher or Jo Ann Boyd were contacted. This will help facilitate the final package to QA.

Documents Related to this task order: 26184[COC 29862]

Deliverables --> Hard Copy: -YES- EDD: no PDF: no

Test: DIL-DILUTION
Section: METALPREP
Holding: 28 days from CED
Prep, Dilution
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
287406		1	Liquid	Cond. 130 °C 9/22/06	22 Sep 06	20 Oct 06
287407		1	Liquid	Cond. 130 °C 9/29/06	29 Sep 06	27 Oct 06

Test: IC-300.0
Section: WETCHEM
Holding: 28 days from CED
IC Method 300.0 anions (only for Bromide, Chloride, Fluoride, Sulfate)
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
287406		1	Liquid	Cond. 130 °C 9/22/06	22 Sep 06	20 Oct 06
287407		1	Liquid	Cond. 130 °C 9/29/06	29 Sep 06	27 Oct 06

Test: ICP-SWRI
Section: METALS
Holding: 180 days from CED
ICP Analysis by SwRI Method - SODIUM, POTASSIUM
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
287406		1	Liquid	Cond. 130 °C 9/22/06	22 Sep 06	21 Mar 07
287407		1	Liquid	Cond. 130 °C 9/29/06	29 Sep 06	28 Mar 07

010006

Southwest Research Institute

Laboratory Task Order

TO #: 060831-10 Revision: 0

SDG: 285651
VTSR: 08/30/06
CASE: YANG

SRR #'s: 29714
Client(s): Div. 20

Project(s): 06002.01.322
Manager(s): SPIES, RADONNA
To PM: 09/13/06
To QA: 09/25/06
To Client: 09/26/06

Instructions

DIVISION 20 - CNWRA. NO TAT listed on COC.
TWO samples received for NO3, NO2, CL and Na, K analysis. Point of Contact is LIETAI YANG (x2483, lietai.yang@swri.org).

Work is 10 CFR 50 Appendix B, 10 CFR Part 21, contact MARK EHNSTROM (ext. 3530) or CHARLIE BUTCHER (ext. 5928, pager 271-5172) or JO ANN BOYD (ext. 2169) BEFORE STARTING ANY WORK ON THIS TASK ORDER.

** NOTE ** Somewhere on your data, please make a notation indicating WHO and WHEN Mark Ehnstrom or Charlie Butcher or Jo Ann Boyd were contacted. This will help facilitate the final package to QA.

Documents Related to this task order: 25376[COC 29714]

Deliverables --> Hard Copy: -YES- EDD: no PDF: no

Test: DIL-DILUTION
Section: METALPREP
Holding: 28 days from CED
Prep, Dilution
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
285651		1	Liquid	Cond. 130 °C 8/14/06	14 Aug 06	11 Sep 06
285652		1	Liquid	Cond. 130 °C 8/29/06	29 Aug 06	26 Sep 06

Test: IC-300.0
Section: WETCHEM
Holding: 28 days from CED
IC Method 300.0 anions
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
285651		1	Liquid	Cond. 130 °C 8/14/06	14 Aug 06	11 Sep 06
285652		1	Liquid	Cond. 130 °C 8/29/06	29 Aug 06	26 Sep 06

Test: ICP-SWRI
Section: METALS
Holding: 180 days from CED
ICP Analysis by SwRI Method - SODIUM, POTASSIUM
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
285651		1	Liquid	Cond. 130 °C 8/14/06	14 Aug 06	10 Feb 07
285652		1	Liquid	Cond. 130 °C 8/29/06	29 Aug 06	25 Feb 07

Southwest Research Institute

Laboratory Task Order

010007

TO #: 061013-8 Revision: 1

SDG:
Other1: VTSR: 10/13/06

SRR #'s: 29917
Client(s): Div. 20

Project(s): 06002.01.322
Manager(s): SPIES, RADONNA
To PM:
To QA: 10/12/06
To Client: 11/15/06

Instructions

DIVISION 20 - CNWRA. NO TAT listed on COC. TWO samples received for NO3, NO2, CL and Na, K analysis. Point of Contact is LIETAI YANG (x2483, lietai.yang@swri.org). ---------- Work is 10 CFR 50 Appendix B, 10 CFR Part 21----------

Documents Related to this task order: 26400[COC 29917]

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

Test: IC-300.0
Section: WETCHEM

Holding: 28 days from CED

IC Method 300.0 anions (only for Bromide, Chloride, Fluoride, Sulfate)

Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
288097		1	Liquid	Cond. 130 °C 10/12/06	12 Oct 06	09 Nov 06
288098		1	Liquid	Cond. 130 °C 10/6/06	06 Oct 06	03 Nov 06

Test: ICP-6010B
Section: METALS

Holding: 180 days from CED

ICP Method 6010B Total Metals

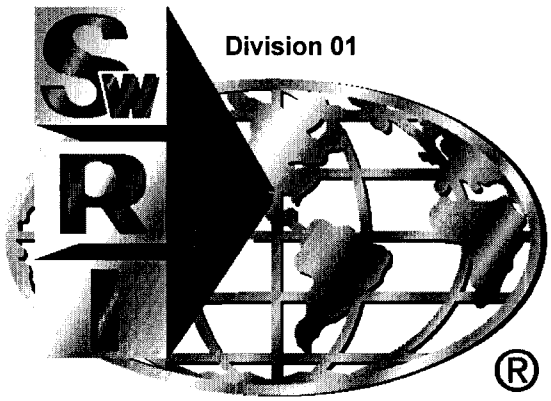
Cnt: 2

System ID	Type	Cont	Matrix	Customer ID	CED	Method Date
288097		1	Liquid	Cond. 130 °C 10/12/06	12 Oct 06	10 Apr 07
288098		1	Liquid	Cond. 130 °C 10/6/06	06 Oct 06	04 Apr 07

010008

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 ENVIONMENTAL 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 — 6/28/06 **DATE**
Quality Assurance Manager

REZA KARIMI (210) 522-2412 — 6/28/06 **DATE**
Director, Department of Analytical and Environmental Chemistry

MICHAEL G. MACNAUGHTON (210) 522-5162 — 6/29/06 **DATE**
Vice President, Chemistry and Chemical Engineering Division

CHRISTOPHER HOBSON (210) 522-5838 — 7/6/2006 **DATE**
Quality Assurance Engineer

TABLE OF CONTENTS

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 then 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 or 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 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 Managemet 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.

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"

ORGANICS

Southwest Research Institute

PERSONNEL SIGNATURE SHEET FOR PLANS

010018

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)**

Printed Name	Signature	Date	Tel Extension
Jenny Zhang		9/28/06	2759
Pamela Piccin		9/28/06	2167
Jason D. Herrera		9/28/06	2186
William L. Barclay Jr.		9/28/2006	9527

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

METALS / WETCHEM / RAD

Southwest Research Institute

PERSONNEL SIGNATURE SHEET FOR PLANS

010019

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)**

Printed Name	Signature	Date	Tel Extension
Valerie DeJesus	Valerie DeJesus	07/20/06	3129
Warren A. Naegeli	Warren A. Naegeli	07/20/06	6079
Carolina Orduña	Carolina Orduña	7/20/06	3146
Dana Harris		7-20-06	3423
Jackie Ranger	Jackie Ranger	7/20/06	3320
James Jobs	James Jobs	07/20/06	8878
Bernie Villaseñor	Bernie Villaseñor	7/20/06	2702
RaDonna Spies	RaDonna Spies	7/20/06	3242

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

Southwest Research Institute

010020

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)**

Printed Name	Signature	Date	Tel Extension
DAVID A PINEDA		7.13.2006	2776
Marissa A. Rodriguez		7/13/06	2476
Roger Presas		7/13/06	3682
Cynthia A. Sanchez		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

