



20-Sep-2011

Marla Miller
Malcolm Pirnie
211 N Florence Street
Suite 202
El Paso, TX 79901

Tel: (602) 797-4699
Fax: (915) 533-9045

Re: El Paso Smelter

Work Order: **1109312**

Dear Marla,

ALS Environmental received 1 sample on 10-Sep-2011 11:07 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 36.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Bethany Agarwal".

Electronically approved by: Makenzie L. Henderson

Bethany Agarwal
Project Manager



Certificate No: T104704231-09A-TX

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

DOV#T UR X S#K VD /#F R US#Sdu#r i#k h#D OV#Dde r u d r u |#T ur x s #D #F dp se h a#E ur k h u r #O p l b g #F r p s d g |

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RIGHT SOLUTIONS RIGHT PARTNER

Client: Malcolm Pirnie
Project: El Paso Smelter
Work Order: 1109312

Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u> |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 1109312-01 | QA090911 | Water | | 9/9/2011 10:00 | 9/10/2011 11:07 | <input type="checkbox"/> |

ALS Environmental

Date: 21-Sep-11

Client: Malcolm Pirnie
Project: El Paso Smelter
Work Order: 1109312

Case Narrative

Batch 55334, Metals, Sample 1109206-01 : MS/MSD is for an unrelated sample.

ALS Environmental

Date: 20-Sep-11

Client: Malcolm Pirnie
 Project: El Paso Smelter
 Sample ID: QA090911
 Collection Date: 9/9/2011 10:00 AM

Work Order: 1109312
 Lab ID: 1109312-01
 Matrix: WATER

| Analyses | Result | Qual | SDL | MLL | Units | Dilution Factor | Date Analyzed |
|--------------------------|----------------|------|-----------------------|----------------|-------------------------|-----------------|---------------------|
| DISSOLVED MERCURY | | | Method: SW7470 | | Prep: SW7470 / 9/13/11 | | Analyst: JCJ |
| Mercury | | U | 0.000042 | 0.000200 | mg/L | 1 | 9/13/2011 16:52 |
| MERCURY | | | Method: SW7470 | | Prep: SW7470 / 9/14/11 | | Analyst: JCJ |
| Mercury | | U | 0.000042 | 0.000200 | mg/L | 1 | 9/14/2011 15:14 |
| DISSOLVED METALS | | | Method: SW6020 | | Prep: SW3010A / 9/12/11 | | Analyst: ALR |
| Antimony | 0.00647 | | 0.00050 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Arsenic | 1.20 | | 0.00090 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Barium | 0.0326 | | 0.00070 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Cadmium | U | | 0.00060 | 0.00200 | mg/L | 1 | 9/12/2011 21:28 |
| Chromium | U | | 0.00060 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Cobalt | U | | 0.00050 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Copper | U | | 0.00050 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Iron | U | | 0.036 | 0.200 | mg/L | 1 | 9/13/2011 19:18 |
| Lead | U | | 0.00040 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Molybdenum | 0.438 | | 0.00060 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Nickel | 0.00239 | J | 0.0014 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Selenium | 0.113 | | 0.0025 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Silver | U | | 0.00070 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| Thallium | U | | 0.00080 | 0.00200 | mg/L | 1 | 9/12/2011 21:28 |
| Zinc | 0.00765 | | 0.0025 | 0.00500 | mg/L | 1 | 9/12/2011 21:28 |
| METALS | | | Method: SW6020 | | Prep: SW3010A / 9/12/11 | | Analyst: IGF |
| Aluminum | 0.0107 | | 0.0040 | 0.0100 | mg/L | 1 | 9/13/2011 17:41 |
| Antimony | 0.00654 | | 0.00080 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Arsenic | 1.20 | | 0.0013 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Barium | 0.0334 | | 0.00090 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Cadmium | U | | 0.00080 | 0.00200 | mg/L | 1 | 9/12/2011 21:32 |
| Calcium | 120 | | 0.086 | 0.500 | mg/L | 1 | 9/12/2011 21:32 |
| Chromium | U | | 0.0012 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Cobalt | U | | 0.00080 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Copper | 0.00157 | J | 0.0015 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Iron | U | | 0.078 | 0.200 | mg/L | 1 | 9/12/2011 21:32 |
| Lead | U | | 0.00070 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Magnesium | 45.1 | | 0.082 | 0.200 | mg/L | 1 | 9/12/2011 21:32 |
| Manganese | 0.133 | | 0.0025 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Molybdenum | 0.432 | | 0.0015 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Nickel | 0.00144 | J | 0.0012 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Potassium | 34.9 | | 0.084 | 0.200 | mg/L | 1 | 9/13/2011 17:41 |
| Selenium | 0.116 | | 0.0010 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

