

**SOUTHWEST RESEARCH INSTITUTE  
NUCLEAR PROJECT**

**CLIENT: Div. 20**

**TASK ORDER: 031106-12**

**SRR: 25200**

**SDG: 237578**

**CASE: CNWRA**

**VTSR: November 06, 2003**

**PROJECT#: 06002.01.141**

**FINAL REPORT**

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

Sample ID

16P-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237578

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.620	0.05
Antimony	<0.01	0.01
Arsenic	0.014	0.005
Barium	0.022	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.204	0.025
Cadmium	<0.005	0.005
Calcium	2.17	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	1.14	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.081	0.005
Magnesium	0.388	0.05
Manganese	0.024	0.005
Molybdenum	0.063	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.043	0.04
Potassium	1.92	0.2
Selenium	<0.015	0.015
Silicon	21.1	0.05
Silver	<0.005	0.005
Sodium	110	0.2
Strontium	0.028	0.005
Sulfur	20.2	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.015	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **DUPLICATE SUMMARY**

Sample ID

16P-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237578

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Aluminum	0.620	0.659	6.19%
Antimony	<0.01	<0.01	0.00%
Arsenic	0.014	0.008	54.9%
Barium	0.022	0.020	10.3%
Beryllium	<0.005	<0.005	0.00%
Bismuth	<0.015	<0.015	0.00%
Boron	0.204	0.206	0.95%
Cadmium	<0.005	<0.005	0.00%
Calcium	2.17	2.18	0.63%
Chromium	<0.005	<0.005	0.00%
Cobalt	<0.005	<0.005	0.00%
Copper	<0.005	<0.005	0.00%
Iron	1.14	1.23	7.02%
Lanthanum	<0.005	0.005	200%
Lead	<0.005	<0.005	0.00%
Lithium	0.081	0.081	0.43%
Magnesium	0.388	0.373	3.89%
Manganese	0.024	0.025	0.12%
Molybdenum	0.063	0.064	2.48%
Nickel	<0.005	<0.005	0.00%
Palladium	<0.01	<0.01	0.00%
Phosphorus	0.043	0.040	6.90%
Potassium	-----	-----	-----
Selenium	<0.015	<0.015	0.00%
Silicon	21.1	21.4	1.55%
Silver	<0.005	<0.005	0.00%
Sodium	-----	-----	-----
Strontium	0.028	0.028	0.40%
Sulfur	20.2	19.6	2.61%
Thallium	<0.025	<0.025	0.00%
Thorium	<0.01	<0.01	0.00%
Tin	<0.01	<0.01	0.00%
Titanium	<0.005	<0.005	0.00%
Tungsten	<0.015	<0.015	0.00%
Uranium	<0.1	<0.1	0.00%
Vanadium	<0.005	<0.005	0.00%
Yttrium	<0.005	<0.005	0.00%
Zinc	0.015	0.015	0.34%
Zirconium	<0.005	<0.005	0.00%

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

Sample ID

16P-1003-FUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237579

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.340	0.05
Antimony	<0.01	0.01
Arsenic	0.011	0.005
Barium	0.008	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.210	0.025
Cadmium	<0.005	0.005
Calcium	1.85	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.262	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.082	0.005
Magnesium	0.269	0.05
Manganese	0.014	0.005
Molybdenum	0.066	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	1.79	0.2
Selenium	<0.015	0.015
Silicon	20.7	0.05
Silver	<0.005	0.005
Sodium	105	0.2
Strontium	0.022	0.005
Sulfur	19.8	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.007	0.005
Zirconium	<0.005	0.005