010021

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 060831-10, 060919-6, 061102-7, 061013-8
SRR: 29714, 29778, 29862
SDG: 285418
CASE: M. Roberts
VTSR: August 30, 2006
PROJECT#: 06002.01.242

Chain of Custody/Login Paperwork

25852

SAMPLE LIST/CHAIN OF CUSTODY

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

Shipper Name/ Address: 10022

Client: Letai Yang X 2483

Client Purchase Order/Other ID: 06002.01.322.1.20

Site/Zone ID:

Requested Turnaround:
- [ ] 2 Weeks
- [ ] 3 Weeks
- [ ] Other:

SwRI Contact: R. Spies

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers	Na^+	K^+	Cl^-	NO_3^-	NO_2^-	~~SS~~ Ly. 9/15/06	Si			
Cond. 130°C	9/7/06				1	Na^+	K^+	Cl^-	NO_3^-	NO_2^-	~~SS~~	Si			
Cond. 130°C	9/15/06				1	↓	↓	↓	↓	↓		↓			

Please Return Used Samples

REMARKS

Preservation
- **a** = HCl to pH <2
- **b** = HNO_3 to pH <2
- **c** = H_2SO_4 to pH <2
- **d** = NaOH to pH >12
- **e** = Cool (4°C±2°C)
- **f** = Other (specify)

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

	Date	Time
Relinquished by (Print/Signature): Steve Young	9/15/06	1600
Received by (Print/Signature):		
Relinquished by (Print/Signature):		
Received by (Print/Signature):		
Relinquished by (Print/Signature):		

SwRI Project#: see above

Received by SwRI Lab: (Signature)

Date: 9/15/06 Time: 1600

Samples Disposed:

Date | Time

Samples Disposed by:

SwRI # 25278

SAMPLE LOG-IN SHEET

010023

Lab Name: Southwest Research Institute

Received By (Print Name): DINO ROMAN

Received By (Signature):

Log-in Date: 09/15/2006

Case Number: L. Yang

Remarks: 06002.01.322

Sample Delivery Group No.

SAS Number: N/A

Remarks: Condition of Sample Shipment, etc

			EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	
1.	Custody Seal(s)	Present/(Absent*) Intact/Broken	Cond. 130 °C 9/15/06	None	286222	Intact
2.	Custody Seal Nos.	N/A	Cond. 130 °C 9/7/06	None	286223	Intact
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	09/15/2006				
12.	Time Received	16:00:00				

Sample Transfer

Fraction	Area #	By	On
	Twang Cab #2	DINO ROMAN	09/15/2006
Fraction	Area #	By	On

* Contact SMO and attach record of resolution

Reviewed By: [signature]

Date: 09.18.06

Logbook No.: Sample Receipt (29778)

Logbook Page No.: 5926 Sec 2 of 2

FORM DC-1

OLMO4.2

26184

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: ASAP

Shipper Name/ Address:

Client: x2483 Lietai Yang, Div.20

Client Purchase Order/Other ID: 060002.01.322.1.20

Site/Zone ID:

SwRI Contact:

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers	Na	Cl	NO_3	NO_2						
610024 Cond. 130°C	9/22/06		L		1	↓	↓	↓	↓						
Cond. 130°C	9/29/06		L		1	↓	↓	↓	↓						
								please return unused samples							

REMARKS

Preservation
- **a** = HCl to pH <2
- **b** = HNO_3 to pH <2
- **c** = H_2SO_4 to pH <2
- **d** = NaOH to pH >12
- **e** = Cool (4°C±2°C)
- **f** = Other (specify)

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

Rec'd Intact

Relinquished by (Print/Signature)	Date	Time
Jessica Auguste	9/29/06	16:00
Received by (Print/Signature)	Date	Time
Relinquished by (Print/Signature)	Date	Time
Received by (Print/Signature)	Date	Time
Relinquished by (Print/Signature)	Date	Time

SwRI Project#: See Above

Received by SwRI Lab: (Signature)

Date: 9/29/06 Time: 1600

Samples Disposed: Date / Time

Samples Disposed by:

SAMPLE LOG-IN SHEET

010025

Lab Name: Southwest Research Institute

Received By (Print Name): DINO ROMAN

Received By (Signature):

Log-in Date: 09/29/2006

Case Number: L. Yang

Sample Delivery Group No.

SAS Number: N/A

Remarks: 06002.01.322

			Corresponding EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc
1.	Custody Seal(s)	Present/~~Absent~~* Intact/Broken	Cond. 130 °C 9/22/06	None	287406	Intact
2.	Custody Seal Nos.	N/A	Cond. 130 °C 9/29/06	None	287407	Intact
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	09/29/2006				
12.	Time Received	16:00:00				

Sample Transfer

Fraction	Org/Inorg GC#2	Fraction
Area #		Area #
By	DINO ROMAN	By
On	09/29/2006	On

* Contact SMO and attach record of resolution

Reviewed By:

Date: 10.02.06

Logbook No.: Sample Receipt (29862)

Logbook Page No.: 5940 SEC 5.15

SAMPLE LIST/CHAIN OF CUSTODY

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

Shipper Name/ Address:

Client: x 2483 Lietai Yang, Div. 20

Client Purchase Order/Other ID: 06002.01.322.1.20

Site/Zone ID:

Requested Turnaround:
- [ ] 2 Weeks
- [ ] 3 Weeks
- [ ] Other:

SwRI Contact: R. Spies

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers										
Cond. 130°C	8/14/06		L		1	Na	K	Cl	NO_2	NO_2					
Cond. 130°C	8/29/06		L		1	↓	↓	↓	↓	↓					

Client: Div. 20
SRR #29714
Project #06002.01.322
Case: L. Yang
VTSR: 08/30/06 1500
Sample(s) Received Intact
Temperature: 22.0°C/#027

REMARKS

Please return unused samples

Preservation
- a = HCl to pH <2
- b = HNO_3 to pH <2
- c = H_2SO_4 to pH <2
- d = NaOH to pH >12
- e = Cool (4°C±2°C)
- f = Other (specify)

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

Rec'd Intact

	Date	Time
Relinquished by (Print/Signature): Steve Young	8/30/06	15:00
Received by (Print/Signature):		
Relinquished by (Print/Signature):		
Received by (Print/Signature):		
Relinquished by (Print/Signature):		

SwRI Project#: See Above

Received by SwRI Lab: (Signature)

Date: 8/30/06 Time: 1445 1500 8/31/06

Samples Disposed: Date / Time

Samples Disposed by:

010026

SAMPLE LOG-IN SHEET

010027

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): EMILIO GAMEZ	Log-in Date: 08/30/2006
Received By (Signature)	
Case Number: L. Yang	Sample Delivery Group No.: 285651
Remarks: 06002.01.322	SAS Number

			Corresponding		Remarks: Condition of Sample Shipment, etc
		EPA Sample #	Sample Tag #	Assigned Lab #	
1.	Custody Seal(s)	Present/Absent* Intact/Broken	Cond. 130 °C 8/14/06	None	285651	Intact
2.	Custody Seal Nos.	_____ _____	Cond. 130 °C 8/29/06	None	285652	Intact
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	08/30/2006				
12.	Time Received	15:00:00				

Sample Transfer	
Fraction	Fraction
Area #	Area #
By EMILIO GAMEZ	By
On 08/30/2006	On

* Contact SMO and attach record of resolution

Reviewed By	Logbook No. Sample Receipt (29714)
Date	Logbook Page No. 5910

SAMPLE LIST/CHAIN OF CUSTODY

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

Shipper Name/ Address:

Client: x2483
Lietai Yang, Div. 20

Client Purchase Order/Other ID: 06002.01.322.1.20

Site/Zone ID:

Requested Turnaround:
- [ ] 2 Weeks
- [ ] 3 Weeks
- [ ] Other:

SwRI Contact:

Analyses Requested

Sample ID	Sample Collection Date (mm/dd/yy)	Sample Collection Time	Matrix Type	Sample Type	# of Containers	Na	Cl	NO_3	NO_2
Cond. 130°C	10/6/06		L		1	Na	Cl	NO_3	NO_2
Cond. 130°C	10/12/06		↓		1	↓	↓	↓	↓

please return unused samples

REMARKS
Preservation
- a = HCl to pH <2
- b = HNO_3 to pH <2
- c = H_2SO_4 to pH <2
- d = NaOH to pH >12
- e = Cool (4°C±2°C)
- f = Other (specify)

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

Acc'd Intact

	Date	Time
Relinquished by (Print/Signature): Jessica Auguste	10/12/06	1600
Received by (Print/Signature):		
Relinquished by (Print/Signature):		
Received by (Print/Signature):		
Relinquished by (Print/Signature):		

SwRI Project#: See Above

Received by SwRI Lab: (Signature)

Date: 10/12/06 Time: 1625

Samples Disposed: Date / Time

Samples Disposed by:

010028

SAMPLE LOG-IN SHEET 010029

Lab Name: Southwest Research Institute	Page 1 of 1
Received By (Print Name): DINO ROMAN	Log-in Date: 10/12/2006
Received By (Signature)	

Case Number: L. Yang	Sample Delivery Group No.	SAS Number

Remarks: 06002.01.322

		EPA Sample #	Corresponding Sample Tag #	Corresponding Assigned Lab #	Remarks: Condition of Sample Shipment, etc
1.	Custody Seal(s)	Present/Absent* Intact/Broken			
2.	Custody Seal Nos.				
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	10/12/2006			
12.	Time Received	16:25:00			
		Cond. 130 °C 10/12/06	None	288097	Intact
		Cond. 130 °C 10/6/06	None	288098	Intact

Sample Transfer	
Fraction	Fraction
Area #	Area #
By DINO ROMAN	By
On 10/12/2006	On

* Contact SMO and attach record of resolution

Reviewed By	Logbook No. Sample Receipt (29917)
Date	Logbook Page No. 5953

010030

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 060831-10, 060919-6, 061102-7, 061013-8
SRR: 29714, 29778, 29862
SDG: 285418
CASE: M. Roberts
VTSR: August 30, 2006
PROJECT#: 06002.01.242

Copies of Login Book

Sample Login Book

Aug 30, 2006

010031

SwRI Login Area
Division 1

Sample Receipt: 29711	Project: 01.01446.003	Client: W.L. GORE
VTSR Date: Aug 30, 2006	VTSR Time: 12:05:00	Manager: DAMMANN, MIKE

System ID	Customer Sample ID	Matrix
285635	Lot# PATT B-0604-01	Solid
285636	Lot# PATT B-0604-02	Solid
285637	Lot# PATT B-0604-03	Solid
285638	Lot# PATT B-0604-04	Solid
285639	Lot# PATT B-0604-05	Solid
285640	Lot# PATT B-0604-06	Solid

Sample Receipt: 29712	Project: OHD01.113	Client: PE Samples
VTSR Date: Aug 30, 2006	VTSR Time: 11:30:00	Manager: BOYD, JOANN

System ID	Customer Sample ID	Matrix
285641	SPE-016 (Lot #011280)	Solid
285642	SPE-016 (Lot #011625)	Solid

Sample Receipt: 29713	Project: 11817.02.021	Client: GM R&D Center
VTSR Date: Aug 30, 2006	VTSR Time: 11:30:00	Manager: SCHATTENBERG, HERB

System ID	Customer Sample ID	Matrix
285645	041720060018	Solid
285646	041720060019	Solid
285647	041720060020	Solid
285648	041720060021	Solid
285649	041720060022	Solid
285650	041720060023	Solid

Sample Receipt: 29714	Project: 06002.01.322	Client: Div. 20
VTSR Date: Aug 30, 2006	VTSR Time: 15:00:00	Manager: SPIES, RADONNA

System ID	Customer Sample ID	Matrix
285651	Cond. 130 °C 8/14/06	Liquid

Sample Login Book

Aug 30, 2006

010032

SwRI Login Area
Division 1

Sample Receipt: 29714	Project: 06002.01.322	Client: Div. 20
VTSR Date: Aug 30, 2006	VTSR Time: 15:00:00	Manager: SPIES, RADONNA

System ID	Customer Sample ID	Matrix
285652	Cond. 130 °C 8/29/06	Liquid

Number of samples for today: 48

Number of Containers for today: 51

Sample Login Book

Sep 29, 2006

010033

SwRI Login Area
Division 1

Sample Receipt: 29861	Project: 12348.01.10X	Client: Enterprise Advis
VTSR Date: Sep 29, 2006	VTSR Time: 15:45:00	Manager: SUN, GANG

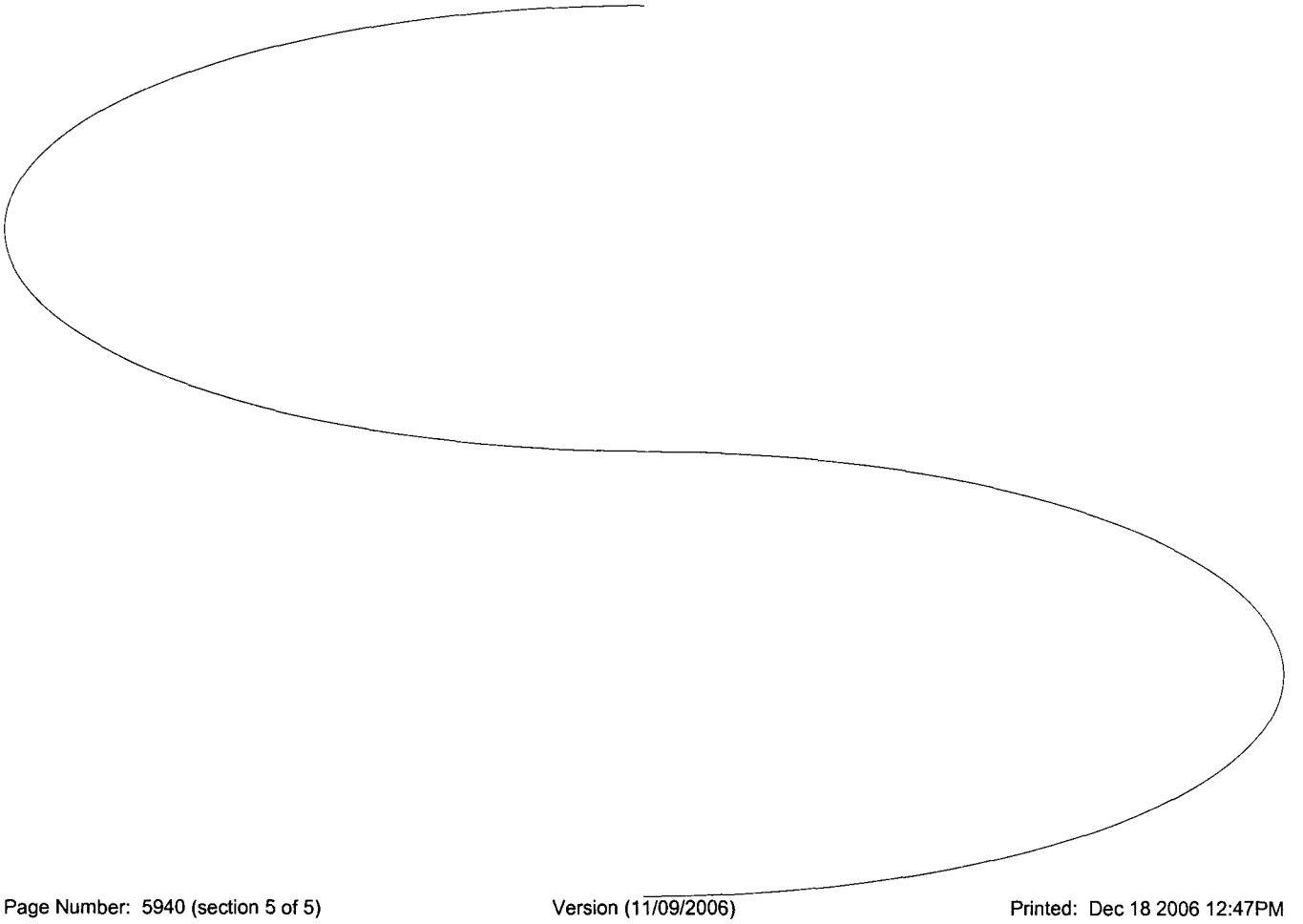
System ID	Customer Sample ID	Matrix
287403	0609280906	Aqueous
287404	0609280937	Aqueous
287405	0609280939	Aqueous