ALS Environmental

Date: 20-Sep-11

Client: Malcolm Pirnie
 Project: El Paso Smelter
 Sample ID: QA090911
 Collection Date: 9/9/2011 10:00 AM

Work Order: 1109312
 Lab ID: 1109312-01
 Matrix: WATER

| Analyses | Result | Qual | SDL | MLL | Units | Dilution Factor | Date Analyzed |
|--|---------|------|---------------------|---------|-------|-----------------|-----------------|
| Silver | | U | 0.00080 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| Sodium | 404 | | 0.85 | 2.00 | mg/L | 10 | 9/13/2011 17:35 |
| Thallium | | U | 0.0010 | 0.00200 | mg/L | 1 | 9/12/2011 21:32 |
| Zinc | 0.00252 | J | 0.0025 | 0.00500 | mg/L | 1 | 9/12/2011 21:32 |
| ANIONS - EPA 300.0 (1993) | | | Method: E300 | | | Analyst: RPM | |
| Chloride | 206 | | 2.00 | 5.00 | mg/L | 10 | 9/10/2011 16:52 |
| Fluoride | 3.33 | | 0.0500 | 0.100 | mg/L | 1 | 9/10/2011 16:31 |
| Nitrogen, Nitrate (As N) | 3.10 | | 0.0300 | 0.100 | mg/L | 1 | 9/10/2011 16:31 |
| Nitrogen, Nitrite (As N) | 0.0330 | J | 0.0300 | 0.100 | mg/L | 1 | 9/10/2011 16:31 |
| Sulfate | 769 | | 5.00 | 5.00 | mg/L | 10 | 9/15/2011 17:56 |
| Nitrate/Nitrite (as N) | 3.13 | | 0.0300 | 0.100 | mg/L | 1 | 9/10/2011 16:31 |
| Surr: Selenate (surr) | 112 | | | 85-115 | %REC | 1 | 9/10/2011 16:31 |
| Surr: Selenate (surr) | 105 | | | 85-115 | %REC | 10 | 9/10/2011 16:52 |
| Surr: Selenate (surr) | 113 | | | 85-115 | %REC | 10 | 9/15/2011 17:56 |
| ALKALINITY | | | Method: SM2320B | | | Analyst: DM | |
| Alkalinity, Total (As CaCO3) | 328 | | 5.0 | 5.00 | mg/L | 1 | 9/19/2011 10:30 |
| SULFIDE | | | Method: SM4500 S2-F | | | Analyst: JKP | |
| Sulfide | 30.8 | | 0.50 | 1.00 | mg/L | 1 | 9/12/2011 10:50 |
| TOTAL DISSOLVED SOLIDS | | | Method: M2540C | | | Analyst: TDW | |
| Total Dissolved Solids (Residue, Filterable) | 1,900 | | 5.0 | 10.0 | mg/L | 1 | 9/12/2011 15:00 |
| TOTAL ORGANIC CARBON - SM5310C | | | Method: SM5310C | | | Analyst: JKP | |
| Organic Carbon, Total | 2.08 | | 0.10 | 0.500 | mg/L | 1 | 9/16/2011 02:49 |
| TOTAL SUSPENDED SOLIDS | | | Method: M2540D | | | Analyst: KAH | |
| Suspended Solids (Residue, Non-Filterable) | 2.00 | | 2.00 | 2.00 | mg/L | 1 | 9/12/2011 13:35 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

WorkOrder: 1109312
InstrumentID: Balance1
Test Code: TSS_W 2540D
Test Number: M2540D
Test Name: Total Suspended Solids

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|--|-----|------|------|----------------|
| A | Suspended Solids (Residue, Non-Filterable) | TSS | 2.00 | 2.00 | 2.00 |

WorkOrder: 1109312
InstrumentID: ICP7500
Test Code: ICP_TW
Test Number: SW6020
Test Name: Metals