# SOUTHWEST RESEARCH INSTITUTE

## MATRIX SPIKE SUMMARY

Sample ID

16P-1003-FUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237579

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	0.340	2.30	2.00	98.2%
Antimony	<0.01	0.370	0.500	74.0%
Arsenic	0.011	2.12	2.00	105.4%
Barium	0.008	2.05	2.00	102.0%
Beryllium	<0.005	0.053	0.050	105.9%
Bismuth	NA	NA	NA	NA
Boron	NA	NA	NA	NA
Cadmium	<0.005	0.052	0.050	103.5%
Calcium	1.85	22.6	20.0	103.9%
Chromium	<0.005	0.184	0.200	91.8%
Cobalt	<0.005	0.520	0.500	103.9%
Copper	<0.005	0.259	0.250	103.6%
Iron	0.262	1.23	1.00	97.2%
Lanthanum	NA	NA	NA	NA
Lead	<0.005	0.523	0.500	104.5%
Lithium	NA	NA	NA	NA
Magnesium	0.269	21.2	20.0	104.6%
Manganese	0.014	0.523	0.500	102.0%
Molybdenum	NA	NA	NA	NA
Nickel	<0.005	0.509	0.500	101.9%
Palladium	NA	NA	NA	NA
Phosphorus	NA	NA	NA	NA
Potassium	----	----	----	----
Selenium	<0.015	2.32	2.00	116.0%
Silicon	NA	NA	NA	NA
Silver	<0.005	0.042	0.050	84.5%
Sodium	----	----	----	----
Strontium	NA	NA	NA	NA
Sulfur	NA	NA	NA	NA
Thallium	<0.025	2.28	2.00	114.2%
Thorium	NA	NA	NA	NA
Tin	NA	NA	NA	NA
Titanium	NA	NA	NA	NA
Tungsten	NA	NA	NA	NA
Uranium	NA	NA	NA	NA
Vanadium	<0.005	0.514	0.500	102.9%
Yttrium	NA	NA	NA	NA
Zinc	0.007	0.536	0.500	105.8%
Zirconium	NA	NA	NA	NA

NA- Not Applicable.

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

Sample ID

16P-1003-UFUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237580

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.354	0.05
Antimony	<0.01	0.01
Arsenic	0.019	0.005
Barium	0.038	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.273	0.025
Cadmium	<0.005	0.005
Calcium	6.53	0.05
Chromium	<0.005	0.005
Cobalt	0.010	0.005
Copper	0.009	0.005
Iron	1.07	0.05
Lanthanum	<0.005	0.005
Lead	0.005	0.005
Lithium	0.112	0.005
Magnesium	0.901	0.05
Manganese	0.054	0.005
Molybdenum	0.063	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.061	0.04
Potassium	1.98	0.2
Selenium	<0.015	0.015
Silicon	27.1	0.05
Silver	<0.005	0.005
Sodium	117	0.2
Strontium	0.078	0.005
Sulfur	27.7	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	0.011	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.045	0.005
Zirconium	<0.005	0.005

# SOUTHWEST RESEARCH INSTITUTE

## DUPLICATE SUMMARY



Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 237580

Sample ID 16P-1003-UFUA-5
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Client: Division 20

Date Received: 11/06/03

Project No.: 20.06002.01.141

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Duplicate Result (mg/L)	RPD
Aluminum	-----	-----	-----
Antimony	-----	-----	-----
Arsenic	-----	-----	-----
Barium	-----	-----	-----
Beryllium	-----	-----	-----
Bismuth	-----	-----	-----
Boron	-----	-----	-----
Cadmium	-----	-----	-----
Calcium	-----	-----	-----
Chromium	-----	-----	-----
Cobalt	-----	-----	-----
Copper	-----	-----	-----
Iron	-----	-----	-----
Lanthanum	-----	-----	-----
Lead	-----	-----	-----
Lithium	-----	-----	-----
Magnesium	-----	-----	-----
Manganese	-----	-----	-----
Molybdenum	-----	-----	-----
Nickel	-----	-----	-----
Palladium	-----	-----	-----
Phosphorus	-----	-----	-----
Potassium	1.98	1.89	4.72%
Selenium	-----	-----	-----
Silicon	-----	-----	-----
Silver	-----	-----	-----
Sodium	117	117	0.31%
Strontium	-----	-----	-----
Sulfur	-----	-----	-----
Thallium	-----	-----	-----
Thorium	-----	-----	-----
Tin	-----	-----	-----
Titanium	-----	-----	-----
Tungsten	-----	-----	-----
Uranium	-----	-----	-----
Vanadium	-----	-----	-----
Yttrium	-----	-----	-----
Zinc	-----	-----	-----
Zirconium	-----	-----	-----

# SOUTHWEST RESEARCH INSTITUTE

## SAMPLE ANALYSIS DATA SHEET

00007

Lab Name: Southwest Research Institute

Lab Code: SwRI

Matrix: Water

Lab System ID: 237581

Sample ID

19D-1003-FA-5

Client: Division 20

Date Received: 11/06/03

Project No.: 20.06002.01.141

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	0.007	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.232	0.025
Cadmium	<0.005	0.005
Calcium	2.23	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.275	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.249	0.005
Magnesium	0.103	0.05
Manganese	0.040	0.005
Molybdenum	0.039	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	2.99	0.2
Selenium	<0.015	0.015
Silicon	7.10	0.05
Silver	<0.005	0.005
Sodium	173	0.2
Strontium	0.006	0.005
Sulfur	9.97	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	0.010	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005



