

0100661

**FINAL REPORT FOR THE SAMPLES RECEIVED IN
SEPTEMBER, 2011, FOR SAF F11-056**

**Document No.: 20111492 Rev. 0
SDG: 222S20111492**

Julie A. Osborn
Advanced Technologies and Laboratories International, Inc.

Date Published
September 29, 2011

Prepared for:

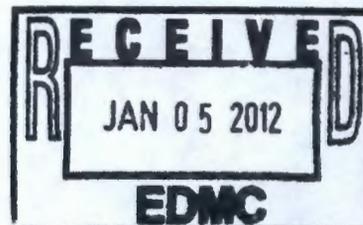
Prepared by:



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Julie Osborn September 29, 2011
J.A. Osborn, Project Manager



222-S LABORATORY**FINAL REPORT FOR THE SAMPLES RECEIVED IN SEPTEMBER, 2011,
FOR SAF F11-056****1.0 INTRODUCTION**

This final report presents the results for the four water samples taken on September 13, 2011. The samples were analyzed in accordance with Sampling Authorization Form (SAF) F11-056 and ATL-MP-1011; *ATL Quality Assurance Project Plan for 222-S Laboratory (QAPP)*. The following attachments are included in this report.

- Attachment 1 Data Summary Report
- Attachment 2 Holding Time Report
- Attachment 3 Receipt Paperwork

2.0 SAMPLE RECEIPT AND HANDLING

The samples were received on September 20, 2011, in good condition and with adequate paperwork.

3.0 ANALYTICAL RESULTS SUMMARY

The Data Summary Report (Attachment 1) present the final analytical results for those analytes requested in the SAF. The "Det Limit" column in Attachment 1 contains the method detection limit (MDL) for non-radionuclide analyses.

In Attachment 1, the column labeled "A#" indicates the aliquot class or the method used for sample preparation before analysis. For analysis without a preparation step, this column is left blank.

Manual calculations using rounded results from the Data Summary Report or result calculation forms may differ slightly from the actual results derived from the raw data.

4.0 PH

Analysis for pH was performed on aliquots of the water samples. The LCS met the criterion listed in ATL-MP-1011. The RPD was within 20%.

5.0 PROCEDURES

Table 1 lists the analytical procedure used for analysis of this sample.

Table 1. Analytical Procedures.

Analysis	Preparation Method	Analysis Procedure
pH Determination Of Aqueous Samples		LA-212-106 Rev. I-0 SW-846 9040C

6.0 REFERENCES

ATL-MP-1011, 2011, *ATL Quality Assurance Project Plan for 222-S Laboratory*, Rev. 10-A, Applied Technologies and Laboratories International, Inc., Richland, Washington.

Sampling Authorization Form F11-056; September 2011– F11-056, 2011, CH2M Hill, Plateau Remediation Company, Richland, Washington.

SW-846, 1986, *Test Methods for Evaluating Solid Waste: Physical/Chemical Methods*, Third Edition, as amended, U.S. Environmental Protection Agency, Washington, D.C.

Attachment 1

DATA SUMMARY REPORT

**WSCF Diversion 2011-09
Data Summary Report**

Sample Group: 20111492

Customer Group or SDG Number: 222DS20111492

Customer Sample ID: B28368

Customer Sample ID: B28368

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11M000501			PH	pH	unitless	n/a	n/a	5.52	n/a	n/a	n/a	n/a	0.0100	n/a	

NA = Not Analyzed, ND = Not Detected

**WSCF Diversion 2011-09
Data Summary Report**

Sample Group: 20111492

Customer Group or SDG Number: 222DS20111492

Customer Sample ID: B2H366-A

Customer Sample ID: B2H366-A

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11M000503			PH	pH	unitless	n/a	n/a	6.07	n/a	n/a	n/a	n/a	0.0100	n/a	

NA = Not Analyzed, ND = Not Detected

**WSCF Diversion 2011-09
Data Summary Report**

Sample Group: 20111492

Customer Group or SDG Number: 222DS20111492

Customer Sample ID: B2H367

Customer Sample ID: B2H367

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11M000502			PH	pH	unitless	n/a	n/a	6.07	n/a	n/a	n/a	n/a	0.0100	n/a	