**METHOD DETECTION /
 REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|------------|-----------|--------|---------|----------------|
| A | Aluminum | 7429-90-5 | 0.0069 | 0.0040 | 0.010 |
| A | Antimony | 7440-36-0 | 0.0019 | 0.00080 | 0.0050 |
| A | Arsenic | 7440-38-2 | 0.0015 | 0.0013 | 0.0050 |
| A | Barium | 7440-39-3 | 0.0013 | 0.00090 | 0.0050 |
| A | Cadmium | 7440-43-9 | 0.0014 | 0.00080 | 0.0020 |
| A | Calcium | 7440-70-2 | 0.19 | 0.086 | 0.50 |
| A | Chromium | 7440-47-3 | 0.0015 | 0.0012 | 0.0050 |
| A | Cobalt | 7440-48-4 | 0.0015 | 0.00080 | 0.0050 |
| A | Copper | 7440-50-8 | 0.0016 | 0.0015 | 0.0050 |
| A | Iron | 7439-89-6 | 0.16 | 0.078 | 0.20 |
| A | Lead | 7439-92-1 | 0.0010 | 0.00070 | 0.0050 |
| A | Magnesium | 7439-95-4 | 0.14 | 0.082 | 0.20 |
| A | Manganese | 7439-96-5 | 0.0016 | 0.0025 | 0.0050 |
| A | Molybdenum | 7439-98-7 | 0.0027 | 0.0015 | 0.0050 |
| A | Nickel | 7440-02-0 | 0.0016 | 0.0012 | 0.0050 |
| A | Potassium | 7440-09-7 | 0.14 | 0.084 | 0.20 |
| A | Selenium | 7782-49-2 | 0.0022 | 0.0010 | 0.0050 |
| A | Silver | 7440-22-4 | 0.0014 | 0.00080 | 0.0050 |
| A | Sodium | 7440-23-5 | 0.053 | 0.085 | 0.20 |
| A | Thallium | 7440-28-0 | 0.0017 | 0.0010 | 0.0020 |
| A | Zinc | 7440-66-6 | 0.0024 | 0.0025 | 0.0050 |

WorkOrder: 1109312
InstrumentID: ICPMS03
Test Code: ICP_DISS
Test Number: SW6020
Test Name: Dissolved Metals

**METHOD DETECTION /
 REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|------------|-----------|---------|---------|----------------|
| A | Antimony | 7440-36-0 | 0.0017 | 0.00050 | 0.0050 |
| A | Arsenic | 7440-38-2 | 0.0020 | 0.00090 | 0.0050 |
| A | Barium | 7440-39-3 | 0.0016 | 0.00070 | 0.0050 |
| A | Cadmium | 7440-43-9 | 0.0013 | 0.00060 | 0.0020 |
| A | Chromium | 7440-47-3 | 0.0013 | 0.00060 | 0.0050 |
| A | Cobalt | 7440-48-4 | 0.0012 | 0.00050 | 0.0050 |
| A | Copper | 7440-50-8 | 0.0012 | 0.00050 | 0.0050 |
| A | Iron | 7439-89-6 | 0.12 | 0.036 | 0.20 |
| A | Lead | 7439-92-1 | 0.0015 | 0.00040 | 0.0050 |
| A | Molybdenum | 7439-98-7 | 0.0040 | 0.00060 | 0.0050 |
| A | Nickel | 7440-02-0 | 0.0011 | 0.0014 | 0.0050 |
| A | Selenium | 7782-49-2 | 0.0041 | 0.0025 | 0.0050 |
| A | Silver | 7440-22-4 | 0.0014 | 0.00070 | 0.0050 |
| A | Thallium | 7440-28-0 | 0.0015 | 0.00080 | 0.0020 |
| A | Zinc | 7440-66-6 | 0.00098 | 0.0025 | 0.0050 |

WorkOrder: 1109312

InstrumentID: ICS3000

Test Code: 300_W

Test Number: E300

Test Name: Anions - EPA 300.0 (1993)

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous

Units: mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|--------------------------|------------|--------|--------|----------------|
| A | Chloride | 16887-00-6 | 0.495 | 0.200 | 0.500 |
| A | Fluoride | 16984-48-8 | 0.0830 | 0.0500 | 0.100 |
| A | Nitrogen, Nitrate (As N) | 14797-55-8 | 0.0890 | 0.0300 | 0.100 |
| A | Nitrogen, Nitrite (As N) | 14797-65-0 | 0.0850 | 0.0300 | 0.100 |
| A | Sulfate | 14808-79-8 | 0.542 | 0.500 | 0.500 |
| M | Nitrate/Nitrite (as N) | | 0.174 | 0.0300 | 0.100 |
| S | Surr: Selenate (surr) | 10102-23-5 | 0 | 0.100 | 0.100 |

WorkOrder: 1109312
InstrumentID: Mercury
Test Code: HG_DISS
Test Number: SW7470
Test Name: Dissolved Mercury

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous Units: mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|---------|-----------|----------|----------|----------------|
| A | Mercury | 7439-97-6 | 0.000090 | 0.000042 | 0.00020 |