# SOUTHWEST RESEARCH INSTITUTE

## MATRIX SPIKE SUMMARY



Sample ID

19D-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237581

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Spike Result (mg/L)	Spike Added (mg/L)	Recovery
Aluminum	-----	-----	-----	-----
Antimony	-----	-----	-----	-----
Arsenic	-----	-----	-----	-----
Barium	-----	-----	-----	-----
Beryllium	-----	-----	-----	-----
Bismuth	-----	-----	-----	-----
Boron	-----	-----	-----	-----
Cadmium	-----	-----	-----	-----
Calcium	-----	-----	-----	-----
Chromium	-----	-----	-----	-----
Cobalt	-----	-----	-----	-----
Copper	-----	-----	-----	-----
Iron	-----	-----	-----	-----
Lanthanum	-----	-----	-----	-----
Lead	-----	-----	-----	-----
Lithium	-----	-----	-----	-----
Magnesium	-----	-----	-----	-----
Manganese	-----	-----	-----	-----
Molybdenum	-----	-----	-----	-----
Nickel	-----	-----	-----	-----
Palladium	-----	-----	-----	-----
Phosphorus	-----	-----	-----	-----
Potassium	2.99	23.0	20.0	100.1%
Selenium	-----	-----	-----	-----
Silicon	-----	-----	-----	-----
Silver	-----	-----	-----	-----
Sodium	173	189	20.0	84.5%
Strontium	-----	-----	-----	-----
Sulfur	-----	-----	-----	-----
Thallium	-----	-----	-----	-----
Thorium	-----	-----	-----	-----
Tin	-----	-----	-----	-----
Titanium	-----	-----	-----	-----
Tungsten	-----	-----	-----	-----
Uranium	-----	-----	-----	-----
Vanadium	-----	-----	-----	-----
Yttrium	-----	-----	-----	-----
Zinc	-----	-----	-----	-----
Zirconium	-----	-----	-----	-----

NA- Not Applicable.

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**



Sample ID

19D-1003-FUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237582

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	0.008	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.233	0.025
Cadmium	<0.005	0.005
Calcium	2.24	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.202	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.247	0.005
Magnesium	0.106	0.05
Manganese	0.039	0.005
Molybdenum	0.038	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	3.08	0.2
Selenium	<0.015	0.015
Silicon	7.13	0.05
Silver	<0.005	0.005
Sodium	173	0.2
Strontium	0.006	0.005
Sulfur	9.89	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	0.025	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

Sample ID

19D-1003-UFUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237583

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.096	0.05
Antimony	<0.01	0.01
Arsenic	0.007	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.234	0.025
Cadmium	<0.005	0.005
Calcium	2.18	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	1.33	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.256	0.005
Magnesium	0.111	0.05
Manganese	0.049	0.005
Molybdenum	0.035	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.046	0.04
Potassium	2.93	0.2
Selenium	<0.015	0.015
Silicon	7.80	0.05
Silver	<0.005	0.005
Sodium	173	0.2
Strontium	0.007	0.005
Sulfur	9.85	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	0.024	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.014	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**010011**

Sample ID

19IM1-25-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237584

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.167	0.05
Antimony	<0.01	0.01
Arsenic	0.035	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.179	0.025
Cadmium	<0.005	0.005
Calcium	0.543	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.074	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.125	0.005
Magnesium	0.071	0.05
Manganese	0.015	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	3.04	0.2
Selenium	<0.015	0.015
Silicon	27.9	0.05
Silver	<0.005	0.005
Sodium	94.7	0.2
Strontium	<0.005	0.005
Sulfur	5.56	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**



Sample ID

19IM1-25-1003-FUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237585

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.132	0.05
Antimony	<0.01	0.01
Arsenic	0.034	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.162	0.025
Cadmium	<0.005	0.005
Calcium	0.538	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.125	0.005
Magnesium	0.068	0.05
Manganese	0.014	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.040	0.04
Potassium	2.92	0.2
Selenium	<0.015	0.015
Silicon	28.2	0.05
Silver	<0.005	0.005
Sodium	94.4	0.2
Strontium	<0.005	0.005
Sulfur	5.48	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