NA = Not Analyzed, ND = Not Detected

WSCF Diversion 2011-09
Data Summary Report

Sample Group: 20111492

Customer Group or SDG Number: 222DS20111492

Customer Sample ID: B2H369

Customer Sample ID: B2H369

Sample#	R	A#	CAS #	Analyte	Unit	STD %	Blank	Result	Duplicate	Average	RPD %	Spk Rec %	Det Limit	Cnt Err %	Qual Flags
S11M000500			PH	pH	unitless	n/a	n/a	5.52	5.65	5.58	2.33	n/a	0.0100	n/a	

NA = Not Analyzed, ND = Not Detected

Attachment 2

HOLDING TIME REPORT

Holding Time	Sample Group	Sample	Matrix	Method	Sample Date	Received Date	Prep Date	Analysis Date
09/14/11 08:15	20111492	S11M000503	LIQUID	PH LIQUID	09/13/11 08:15	09/20/11 15:00	N/A	09/21/11 11:00
09/14/11 08:17	20111492	S11M000502	LIQUID	PH LIQUID	09/13/11 08:17	09/20/11 15:00	N/A	09/21/11 11:00
09/14/11 08:20	20111492	S11M000501	LIQUID	PH LIQUID	09/13/11 08:20	09/20/11 15:00	N/A	09/21/11 11:00
09/14/11 08:25	20111492	S11M000500	LIQUID	PH LIQUID	09/13/11 08:25	09/20/11 15:00	N/A	09/21/11 11:00

09/28/2011 08:03

holdtimereport 2.7.29

MissedHoldTimexls v 2.7.29

Attachment 3

RECEIPT PAPERWORK

ATL	SAMPLE RECEIPT AND CHAIN OF CUSTODY VERIFICATION CHECKLIST	LO-090-101 Rev <u>EE.0</u>
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Date Samples Received: _____ Group #: 20111491 3 CN
 Number of Samples: 15 20111492 4 PH
 Sample Custodian: elbert 20111493 8 CN

Sample Custodian to Complete:

Action	Yes	No	N/A	Comments
RSA/COC provided?	✓			
RSR provided?			✓	
Verify GKI is complete			✓	<input type="checkbox"/> In Project File
Check that outer custody seal is intact, if present			✓	
Record cooler temperature in centigrade, as appropriate	<u>12</u>			<input type="checkbox"/> Check if no cooler and/or no ice
Samples are intact and in good condition	✓			If No, provide comments on back
Verify that COC or RSA is accurate and complete, containing the following information:				
• Client name and client sample number	✓			
• Date and time of sampling	✓			
• Sampling location or origin	✓			
• Container type, size, and number	✓			
• Preservatives (if used) are noted on the COC/RSA and sample bottle	✓			
• Analysis request is clear	✓			
• Signature of persons relinquishing and receiving samples	✓			
• Date and/or time of sample custody exchange	✓			
Verify that sample numbers on containers match the COC and/or RSA.	✓			
Samples stored properly (e.g., refrigeration)	✓			

Notify the PM immediately if any problems are noted. (Any "No" checked requires Project Manager resolution.)

PM to Complete:

Samples acceptable for release? yes PM Initials RL Date 9.20.11
 If No, comment on communication and resolution: Per G.P.R

Other Comments:

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

COLLECTOR **KC Patterson**
CHPRC

COMPANY CONTACT
EVANS, RT

TELEPHONE NO.
373-7924

PROJECT COORDINATOR
EVANS, RT

PRICE CODE **C01**

DATA
TURNAROUND

SAMPLING LOCATION
Resin Vessel Valve #V-W328B; SET 2

PROJECT DESIGNATION
100-KW Pump & Treat - SIR-700 Resin - Water

SAF NO.
F11-056

AIR QUALITY

12 Days / 12
Days

ICE CHEST NO.

FIELD LOGBOOK NO.
HNF-N-507- *21*

ACTUAL SAMPLE DEPTH
N/A

COA
300087ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ORIGINAL

SHIPPED TO *mms 9-21-11*
~~Waste Sampling & Characterization~~ *222S*

OFFSITE PROPERTY NO.
N/A

BILL OF LADING/AIR BILL NO.
N/A

MATRIX*
= Air
DL= Drum
Liquids
OS= Drum
Solids
= Liquid
O= Oil
S= Soil
SE= Sediment
T= Tissue
V= Vegetation
W= Water
WT= Wipe
X= Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

PRESERVATION

HOLDING TIME

TYPE OF CONTAINER

NO. OF CONTAINER(S)