WorkOrder: 1109312
InstrumentID: Mercury
Test Code: HG_W
Test Number: SW7470
Test Name: Mercury

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|---------|-----------|----------|----------|----------------|
| A | Mercury | 7439-97-6 | 0.000090 | 0.000042 | 0.00020 |

WorkOrder: 1109312
InstrumentID: TOC_02
Test Code: TOC_W 5310C
Test Number: SM5310C
Test Name: Total Organic Carbon - SM5310C

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|-----------------------|-----------|------|------|----------------|
| A | Organic Carbon, Total | 7440-44-0 | 0.21 | 0.10 | 0.50 |

WorkOrder: 1109312
InstrumentID: WetChem
Test Code: ALK_W 2320B
Test Number: SM2320B
Test Name: Alkalinity

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|------------------------------|-----|-----|-----|----------------|
| A | Alkalinity, Total (As CaCO3) | ALK | 11 | 5.0 | 5.0 |

WorkOrder: 1109312
InstrumentID: WetChem
Test Code: SULFD_4500S F
Test Number: SM4500 S2-F
Test Name: Sulfide

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous Units: mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|---------|------------|------|------|----------------|
| A | Sulfide | 18496-25-8 | 0.60 | 0.50 | 1.0 |

WorkOrder: 1109312
InstrumentID: WetChem
Test Code: TDS_W 2540C
Test Number: M2540C
Test Name: Total Dissolved Solids

**METHOD DETECTION /
REPORTING LIMITS**

Matrix: Aqueous **Units:** mg/L

| Type | Analyte | CAS | DCS | MDL | Unadjusted MQL |
|------|--|-----|-----|-----|----------------|
| A | Total Dissolved Solids (Residue, Filterable) | TDS | 0 | 5.0 | 10 |

ALS Environmental

Date: 20-Sep-11

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **55334** Instrument ID **ICPMS03** Method: **SW6020**

| MBLK | Sample ID: MBLKW2-091211-55334 | | | | Units: mg/L | Analysis Date: 9/13/2011 02:43 PM | | | | |
|------------|---------------------------------------|--------|---------|---------------|-----------------------|--|---------------|------|-----------|------|
| Client ID: | Run ID: ICPMS03_110913A | | | | SeqNo: 2524705 | Prep Date: 9/12/2011 | DF: 1 | | | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | U | 0.010 | | | | | | | | |
| Antimony | U | 0.0050 | | | | | | | | |
| Arsenic | U | 0.0050 | | | | | | | | |
| Barium | U | 0.0050 | | | | | | | | |
| Cadmium | U | 0.0020 | | | | | | | | |
| Calcium | U | 0.50 | | | | | | | | |
| Chromium | U | 0.0050 | | | | | | | | |
| Cobalt | U | 0.0050 | | | | | | | | |
| Copper | U | 0.0050 | | | | | | | | |
| Iron | U | 0.20 | | | | | | | | |
| Lead | U | 0.0050 | | | | | | | | |
| Magnesium | U | 0.20 | | | | | | | | |
| Manganese | U | 0.0050 | | | | | | | | |
| Molybdenum | 0.001685 | 0.0050 | | | | | | | | J |
| Nickel | U | 0.0050 | | | | | | | | |
| Potassium | U | 0.20 | | | | | | | | |
| Selenium | 0.001088 | 0.0050 | | | | | | | | J |
| Silver | U | 0.0050 | | | | | | | | |
| Sodium | U | 0.20 | | | | | | | | |
| Thallium | U | 0.0020 | | | | | | | | |
| Zinc | 0.003241 | 0.0050 | | | | | | | | J |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: 55334 Instrument ID ICPMS03 Method: SW6020