010012

19IM1-25-1003-UFUA-5

**Client: Division 20**

Date Received: 11/06/03

Project No.: 20.06002.01.141

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.204	0.05
Antimony	<0.01	0.01
Arsenic	0.033	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.163	0.025
Cadmium	<0.005	0.005
Calcium	0.761	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.195	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.128	0.005
Magnesium	0.094	0.05
Manganese	0.025	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.045	0.04
Potassium	3.04	0.2
Selenium	<0.015	0.015
Silicon	28.7	0.05
Silver	<0.005	0.005
Sodium	94.8	0.2
Strontium	<0.005	0.005
Sulfur	5.63	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.019	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**0310**

Sample ID

19IM2-25-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237587

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.158	0.05
Antimony	<0.01	0.01
Arsenic	0.037	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.157	0.025
Cadmium	<0.005	0.005
Calcium	0.360	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.074	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.126	0.005
Magnesium	<0.05	0.05
Manganese	<0.005	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.040	0.04
Potassium	2.96	0.2
Selenium	<0.015	0.015
Silicon	28.5	0.05
Silver	<0.005	0.005
Sodium	95.6	0.2
Strontium	<0.005	0.005
Sulfur	5.69	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**000015**

Sample ID

19IM2-25-1003-FUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237588

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.120	0.05
Antimony	<0.01	0.01
Arsenic	0.035	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.157	0.025
Cadmium	<0.005	0.005
Calcium	0.359	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.127	0.005
Magnesium	<0.05	0.05
Manganese	<0.005	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	3.09	0.2
Selenium	<0.015	0.015
Silicon	28.5	0.05
Silver	<0.005	0.005
Sodium	97.1	0.2
Strontium	<0.005	0.005
Sulfur	5.81	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005



# SOUTHWEST RESEARCH INSTITUTE

## SAMPLE ANALYSIS DATA SHEET



Sample ID

19IM2-25-1003-UFUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237589

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	0.174	0.05
Antimony	<0.01	0.01
Arsenic	0.032	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.157	0.025
Cadmium	<0.005	0.005
Calcium	0.409	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.190	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.127	0.005
Magnesium	<0.05	0.05
Manganese	0.034	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	3.11	0.2
Selenium	<0.015	0.015
Silicon	28.7	0.05
Silver	<0.005	0.005
Sodium	97.3	0.2
Strontium	<0.005	0.005
Sulfur	5.69	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.006	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**4100017**

Sample ID

7SC-24-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237590

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	<0.005	0.005
Barium	0.056	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.259	0.025
Cadmium	<0.005	0.005
Calcium	28.1	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.105	0.005
Magnesium	28.9	0.05
Manganese	0.075	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	8.08	0.2
Selenium	<0.015	0.015
Silicon	13.7	0.05
Silver	<0.005	0.005
Sodium	82.2	0.2
Strontium	0.413	0.005
Sulfur	45.0	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**000003**

Sample ID

7SC-24-1003-FUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237591

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	0.005	0.005
Barium	0.056	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.260	0.025
Cadmium	<0.005	0.005
Calcium	28.3	0.05
Chromium	<0.005	0.005
Cobalt	0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.104	0.005
Magnesium	28.9	0.05
Manganese	0.071	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	0.042	0.04
Potassium	8.16	0.2
Selenium	<0.015	0.015
Silicon	13.7	0.05
Silver	<0.005	0.005
Sodium	82.0	0.2
Strontium	0.413	0.005
Sulfur	43.7	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	0.016	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

000000

Sample ID

7SC-24-1003-UFUA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237592

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	<0.005	0.005
Barium	0.057	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	0.260	0.025
Cadmium	<0.005	0.005
Calcium	28.2	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	0.081	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	0.105	0.005
Magnesium	28.9	0.05
Manganese	0.071	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	8.12	0.2
Selenium	<0.015	0.015
Silicon	13.7	0.05
Silver	<0.005	0.005
Sodium	81.6	0.2
Strontium	0.416	0.005
Sulfur	44.3	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	0.016	0.005
Zirconium	<0.005	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**98Q-1003-FA-5**

Sample ID

98Q-1003-FA-5

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237593

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	<0.005	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	<0.025	0.025
Cadmium	<0.005	0.005
Calcium	10.1	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	<0.005	0.005
Magnesium	0.065	0.05
Manganese	<0.005	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	5.25	0.2
Selenium	<0.015	0.015
Silicon	19.4	0.05
Silver	<0.005	0.005
Sodium	27.0	0.2
Strontium	<0.005	0.005
Sulfur	0.114	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	0.008	0.005