Sample Receipt: 29862	Project: 06002.01.322	Client: Div. 20
VTSR Date: Sep 29, 2006	VTSR Time: 16:00:00	Manager: SPIES, RADONNA

System ID	Customer Sample ID	Matrix
287406	Cond. 130 °C 9/22/06	Liquid
287407	Cond. 130 °C 9/29/06	Liquid

Number of samples for today: 89

Number of Containers for today: 89



Sample Login Book

Sep 15, 2006

010034

SwRI Login Area
Division 1

Sample Receipt: 29778	Project: 06002.01.322	Client: Div. 20
VTSR Date: Sep 15, 2006	VTSR Time: 16:00:00	Manager: SPIES, RADONNA

System ID	Customer Sample ID	Matrix
286222	Cond. 130 °C 9/15/06	Liquid
286223	Cond. 130 °C 9/7/06	Liquid

Number of samples for today: 18

Number of Containers for today: 42

010035

SOUTHWEST RESEARCH INSTITUTE
NUCLEAR PROJECT
CLIENT: Division 20
TASK ORDER: 060831-10, 060919-6, 061102-7, 061013-8
SRR: 29714, 29778, 29862
SDG: 285418
CASE: M. Roberts
VTSR: August 30, 2006
PROJECT#: 06002.01.242

RAW DATA

Div 20
TO# 060831-10, 060919-6, 061002-7, 061013-8
Proj.# 06002.01.322

010036

Sample ID	Element	Result	Qual (C)	Qual (Q)	Units	RL	%RPD	%Recovery	TV	rl	mg/l	sigwt	Dilution	Calc RL	ug/l	Date	Time
pbw-m11c4	Na_23	0.00500	U		mg/l	0.005				5	0.0001718	0.000172	1	0.005	0.17182	12/11/06	4:40 PM
pbw-m11c4	Si_28	0.00500	U		mg/l	0.005				5	-0.000416	-0.00042	1	0.005	-0.41574	12/11/06	4:40 PM
lcsw-m11c4	Na_23	0.0189			mg/l	0.005		94.5%	0.02	5	0.0189467	0.0189	1	0.005	18.94671	12/11/06	4:42 PM
lcsw-m11c4	Si_28	0.0164			mg/l	0.005		82.0%	0.02	5	0.0164225	0.0164	1	0.005	16.42249	12/11/06	4:42 PM
285651	Na_23	2.76			mg/l	0.25				5	2.7635775	2.76	50	0.25	55.27155	12/11/06	4:45 PM
285651	Si_28	3.48			mg/l	0.25				5	3.4786095	3.48	50	0.25	69.57219	12/11/06	4:45 PM
285651d	Na_23	2.65			mg/l	0.25	4.1%			5	2.6540165	2.65	50	0.25	53.08033	12/11/06	4:47 PM
285651d	Si_28	3.57			mg/l	0.25	2.6%			5	3.5721465	3.57	50	0.25	71.44293	12/11/06	4:47 PM
285651s	Na_23	3.83			mg/l	0.25		107.0%	1	5	3.832979	3.83	50	0.25	76.65958	12/11/06	5:16 PM
285651s	Si_28	4.22			mg/l	0.25		74.5%	1	5	4.223616	4.22	50	0.25	84.47232	12/11/06	5:16 PM
285652	Na_23	3.07			mg/l	0.25				5	3.0713255	3.07	50	0.25	61.42651	12/11/06	4:52 PM
285652	Si_28	3.62			mg/l	0.25				5	3.618624	3.62	50	0.25	72.37248	12/11/06	4:52 PM
286222	Na_23	2.69			mg/l	0.25				5	2.6867455	2.69	50	0.25	53.73491	12/11/06	4:54 PM
286222	Si_28	4.17			mg/l	0.25				5	4.170014	4.17	50	0.25	83.40028	12/11/06	4:54 PM
286223	Na_23	2.88			mg/l	0.25				5	2.875591	2.88	50	0.25	57.51182	12/11/06	4:57 PM
286223	Si_28	3.16			mg/l	0.25				5	3.1559995	3.16	50	0.25	63.11999	12/11/06	4:57 PM
287406	Na_23	2.72			mg/l	0.25				5	2.7222365	2.72	50	0.25	54.44473	12/11/06	4:59 PM
287406	Si_28	3.44			mg/l	0.25				5	3.4368005	3.44	50	0.25	68.73601	12/11/06	4:59 PM
287407	Na_23	2.63			mg/l	0.25				5	2.625792	2.63	50	0.25	52.51584	12/11/06	5:04 PM
287407	Si_28	2.66			mg/l	0.25				5	2.6580995	2.66	50	0.25	53.16199	12/11/06	5:04 PM
288097	Na_23	2.89			mg/l	0.25				5	2.894055	2.89	50	0.25	57.8811	12/11/06	5:11 PM
288097	Si_28	3.03			mg/l	0.25				5	3.0299145	3.03	50	0.25	60.59829	12/11/06	5:11 PM
288098	Na_23	2.20			mg/l	0.25				5	2.2014875	2.2	50	0.25	44.02975	12/11/06	5:13 PM
288098	Si_28	2.84			mg/l	0.25				5	2.8364165	2.84	50	0.25	56.72833	12/11/06	5:13 PM

Qdwng 12/13/06

285651: Na

$$\frac{55.27155 \frac{\mu g}{L} * df50}{1000} = 2.76 \frac{mg}{L}$$

12/13/06

010037

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

☑ 6020 TAP No. 01-0406-046 Rev10/Jan 06 mod

☐ Other _____

ICP-MS CALIB. STD. ID's

S0 MS07-068-01
STD. 1 ↓ -02
STD. 2 _____
STD. 3 _____

ANALYSIS

Na, Si

QC STD. ID's

ICV/CCV MS07-058-02
CRI _____
ICSA _____
ICSAB _____

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBK PG
06002.01.322	DRV20	060831-10	12/11/06	liq	N/A
		060919-6			
		061002-7			
		061013-8			