VOLUME

SAMPLE ANALYSIS

HNO3 to pH <2	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	HNO3 to pH <2	HCl to pH <2	None
6 Months	24 Hours	48 Hours	14 Days	7 Days	ASAP	6 Months	6 Months	6 Months
G/P	aG	P	G/P	G/P	G/P	G/P	G/P	G
1	1	1	1	1	1	1	1	1
500mL	120mL	60mL	250mL	500mL	60mL	1L	1L	250mL
SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	TDS (Total dissolved solids);	pH - SM4500 (Water) (pH Measurement);	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - Ion Ex;

SAMPLE NO. MATRIX*

B2H369 *4* WATER

SAMPLE DATE SAMPLE TIME
SEP 13 2011 *0825*

<input checked="" type="checkbox"/>								
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GRP# 20111492
SAM# 511M000500

CHAIN OF POSSESSION

SIGN/ PRINT NAMES

SPECIAL INSTRUCTIONS

RELINQUISHED BY/REMOVED FROM *KC Patterson* DATE/TIME *SEP 13 2011 1020*

RELINQUISHED BY/REMOVED FROM *CHPRC* DATE/TIME *9/13/11 1100*

RELINQUISHED BY/REMOVED FROM *Don Brotherton* DATE/TIME *9/20/11 1445*

RELINQUISHED BY/REMOVED FROM *DON BROTHERTON/CHPRC* DATE/TIME *SEP 20 2011 1500*

RELINQUISHED BY/REMOVED FROM

RELINQUISHED BY/REMOVED FROM

RECEIVED BY/STORED IN *J. P. ...* DATE/TIME *SEP 13 2011 1020*

RECEIVED BY/STORED IN *KB 9/13/11* DATE/TIME *9:13-11 1100*

RECEIVED BY/STORED IN *Don Brotherton/CHPRC* DATE/TIME *9/20/11 1445*

RECEIVED BY/STORED IN *KB 9/20/11* DATE/TIME *1445*

RECEIVED BY/STORED IN

RECEIVED BY/STORED IN

** The CACN for all analytical work at WSCF laboratory is 401636ES20. ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.

(1) ICP/MS - 200.8 (TAL) {Chromium}; ICP/MS - 200.8 (Add-on) {Uranium}; ICP Metals - 6010 (TAL) {Calcium, Magnesium, Potassium, Sodium};

(2) IC Anions - 300.0 {Chloride, Nitrogen in Nitrate, Phosphorus in phosphate, Sulfate};

(3) 2320_ALKALINITY {Alkalinity, Bicarbonate, Carbonate alkalinity, Hydroxylion};

LABORATORY SECTION RECEIVED BY
FINAL SAMPLE DISPOSITION DISPOSAL METHOD

TITLE DATE/TIME
DISPOSED BY DATE/TIME

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

COLLECTOR
KC Patterson
CHPRC
SAMPLING LOCATION
Resin Vessel Valve #V-W228B; SET 2
ICE CHEST NO.

COMPANY CONTACT
EVANS, RT
PROJECT DESIGNATION
100-KW Pump & Treat - SIR-700 Resin - Water
FIELD LOGBOOK NO.
HNF-N-507-21
ACTUAL SAMPLE DEPTH
N/A
OFFSITE PROPERTY NO.
N/A

PROJECT COORDINATOR
EVANS, RT
PRICE CODE
C01
AIR QUALITY

METHOD OF SHIPMENT
GOVERNMENT VEHICLE
DATA TURNAROUND
12 Days / 12 Days
ORIGINAL

SHIPPED TO
Waste Sampling & Characterization
Waste Sampling & Characterization
POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)
SPECIAL HANDLING AND/OR STORAGE

Table with columns: PRESERVATION, HOLDING TIME, TYPE OF CONTAINER, NO. OF CONTAINER(S), VOLUME, SAMPLE ANALYSIS. Includes handwritten notes like '2225' and '10/20/11'.

SAMPLE NO. 32H368 -A 3
MATRIX* WATER
CRP# 2011492
SAM# S11M000501

Table with columns: SAMPLE DATE, SAMPLE TIME, and a grid of checkmarks for analysis results.

CHAIN OF POSSESSION table with columns: RELINQUISHED BY/REMOVED FROM, DATE/TIME, RECEIVED BY/STORED IN. Includes signatures and dates like 'SEP 13 2011'.