# ***SOUTHWEST RESEARCH INSTITUTE***

## **SAMPLE ANALYSIS DATA SHEET**

**010021**

Sample ID

98Q-1003-FA-6

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: 11/06/03

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: 237594

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	<0.005	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	<0.025	0.025
Cadmium	<0.005	0.005
Calcium	9.91	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	<0.005	0.005
Magnesium	<0.05	0.05
Manganese	<0.005	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	5.32	0.2
Selenium	<0.015	0.015
Silicon	19.4	0.05
Silver	<0.005	0.005
Sodium	26.6	0.2
Strontium	<0.005	0.005
Sulfur	<0.025	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	0.005	0.005

# SOUTHWEST RESEARCH INSTITUTE

## LABORATORY CONTROL SAMPLE

**010022**

Sample ID  
LCSW - L11W1 / L24W1

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: NA

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: NA

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	True Value (mg/L)	Recovery
Aluminum	1.92	2.00	95.9%
Antimony	0.515	0.500	102.9%
Arsenic	2.08	2.00	104.1%
Barium	2.02	2.00	101.2%
Beryllium	0.054	0.050	108.4%
Bismuth	NA	NA	NA
Boron	NA	NA	NA
Cadmium	0.052	0.050	104.9%
Calcium	20.8	20.0	104.0%
Chromium	0.203	0.200	101.7%
Cobalt	0.515	0.500	103.0%
Copper	0.251	0.250	100.4%
Iron	1.03	1.00	103.1%
Lanthanum	NA	NA	NA
Lead	0.527	0.500	105.4%
Lithium	NA	NA	NA
Magnesium	20.4	20.0	101.9%
Manganese	0.516	0.500	103.1%
Molybdenum	NA	NA	NA
Nickel	0.511	0.500	102.2%
Palladium	NA	NA	NA
Phosphorus	NA	NA	NA
Potassium	18.3	20.0	91.4%
Selenium	2.15	2.00	107.3%
Silicon	NA	NA	NA
Silver	0.052	0.050	104.4%
Sodium	18.6	20.0	93.2%
Strontium	NA	NA	NA
Sulfur	NA	NA	NA
Thallium	2.22	2.00	110.9%
Thorium	NA	NA	NA
Tin	NA	NA	NA
Titanium	NA	NA	NA
Tungsten	NA	NA	NA
Uranium	NA	NA	NA
Vanadium	0.510	0.500	102.0%
Yttrium	NA	NA	NA
Zinc	0.531	0.500	106.2%
Zirconium	NA	NA	NA

NA- Not Applicable.

# ***SOUTHWEST RESEARCH INSTITUTE***

## **BLANK SUMMARY**

**000003**

Sample ID

PBW - L11W1 / L24W2

Lab Name: Southwest Research Institute

Client: Division 20

Lab Code: SwRI

Date Received: NA

Matrix: Water

Project No.: 20.06002.01.141

Lab System ID: NA

SRR: 25200

TO: 031106-12

Analysis	Sample Result (mg/L)	Reporting Limit (mg/L)
Aluminum	<0.05	0.05
Antimony	<0.01	0.01
Arsenic	<0.005	0.005
Barium	<0.005	0.005
Beryllium	<0.005	0.005
Bismuth	<0.015	0.015
Boron	<0.025	0.025
Cadmium	<0.005	0.005
Calcium	<0.05	0.05
Chromium	<0.005	0.005
Cobalt	<0.005	0.005
Copper	<0.005	0.005
Iron	<0.05	0.05
Lanthanum	<0.005	0.005
Lead	<0.005	0.005
Lithium	<0.005	0.005
Magnesium	<0.05	0.05
Manganese	<0.005	0.005
Molybdenum	<0.01	0.01
Nickel	<0.005	0.005
Palladium	<0.01	0.01
Phosphorus	<0.04	0.04
Potassium	<0.2	0.2
Selenium	<0.015	0.015
Silicon	<0.05	0.05
Silver	<0.005	0.005
Sodium	<0.2	0.2
Strontium	<0.005	0.005
Sulfur	<0.025	0.025
Thallium	<0.025	0.025
Thorium	<0.01	0.01
Tin	<0.01	0.01
Titanium	<0.005	0.005
Tungsten	<0.015	0.015
Uranium	<0.1	0.1
Vanadium	<0.005	0.005
Yttrium	<0.005	0.005
Zinc	<0.005	0.005
Zirconium	<0.005	0.005

NA- Not Applicable.