INSTRUMENT: DRC II FILENAME: 083110.rep

Analyst: Orduña 12/12/06

Quantitative Analysis - Summary Report

010038

Aduna
12/11/06

Sample ID: S-0

Sample Date/Time: Monday, December 11, 2006 16:30:39
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\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\S-0.1083
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
⌈	K	39	42694	0.427	0.000	
|	Na	23	4040	2.446	0.000	
|	Si	28	23276	2.295	0.000	
⌊>	Y	89	167526	0.956	0.000	
	Y-IS	89	167526	0.956	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.255				ug/L
|	Na	23	0.024				ug/L
|	Si	28	0.139				ug/L
⌊>	Y	89	167525.602				ug/L
	Y-IS	89	167525.602	**100.000**	0.96	1.0	%R

12/13/06

Quantitative Analysis - Summary Report

010039

Sample ID: S-50

Sample Date/Time: Monday, December 11, 2006 16:33:02
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\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\S-50.1084
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
⌜	K	39	109001	1.424	0.000	
|	Na	23	294057	1.507	0.000	
|	Si	28	163599	1.570	0.000	
⌞>	Y	89	166842	1.474	0.000	
	Y-IS	89	166842	1.474	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.653	**50.000**	2.16	4.3	ug/L
|	Na	23	1.763	**50.000**	0.75	1.5	ug/L
|	Si	28	0.981	**50.000**	0.82	1.6	ug/L
⌞>	Y	89	166842.086				ug/L
	Y-IS	89	166842.086	**99.592**	1.47	1.5	%R

010040

Quantitative Analysis - Summary Report

Sample ID: icv

Sample Date/Time: Monday, December 11, 2006 16:35:26
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\icv.1085
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Calibration File:
Calibration Type: External Calibration

V=20ppb
@dwn
12/11/06

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	K	39	67547	0.372	0.000	
|	Na	23	127697	1.463	0.000	
|	Si	28	81406	1.362	0.000	
⌞>	Y	89	164901	1.432	0.000	
	Y-IS	89	164901	1.432	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.410	**19.416**	0.58	3.0	ug/L
|	Na	23	0.774	**21.579**	0.31	1.4	ug/L
|	Si	28	0.494	**21.079**	0.74	3.5	ug/L
⌞>	Y	89	164901.403				ug/L
	Y-IS	89	164901.403	**98.434**	1.41	1.4	%R

Quantitative Analysis - Summary Report

Sample ID: icb

Sample Date/Time: Monday, December 11, 2006 16:37:50
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\icb.1086
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
⌈	K	39	40753	0.745	0.000	
|	Na	23	4065	2.037	0.000	
|	Si	28	24188	1.646	0.000	
⌊>	Y	89	168673	1.810	0.000	
	Y-IS	89	168673	1.810	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.242	**-1.660**	0.41	24.6	ug/L
|	Na	23	0.024	**-0.000**	0.00	384.7	ug/L
|	Si	28	0.143	**0.268**	0.29	108.2	ug/L
⌊>	Y	89	168673.142				ug/L
	Y-IS	89	168673.142	**100.685**	1.82	1.8	%R

Quantitative Analysis - Summary Report

010042

Sample ID: pbw-m11c4

Sample Date/Time: Monday, December 11, 2006 16:40:15
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

pbw prepd in 1% HNO_3 #

Oduna 12/11/06

Sample File: C:\Elandata\Sample\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\pbw-m11c4.1087
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
⌈	K	39	40716	0.537	0.000	
|	Na	23	5009	3.134	0.000	
|	Si	28	21963	2.546	0.000	
⌊>	Y	89	166462	0.444	0.000	
	Y-IS	89	166462	0.444	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.245	**-1.289**	0.17	13.2	ug/L
|	Na	23	0.030	**0.172**	0.03	16.7	ug/L
|	Si	28	0.132	**-0.416**	0.23	56.3	ug/L
⌊>	Y	89	166461.896				ug/L
	Y-IS	89	166461.896	**99.365**	0.44	0.4	%R

Quantitative Analysis - Summary Report

010043

Sample ID: lcsw-m11c4

Sample Date/Time: Monday, December 11, 2006 16:42:40
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\lcsw-m11c4.1088
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Calibration File:
Calibration Type: External Calibration

Added 400µL of 250ppb K, Na, Si to 4 ml 1% HNO_3#
TV = 20 ppb
Adina
12/11/06

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	K	39	66798	1.861	0.000	
|	Na	23	117402	0.521	0.000	
|	Si	28	71410	0.167	0.000	
⌞>	Y	89	171931	1.309	0.000	
	Y-IS	89	171931	1.309	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.389	**16.763**	0.59	3.5	ug/L
|	Na	23	0.683	**18.947**	0.16	0.8	ug/L
|	Si	28	0.415	**16.422**	0.36	2.2	ug/L
⌞>	Y	89	171930.869				ug/L
	Y-IS	89	171930.869	**102.630**	1.34	1.3	%R

Quantitative Analysis - Summary Report

Sample ID: 285651 df50

Sample Date/Time: Monday, December 11, 2006 16:45:05
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\285651 df50.1089
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
⌜	K	39	65267	1.032	0.000	
|	Na	23	341066	0.440	0.000	
|	Si	28	229652	1.765	0.000	
⌞>	Y	89	175298	1.470	0.000	
	Y-IS	89	175298	1.470	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.372	**14.741**	0.98	6.6	ug/L
|	Na	23	1.946	**55.272**	0.80	1.5	ug/L
|	Si	28	1.310	**69.572**	0.86	1.2	ug/L
⌞>	Y	89	175297.786				ug/L
	Y-IS	89	175297.786	**104.639**	1.54	1.5	%R

Quantitative Analysis - Summary Report

010045

Sample ID: 285651d df50

Sample Date/Time: Monday, December 11, 2006 16:47:30
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\285651d df50.1090
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
⌈	K	39	62026	0.443	0.000	
|	Na	23	329143	1.341	0.000	
|	Si	28	236162	0.802	0.000	
⌊>	Y	89	176035	0.914	0.000	
	Y-IS	89	176035	0.914	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.352	**12.230**	0.52	4.2	ug/L
|	Na	23	1.870	**53.080**	0.27	0.5	ug/L
|	Si	28	1.342	**71.443**	0.09	0.1	ug/L
⌊>	Y	89	176035.347				ug/L
	Y-IS	89	176035.347	**105.080**	0.96	0.9	%R

010046

51 **Quantitative Analysis - Summary Report**

Sample ID: 285641s df50

Sample Date/Time: Monday, December 11, 2006 16:49:55
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

Oduña 12/11/06

Sample File: C:\Elandata\Sample\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\285641s df50.1091
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
⌜	K	39	83623	1.352	0.000	
|	Na	23	408534	1.187	0.000	
|	Si	28	268467	2.495	0.000	
⌞>	Y	89	174857	1.419	0.000	
	Y-IS	89	174857	1.419	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.478	**28.024**	0.98	3.5	ug/L
|	Na	23	2.337	**66.510**	1.15	1.7	ug/L
|	Si	28	1.535	**82.945**	1.01	1.2	ug/L
⌞>	Y	89	174856.753				ug/L
	Y-IS	89	174856.753	**104.376**	1.48	1.4	%R

Quantitative Analysis - Summary Report

Sample ID: 285652 df50

Sample Date/Time: Monday, December 11, 2006 16:52:21
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\285652 df50.1092
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
⌜	K	39	62371	1.095	0.000	
|	Na	23	380294	1.651	0.000	
|	Si	28	239016	1.717	0.000	
⌞>	Y	89	176124	2.091	0.000	
	Y-IS	89	176124	2.091	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.354	**12.457**	0.52	4.2	ug/L
|	Na	23	2.160	**61.427**	1.73	2.8	ug/L
|	Si	28	1.357	**72.372**	0.98	1.4	ug/L
⌞>	Y	89	176124.014				ug/L
	Y-IS	89	176124.014	**105.133**	2.20	2.1	%R