SPECIAL INSTRUCTIONS
** The ACN for all analytical work at WSCF laboratory is 401636ES20. □□** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Chromium}; ICP/MS - 200.8 (Add-on) {Uranium}; ICP Metals - 6010 (TAL) {Calcium, Magnesium, Potassium, Sodium};
(2) IC Anions - 300.0 {Chloride, Nitrogen in Nitrate, Phosphorus in phosphate, Sulfate};
(3) 2320_ALKALINITY {Alkalinity, Bicarbonate, Carbonate alkalinity, Hydroxylion};

LABORATORY SECTION RECEIVED BY
FINAL SAMPLE DISPOSITION DISPOSAL METHOD

TITLE DATE/TIME
DISPOSED BY DATE/TIME

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-056-012 - A

COLLECTOR
**KC Patterson
CHPRC**
AMPLING LOCATION
Resin Vessel Valve #V-W128B; SET 2
ICE CHEST NO.

COMPANY CONTACT
EVANS, RT
PROJECT DESIGNATION
100-KW Pump & Treat - SIR-700 Resin - Water
FIELD LOGBOOK NO.
HNF-N-507-21

TELEPHONE NO.
373-7924

PROJECT COORDINATOR
EVANS, RT
SAF NO.
F11-056

PRICE CODE
C01
AIR QUALITY

DATA
TURNAROUND
12 Days / 12
Days

OFFSITE PROPERTY NO.
N/A
ACTUAL SAMPLE DEPTH
N/A

COA
300087ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ORIGINAL

SHIP TO
9-21-11 mm
Waste Sampling & Characterization *2235*

MATRIX*
=Air
L=Drum
S=Drum
=Liquids
=Solids
=Liquid
=Oil
=Soil
E=Sediment
=Tissue
=Vegetation
V=Water
WI=Wipe
=Other
POSSIBLE SAMPLE HAZARDS/ REMARKS
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

PRESERVATION

HOLDING TIME

TYPE OF CONTAINER

NO. OF CONTAINER(S)

VOLUME

SAMPLE ANALYSIS

NO3 to pH <2	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	NO3 to pH <2	HCl to pH <2	None
6 Months	24 Hours	48 Hours	14 Days	7 Days	ASAP	6 Months	6 Months	6 Months
G/P	aG	<i>P</i> <i>AND/11</i> <i>KB</i>	G/P	G/P	G/P	G/P	G/P	G
1	1	1	1	1	1	1	2 <i>KB</i>	1 <i>AND/11</i>
500mL	120mL	60mL	250mL	500mL	60mL	1L	1L	250mL
SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	TDS (Total dissolved solids);	pH - 5M4500 (Water) (pH Measurement);	Strontium-89,90 -- Total Sr;	Technetium-99;	Tritium - Ion Ex;

SPECIAL HANDLING AND/OR STORAGE

SAMPLE NO. *9/13/11*
B2H367 - A *2* MATRIX* WATER

SAMPLE DATE SAMPLE TIME
SEP 13 2011 *0815*

<input checked="" type="checkbox"/>								
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CRP# 20111492
SAM# S11M000502

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM
KC Patterson
CHPRC

DATE/TIME
SEP 13 2011

SIGN/ PRINT NAMES

RECEIVED BY/STORED IN
JAPAZIO

DATE/TIME
SEP 13 2011

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401636ES20. ** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Chromium}; ICP/MS - 200.8 (Add-on) {Uranium}; ICP Metals - 6010 (TAL) {Calcium, Magnesium, Potassium, Sodium};
(2) IC Anions - 300.0 {Chloride, Nitrogen in Nitrate, Phosphorus in phosphate, Sulfate};
(3) 2320_ALKALINITY {Alkalinity, Bicarbonate, Carbonate alkalinity, Hydroxylion};

RELINQUISHED BY/REMOVED FROM
Don Brotherton

DATE/TIME
9/20/11 1415

RECEIVED BY/STORED IN
DON BROTHERTON / CHPRC

DATE/TIME
9/20/11 1415

RELINQUISHED BY/REMOVED FROM
DON BROTHERTON / CHPRC

DATE/TIME
SEP 20 2011 1500

RECEIVED BY/STORED IN
ATL

DATE/TIME
SEP 20 2011 1500

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

RELINQUISHED BY/REMOVED FROM

DATE/TIME

RECEIVED BY/STORED IN

DATE/TIME

LABORATORY SECTION

RECEIVED BY

TITLE

DATE/TIME

FINAL SAMPLE DISPOSITION

DISPOSAL METHOD

DISPOSED BY

DATE/TIME

CH2M Hill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

F11-056-011 - A

PAGE 1 OF 1

COLLECTOR
KC Patterson
CHPRC
SAMPLING LOCATION
Effluent Tank valve #V-WJ13; SET 2
ICE CHEST NO.