Quantitative Analysis - Summary Report

Sample ID: 286222 df50

Sample Date/Time: Monday, December 11, 2006 16:54:46
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\286222 df50.1093
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
⌈	K	39	46557	0.431	0.000	
|	Na	23	332979	1.803	0.000	
|	Si	28	271465	1.788	0.000	
⌊>	Y	89	175947	1.618	0.000	
	Y-IS	89	175947	1.618	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.265	**1.227**	0.63	51.1	ug/L
|	Na	23	1.892	**53.735**	0.27	0.5	ug/L
|	Si	28	1.543	**83.400**	0.25	0.3	ug/L
⌊>	Y	89	175947.062				ug/L
	Y-IS	89	175947.062	**105.027**	1.70	1.6	%R

Quantitative Analysis - Summary Report

Sample ID: 286223 df50

Sample Date/Time: Monday, December 11, 2006 16:57:11
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\286223 df50.1094
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
⌈	K	39	59001	0.643	0.000	
|	Na	23	355957	1.140	0.000	
|	Si	28	211315	1.470	0.000	
⌊>	Y	89	175909	1.358	0.000	
	Y-IS	89	175909	1.358	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.335	**10.106**	0.47	4.7	ug/L
|	Na	23	2.024	**57.512**	1.08	1.9	ug/L
|	Si	28	1.201	**63.120**	1.63	2.6	ug/L
⌊>	Y	89	175909.212				ug/L
	Y-IS	89	175909.212	**105.004**	1.43	1.4	%R

Quantitative Analysis - Summary Report

Sample ID: 287406 df50

Sample Date/Time: Monday, December 11, 2006 16:59:36
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\287406 df50.1095
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
⌈	K	39	50027	0.082	0.000	
|	Na	23	332648	3.028	0.000	
|	Si	28	224848	1.933	0.000	
⌊>	Y	89	173492	1.227	0.000	
	Y-IS	89	173492	1.227	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.288	**4.203**	0.42	10.0	ug/L
|	Na	23	1.917	**54.445**	1.14	2.1	ug/L
|	Si	28	1.296	**68.736**	1.09	1.6	ug/L
⌊>	Y	89	173491.892				ug/L
	Y-IS	89	173491.892	**103.561**	1.27	1.2	%R

Quantitative Analysis - Summary Report

Sample ID: 287407 df50

Sample Date/Time: Monday, December 11, 2006 17:04:14
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\287407 df50.1096
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
⌜	K	39	49215	0.806	0.000	
|	Na	23	328965	1.385	0.000	
|	Si	28	183842	0.687	0.000	
⌞>	Y	89	177834	1.117	0.000	
	Y-IS	89	177834	1.117	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.277	**2.747**	0.57	20.8	ug/L
|	Na	23	1.850	**52.516**	1.15	2.2	ug/L
|	Si	28	1.034	**53.162**	0.59	1.1	ug/L
⌞>	Y	89	177834.455				ug/L
	Y-IS	89	177834.455	**106.154**	1.19	1.1	%R

Quantitative Analysis - Summary Report

010052

Sample ID: ccv

Sample Date/Time: Monday, December 11, 2006 17:06:39
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\ccv.1097
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
⌜	K	39	67066	0.479	0.000	
|	Na	23	129568	2.632	0.000	
|	Si	28	80600	1.403	0.000	
⌞>	Y	89	168456	1.363	0.000	
	Y-IS	89	168456	1.363	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.398	**17.973**	0.51	2.8	ug/L
|	Na	23	0.769	**21.428**	0.51	2.4	ug/L
|	Si	28	0.478	**20.171**	0.40	2.0	ug/L
⌞>	Y	89	168455.841				ug/L
	Y-IS	89	168455.841	**100.555**	1.37	1.4	%R

010053

Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Monday, December 11, 2006 17:09:03
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\ccb.1098
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
⌜	K	39	40571	0.300	0.000	
|	Na	23	3964	0.576	0.000	
|	Si	28	22921	0.727	0.000	
⌞>	Y	89	168378	1.882	0.000	
	Y-IS	89	168378	1.882	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.241	**-1.741**	0.48	27.6	ug/L
|	Na	23	0.024	**-0.016**	0.01	61.4	ug/L
|	Si	28	0.136	**-0.165**	0.21	126.3	ug/L
⌞>	Y	89	168378.041				ug/L
	Y-IS	89	168378.041	**100.509**	1.89	1.9	%R

C10054

Quantitative Analysis - Summary Report

Sample ID: 288097 df50

Sample Date/Time: Monday, December 11, 2006 17:11:28
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\288097 df50.1099
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
⌜	K	39	48432	0.315	0.000	
|	Na	23	357039	1.893	0.000	
|	Si	28	202788	18.786	0.000	
⌞>	Y	89	175301	1.470	0.000	
	Y-IS	89	175301	1.470	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.276	**2.690**	0.51	19.1	ug/L
|	Na	23	2.037	**57.881**	0.32	0.6	ug/L
|	Si	28	1.159	**60.598**	13.78	22.7	ug/L
⌞>	Y	89	175301.498				ug/L
	Y-IS	89	175301.498	**104.642**	1.54	1.5	%R

Quantitative Analysis - Summary Report

010055

Sample ID: 288098 df50

Sample Date/Time: Monday, December 11, 2006 17:13:54
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\288098 df50.1100
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
⌜	K	39	46196	0.446	0.000	
|	Na	23	273767	1.260	0.000	
|	Si	28	192592	1.862	0.000	
⌞>	Y	89	176054	1.004	0.000	
	Y-IS	89	176054	1.004	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.262	**0.946**	0.33	35.0	ug/L
|	Na	23	1.555	**44.030**	0.37	0.8	ug/L
|	Si	28	1.094	**56.728**	0.56	1.0	ug/L
⌞>	Y	89	176053.582				ug/L
	Y-IS	89	176053.582	**105.091**	1.06	1.0	%R

010056

Quantitative Analysis - Summary Report

Sample ID: 285641s df50

Sample Date/Time: Monday, December 11, 2006 17:16:20
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\285641s df50.1101
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Calibration File:
Calibration Type: External Calibration

Spiked 5mes of sample @ df50 w/ 400µL of 250ppb Na, Si, K.
N=20ppb
Odueña
12/11/06

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	K	39	90355	0.896	0.000	
|	Na	23	453912	2.885	0.000	
|	Si	28	263434	1.380	0.000	
⌞>	Y	89	168779	1.031	0.000	
	Y-IS	89	168779	1.031	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.535	**35.187**	0.94	2.7	ug/L
|	Na	23	2.690	**76.660**	2.36	3.1	ug/L
|	Si	28	1.561	**84.472**	1.43	1.7	ug/L
⌞>	Y	89	168778.902				ug/L
	Y-IS	89	168778.902	**100.748**	1.04	1.0	%R

Quantitative Analysis - Summary Report

010057

Sample ID: ccv

Sample Date/Time: Monday, December 11, 2006 17:18:45
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\ccv.1102
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
⌈	K	39	66064	0.466	0.000	
|	Na	23	127631	0.130	0.000	
|	Si	28	79823	1.268	0.000	
⌊>	Y	89	166717	0.800	0.000	
	Y-IS	89	166717	0.800	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.396	**17.739**	0.63	3.5	ug/L
|	Na	23	0.766	**21.325**	0.15	0.7	ug/L
|	Si	28	0.479	**20.189**	0.20	1.0	ug/L
⌊>	Y	89	166716.535				ug/L
	Y-IS	89	166716.535	**99.517**	0.80	0.8	%R

Quantitative Analysis - Summary Report

010058

Sample ID: ccb

Sample Date/Time: Monday, December 11, 2006 17:21:09
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

End of Run
Oduna
12/11/06

Sample File: C:\Elandata\Sample\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_Na_Si.mth
Dataset File: c:\elandata\Dataset\06Dec\ccb.1103
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
⌜	K	39	40291	1.027	0.000	
|	Na	23	4027	5.550	0.000	
|	Si	28	22420	1.635	0.000	
⌞>	Y	89	165926	0.797	0.000	
	Y-IS	89	165926	0.797	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.243	**-1.509**	0.47	31.3	ug/L
|	Na	23	0.024	**0.004**	0.03	798.8	ug/L
|	Si	28	0.135	**-0.227**	0.17	76.3	ug/L
⌞>	Y	89	165926.415				ug/L
	Y-IS	89	165926.415	**99.045**	0.79	0.8	%R

Div 20
TO# 060831-10, 060919-6, 061002-7, 061013-8
Proj.# 06002.01.322

610059

Sample ID	Element	Result	Qual (C)	Qual (Q)	Units	RL	%RPD	%Recovery	TV
pbw-m13c1	K_39	0.00500	U		mg/l	0.005			
lcsw-m13c1	K_39	0.0184			mg/l	0.005		92.0%	0.02
285651	K_39	0.634			mg/l	0.125			
285651d	K_39	0.668			mg/l	0.125	5.2%		
285651s	K_39	1.02			mg/l	0.125		77.2%	0.5
285652	K_39	0.606			mg/l	0.125			
286222	K_39	0.114			mg/l	0.025			
286223	K_39	0.574			mg/l	0.05			
287406	K_39	0.137			mg/l	0.025			
287407	K_39	0.147			mg/l	0.025			
288097	K_39	0.165			mg/l	0.025			
288098	K_39	0.192			mg/l	0.025			

rl	mg/l	sigwt	Dilution	Calc RL	ug/l	Date	Time
5	0.000145	0.000145	1	0.005	0.14504	12/13/06	10:55 AM
5	0.018431	0.0184	1	0.005	18.43098	12/13/06	10:58 AM
5	0.6339703	0.634	25	0.125	25.35881	12/13/06	11:03 AM
5	0.66841	0.668	25	0.125	26.7364	12/13/06	11:05 AM
5	1.0206768	1.02	25	0.125	40.82707	12/13/06	11:08 AM
5	0.6061478	0.606	25	0.125	24.24591	12/13/06	11:10 AM
5	0.1139244	0.114	5	0.025	22.78487	12/13/06	11:12 AM
5	0.5735099	0.574	10	0.05	57.35099	12/13/06	11:15 AM
5	0.1374057	0.137	5	0.025	27.48114	12/13/06	11:17 AM
5	0.1473002	0.147	5	0.025	29.46003	12/13/06	11:19 AM
5	0.1653407	0.165	5	0.025	33.06814	12/13/06	11:26 AM
5	0.1921762	0.192	5	0.025	38.43523	12/13/06	11:29 AM

285651: $\frac{25.35881 \text{ ug/L} * df25}{1000} = 0.634 \text{ mg/L}$

12/13/06

010060

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

☑ 6020 TAP No. 01-0406-046 Rev10/Jan 06 mod.

☐ Other _____

ICP-MS CALIB. STD. ID's

S0 MS07-008-01
STD. 1 -068-02
STD. 2 _____
STD. 3 _____

ANALYSIS

K

QC STD. ID's

ICV/CCV MS07-058-02
CRI _____
ICSA _____
ICSAB _____

PROJ. NO.	PROJECT	TO#	DATE	MATRIX	LOGBK PG
060002.01.322	DIV 20	060831-10	12/13/06	liq	N/A
		060919-6			
		061002-7			
		061013-8			

INSTRUMENT: DRC II FILENAME: 083110a.rep

Analyst: Oduna 12/13/06

Quantitative Analysis - Summary Report

Sample ID: S-0

Sample Date/Time: Wednesday, December 13, 2006 10:46:22
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

Odena
12/13/06

Sample File: c:\elandata\Sample\ch2m_060824-13.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\S-0.1291
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
⌜	K	39	44035	0.575	0.000	
⌞>	Y	89	159684	1.376	0.000	
	Y-IS	89	159684	1.376	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.276				ug/L
⌞>	Y	89	159683.948				ug/L
	Y-IS	89	159683.948	**100.000**	1.38	1.4	%R

12/13/06

Quantitative Analysis - Summary Report

010062

Sample ID: S-50

Sample Date/Time: Wednesday, December 13, 2006 10:48:39
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\ch2m_060824-13.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\S-50.1292
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
⌜	K	39	99865	0.783	0.000	
⌞>	Y	89	156259	1.543	0.000	
	Y-IS	89	156259	1.543	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.639	**50.000**	0.94	1.9	ug/L
⌞>	Y	89	156259.077				ug/L
	Y-IS	89	156259.077	**97.855**	1.51	1.5	%R

Quantitative Analysis - Summary Report

010063

Sample ID: icv

Sample Date/Time: Wednesday, December 13, 2006 10:51:02
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

TV = 20ppb
Aduña
12/13/06

Sample File: c:\elandata\Sample\ch2m_060824-13.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\icv.1293
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
⌜	K	39	65506	0.662	0.000	
⌞>	Y	89	156388	1.181	0.000	
	Y-IS	89	156388	1.181	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.419	**19.696**	1.05	5.3	ug/L
⌞>	Y	89	156387.751				ug/L
	Y-IS	89	156387.751	**97.936**	1.16	1.2	%R

Quantitative Analysis - Summary Report

Sample ID: icb

Sample Date/Time: Wednesday, December 13, 2006 10:53:24
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\ch2m_060824-13.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\icb.1294
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
⌜	K	39	42748	0.960	0.000	
⌞>	Y	89	161209	2.800	0.000	
	Y-IS	89	161209	2.800	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.265	**-1.443**	1.02	70.4	ug/L
⌞>	Y	89	161209.293				ug/L
	Y-IS	89	161209.293	**100.955**	2.83	2.8	%R

Quantitative Analysis - Summary Report

010065

Sample ID: pbw-m13c1

Sample Date/Time: Wednesday, December 13, 2006 10:55:49
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

pbw prep'd in 1.1. HNO_3 #

Ordeña 12/13/06

Sample File: C:\Elandata\Sample\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\pbw-m13c1.1295
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
⌜	K	39	44051	0.717	0.000	
⌞>	Y	89	159121	0.821	0.000	
	Y-IS	89	159121	0.821	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.277	**0.145**	0.13	87.7	ug/L
⌞>	Y	89	159120.643				ug/L
	Y-IS	89	159120.643	**99.647**	0.82	0.8	%R

010066

Quantitative Analysis - Summary Report

Sample ID: lcsw-m13c1

Sample Date/Time: Wednesday, December 13, 2006 10:58:08
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\lcsw-m13c1.1296
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Calibration File:
Calibration Type: External Calibration

Added 400µL of 250ppb K to 4.6 mL of 1% HNO_3 #
TV = 20ppb
Oduña
12/13/06

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	K	39	65910	0.212	0.000	
⌞>	Y	89	160876	1.073	0.000	
	Y-IS	89	160876	1.073	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.410	**18.431**	0.71	3.8	ug/L
⌞>	Y	89	160876.170				ug/L
	Y-IS	89	160876.170	**100.747**	1.08	1.1	%R