COMPANY CONTACT
EVANS, RT
PROJECT DESIGNATION
100-KW Pump & Treat - SIR-700 Resin - Water
FIELD LOGBOOK NO.
HNF-N-507- 21

TELEPHONE NO.
373-7924

PROJECT COORDINATOR
EVANS, RT
SAF NO.
F11-056

PRICE CODE
C01
AIR QUALITY

DATA
TURNAROUND
12 Days / 12
Days

SHIPPED TO
9-21-11 mm
Waste Sampling & Characterization

OFFSITE PROPERTY NO.
N/A

COA
300087ES10

METHOD OF SHIPMENT
GOVERNMENT VEHICLE

ORIGINAL

Possible Sample Hazards/ Remarks
Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 5400.5 (1990/1993)

PRESERVATION

HOLDING TIME

TYPE OF CONTAINER

NO. OF CONTAINER(S)

VOLUME

SAMPLE ANALYSIS

NO3 to pH <2	Cool~4C	Cool~4C	Cool~4C	Cool~4C	Cool~4C	None	NO3 to pH <2	HCl to pH <2	None
6 Months	24 Hours	48 Hours	14 Days	7 Days	ASAP	6 Months	6 Months	6 Months	6 Months
G/P	aG	P	G/P	G/P	G/P	G/P	G/P	G/P	G
1	1	1	1	1	1	1	1	1	1
500mL	120mL	60mL	250mL	500mL	60mL	1L	1L	250mL	
SEE ITEM (1) IN SPECIAL INSTRUCTIONS	Chromium Hex - 7196;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	TDS (Total dissolved solids);	pH - SM4500 (Water) (pH Measurement);	Strontium-89,90 - Total Sr;	Technetium 99;	Tritium - Ion Ex;	

113161

SPECIAL HANDLING AND/OR STORAGE

SAMPLE ID: B2H366 - A
MATRIX*: WATER

SAMPLE DATE: SEP 13 2011
SAMPLE TIME: 0815

GRP# 20111492
SAM# S11M000503

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM
KC Patterson
CHPRC
RELINQUISHED BY/REMOVED FROM
KC Patterson
RELINQUISHED BY/REMOVED FROM
Don Brotherton
RELINQUISHED BY/REMOVED FROM
DON BROTHERTON / CHPRC
RELINQUISHED BY/REMOVED FROM
RELINQUISHED BY/REMOVED FROM
RELINQUISHED BY/REMOVED FROM

DATE/TIME
SEP 13 2011 10:00
DATE/TIME
9/13/11 11:00
DATE/TIME
9/20/11 14:25
DATE/TIME
SEP 20 2011 15:00
DATE/TIME
DATE/TIME
DATE/TIME

SIGN/ PRINT NAMES

RECEIVED BY/STORED IN
RECEIVED BY/STORED IN
RECEIVED BY/STORED IN
DON BROTHERTON / CHPRC
RECEIVED BY/STORED IN
RECEIVED BY/STORED IN
RECEIVED BY/STORED IN
RECEIVED BY/STORED IN

DATE/TIME
SEP 13 2011 10:00
DATE/TIME
9/13/11 11:00
DATE/TIME
9/20/11 14:25
DATE/TIME
SEP 20 2011 15:00
DATE/TIME
DATE/TIME
DATE/TIME

SPECIAL INSTRUCTIONS

** The CACN for all analytical work at WSCF laboratory is 401636ES20.00** The 100 Area S&GRP Characterization and Monitoring Sampling and Analysis GKI applies to this SAF.
(1) ICP/MS - 200.8 (TAL) {Chromium}; ICP/MS - 200.8 (Add-on) {Uranium}; ICP Metals - 6010 (TAL) {Calcium, Magnesium, Potassium, Sodium};
(2) IC Anions - 300.0 {Chloride, Nitrogen in Nitrate, Phosphorus in phosphate, Sulfate};
(3) 2320_ALKALINITY {Alkalinity, Bicarbonate, Carbonate alkalinity, Hydroxylion};

LABORATORY SECTION RECEIVED BY

FINAL SAMPLE DISPOSITION DISPOSAL METHOD

TITLE DATE/TIME
DISPOSED BY DATE/TIME