Quantitative Analysis - Summary Report

Sample ID: 285651 df25

Sample Date/Time: Wednesday, December 13, 2006 11:03:38
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\285651 df25.1297
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
⌜	K	39	74239	0.657	0.000	
⌞>	Y	89	161363	0.180	0.000	
	Y-IS	89	161363	0.180	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.460	**25.359**	0.46	1.8	ug/L
⌞>	Y	89	161362.543				ug/L
	Y-IS	89	161362.543	**101.051**	0.18	0.2	%R

Quantitative Analysis - Summary Report

Sample ID: 285651d df25

Sample Date/Time: Wednesday, December 13, 2006 11:05:56
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\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\285651d df25.1298
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
⌜	K	39	74917	0.451	0.000	
⌞>	Y	89	159369	0.303	0.000	
	Y-IS	89	159369	0.303	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.470	**26.736**	0.49	1.8	ug/L
⌞>	Y	89	159369.021				ug/L
	Y-IS	89	159369.021	**99.803**	0.30	0.3	%R

010069

Quantitative Analysis - Summary Report

Sample ID: 285641s df25

Sample Date/Time: Wednesday, December 13, 2006 11:08:14
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\285641s df25.1299
Tuning File: c:\elandata\Tuning\default.tun
Optimization File: c:\elandata\Optimize\default.dac
Calibration File:
Calibration Type: External Calibration

Spiked 5mls of sample @ df25 w/ 400µL of 250ppb K. TV= 20 ppb
Ordway
12/13/06

Summary

Intensities

	Analyte	Mass	Meas. Intens. Mean	Meas. Intens. RSD	Blank Intensity	Blank Intens. RSD
⌜	K	39	95491	1.247	0.000	
⌞>	Y	89	166828	2.348	0.000	
	Y-IS	89	166828	2.348	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.572	**40.827**	0.96	2.4	ug/L
⌞>	Y	89	166828.475				ug/L
	Y-IS	89	166828.475	**104.474**	2.45	2.3	%R

Quantitative Analysis - Summary Report

Sample ID: 285652 df25

Sample Date/Time: Wednesday, December 13, 2006 11:10:32
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\div20_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\285652 df25.1300
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
⌜	K	39	72812	0.920	0.000	
⌞>	Y	89	161127	2.187	0.000	
	Y-IS	89	161127	2.187	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.452	**24.246**	1.03	4.3	ug/L
⌞>	Y	89	161126.854				ug/L
	Y-IS	89	161126.854	**100.904**	2.21	2.2	%R

Quantitative Analysis - Summary Report

Sample ID: 286222 df5

Sample Date/Time: Wednesday, December 13, 2006 11:12:50
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\286222 df5.1301
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
⌜	K	39	69854	0.940	0.000	
⌞>	Y	89	158287	1.307	0.000	
	Y-IS	89	158287	1.307	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.441	**22.785**	1.08	4.8	ug/L
⌞>	Y	89	158286.849				ug/L
	Y-IS	89	158286.849	**99.125**	1.30	1.3	%R

Quantitative Analysis - Summary Report

010072

Sample ID: 286223 df10

Sample Date/Time: Wednesday, December 13, 2006 11:15:09
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\286223 df10.1302
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
⌈	K	39	110261	1.092	0.000	
⌊>	Y	89	159284	2.398	0.000	
	Y-IS	89	159284	2.398	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.693	**57.351**	3.12	5.4	ug/L
⌊>	Y	89	159283.741				ug/L
	Y-IS	89	159283.741	**99.749**	2.39	2.4	%R

Quantitative Analysis - Summary Report

Sample ID: 287406 df5

Sample Date/Time: Wednesday, December 13, 2006 11:17:27
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\287406 df5.1303
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
⌈	K	39	74543	0.453	0.000	
⌊>	Y	89	156794	1.433	0.000	
	Y-IS	89	156794	1.433	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.476	**27.481**	1.22	4.5	ug/L
⌊>	Y	89	156794.208				ug/L
	Y-IS	89	156794.208	**98.190**	1.41	1.4	%R

Quantitative Analysis - Summary Report

010074

Sample ID: 287407 df5

Sample Date/Time: Wednesday, December 13, 2006 11:19:46
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\287407 df5.1304
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
⌜	K	39	76216	0.640	0.000	
⌞>	Y	89	155583	0.940	0.000	
	Y-IS	89	155583	0.940	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.490	**29.460**	0.36	1.2	ug/L
⌞>	Y	89	155582.670				ug/L
	Y-IS	89	155582.670	**97.432**	0.92	0.9	%R

Quantitative Analysis - Summary Report

Sample ID: ccv

Sample Date/Time: Wednesday, December 13, 2006 11:22:05
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\ccv.1305
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
⌜	K	39	65430	0.670	0.000	
⌞>	Y	89	157421	1.739	0.000	
	Y-IS	89	157421	1.739	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.416	**19.255**	1.06	5.5	ug/L
⌞>	Y	89	157421.102				ug/L
	Y-IS	89	157421.102	**98.583**	1.71	1.7	%R

Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, December 13, 2006 11:24:23
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\ccb.1306
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
⌜	K	39	43267	0.527	0.000	
⌞>	Y	89	157042	1.551	0.000	
	Y-IS	89	157042	1.551	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.276	**-0.033**	0.40	1196.1	ug/L
⌞>	Y	89	157042.264				ug/L
	Y-IS	89	157042.264	**98.346**	1.53	1.6	%R

Quantitative Analysis - Summary Report

Sample ID: 288097 df5

010077

Sample Date/Time: Wednesday, December 13, 2006 11:26:41
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\288097 df5.1307
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
⌜	K	39	80452	0.472	0.000	
⌞>	Y	89	155901	1.190	0.000	
	Y-IS	89	155901	1.190	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.516	**33.068**	1.10	3.3	ug/L
⌞>	Y	89	155901.480				ug/L
	Y-IS	89	155901.480	**97.631**	1.16	1.2	%R

Quantitative Analysis - Summary Report

010078

Sample ID: 288098 df5

Sample Date/Time: Wednesday, December 13, 2006 11:29:01
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\288098 df5.1308
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
⌜	K	39	85949	1.857	0.000	
⌞>	Y	89	154836	1.097	0.000	
	Y-IS	89	154836	1.097	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.555	**38.435**	1.39	3.6	ug/L
⌞>	Y	89	154836.310				ug/L
	Y-IS	89	154836.310	**96.964**	1.06	1.1	%R

Quantitative Analysis - Summary Report

010079

Sample ID: ccv

Sample Date/Time: Wednesday, December 13, 2006 11:31:20
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\ccv.1309
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
⌜	K	39	65664	0.853	0.000	
⌞>	Y	89	157134	0.970	0.000	
	Y-IS	89	157134	0.970	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌜	K	39	0.418	**19.553**	0.07	0.4	ug/L
⌞>	Y	89	157133.846				ug/L
	Y-IS	89	157133.846	**98.403**	0.95	1.0	%R

610080

Quantitative Analysis - Summary Report

Sample ID: ccb

Sample Date/Time: Wednesday, December 13, 2006 11:33:37
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_060831-10.sam
Method File: C:\Elandata\Method\SwRI\K_only.mth
Dataset File: c:\elandata\Dataset\06Dec\ccb.1310
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
⌈	K	39	44199	0.861	0.000	
⌊>	Y	89	153073	3.331	0.000	
	Y-IS	89	153073	3.331	0.000	

Concentration Results

	Analyte	Mass	Net Intens. Mean	**Conc. Mean**	Conc. SD	Conc. RSD	Sample Unit
⌈	K	39	0.289	**1.806**	1.03	56.9	ug/L
⌊>	Y	89	153073.327				ug/L
	Y-IS	89	153073.327	**95.860**	3.19	3.3	%R