| LCS | | Sample ID: MLCSW2-091211-55334 | | | Units: mg/L | | | Analysis Date: 9/13/2011 02:49 PM | | |
|------------|---------|--------------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID: | | Run ID: ICPMS03_110913A | | | SeqNo: 2524707 | | Prep Date: 9/12/2011 | | DF: 1 | |
| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | 0.09759 | 0.010 | 0.1 | 0 | 97.6 | 80-120 | 0 | | | |
| Antimony | 0.04627 | 0.0050 | 0.05 | 0 | 92.5 | 80-120 | 0 | | | |
| Arsenic | 0.04803 | 0.0050 | 0.05 | 0 | 96.1 | 80-120 | 0 | | | |
| Barium | 0.04777 | 0.0050 | 0.05 | 0 | 95.5 | 80-120 | 0 | | | |
| Cadmium | 0.04799 | 0.0020 | 0.05 | 0 | 96 | 80-120 | 0 | | | |
| Calcium | 4.871 | 0.50 | 5 | 0 | 97.4 | 80-120 | 0 | | | |
| Chromium | 0.04831 | 0.0050 | 0.05 | 0 | 96.6 | 80-120 | 0 | | | |
| Cobalt | 0.04804 | 0.0050 | 0.05 | 0 | 96.1 | 80-120 | 0 | | | |
| Copper | 0.04801 | 0.0050 | 0.05 | 0 | 96 | 80-120 | 0 | | | |
| Iron | 4.741 | 0.20 | 5 | 0 | 94.8 | 80-120 | 0 | | | |
| Lead | 0.04823 | 0.0050 | 0.05 | 0 | 96.5 | 80-120 | 0 | | | |
| Magnesium | 4.802 | 0.20 | 5 | 0 | 96 | 80-120 | 0 | | | |
| Manganese | 0.0476 | 0.0050 | 0.05 | 0 | 95.2 | 80-120 | 0 | | | |
| Molybdenum | 0.04725 | 0.0050 | 0.05 | 0 | 94.5 | 80-120 | 0 | | | |
| Nickel | 0.04832 | 0.0050 | 0.05 | 0 | 96.6 | 80-120 | 0 | | | |
| Potassium | 4.83 | 0.20 | 5 | 0 | 96.6 | 80-120 | 0 | | | |
| Selenium | 0.0474 | 0.0050 | 0.05 | 0 | 94.8 | 80-120 | 0 | | | |
| Silver | 0.04586 | 0.0050 | 0.05 | 0 | 91.7 | 80-120 | 0 | | | |
| Sodium | 4.758 | 0.20 | 5 | 0 | 95.2 | 80-120 | 0 | | | |
| Thallium | 0.04709 | 0.0020 | 0.05 | 0 | 94.2 | 80-120 | 0 | | | |
| Zinc | 0.04821 | 0.0050 | 0.05 | 0 | 96.4 | 80-120 | 0 | | | |

| MS | | Sample ID: 1109206-01DMS | | | Units: mg/L | | | Analysis Date: 9/12/2011 10:39 PM | | |
|------------|---------|--------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID: | | Run ID: ICP7500_110912A | | | SeqNo: 2523834 | | Prep Date: 9/12/2011 | | DF: 1 | |
| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Antimony | 0.05533 | 0.0050 | 0.05 | 0.008057 | 94.5 | 80-120 | 0 | | | |
| Arsenic | 1.592 | 0.0050 | 0.05 | 1.525 | 134 | 80-120 | 0 | | | SO |
| Barium | 0.07692 | 0.0050 | 0.05 | 0.02618 | 101 | 80-120 | 0 | | | |
| Cadmium | 0.04888 | 0.0020 | 0.05 | 0.0006835 | 96.4 | 80-120 | 0 | | | |
| Chromium | 0.05025 | 0.0050 | 0.05 | 0.0005803 | 99.3 | 80-120 | 0 | | | |
| Cobalt | 0.04901 | 0.0050 | 0.05 | 0.0006735 | 96.7 | 80-120 | 0 | | | |
| Copper | 0.04887 | 0.0050 | 0.05 | 0.001417 | 94.9 | 80-120 | 0 | | | |
| Iron | 4.921 | 0.20 | 5 | 0.0659 | 97.1 | 80-120 | 0 | | | |
| Lead | 0.04934 | 0.0050 | 0.05 | 0.0006769 | 97.3 | 80-120 | 0 | | | |
| Manganese | 0.3468 | 0.0050 | 0.05 | 0.2947 | 104 | 80-120 | 0 | | | O |
| Molybdenum | 0.4675 | 0.0050 | 0.05 | 0.4196 | 95.8 | 80-120 | 0 | | | O |
| Nickel | 0.05167 | 0.0050 | 0.05 | 0.003417 | 96.5 | 80-120 | 0 | | | |
| Selenium | 0.2144 | 0.0050 | 0.05 | 0.1542 | 120 | 80-120 | 0 | | | S |
| Silver | 0.04192 | 0.0050 | 0.05 | -0.0005041 | 84.8 | 80-120 | 0 | | | |
| Zinc | 0.05463 | 0.0050 | 0.05 | 0.006601 | 96.1 | 80-120 | 0 | | | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: 55334 Instrument ID ICPMS03 Method: SW6020

MS Sample ID: 1109206-01DMS Units: mg/L Analysis Date: 9/13/2011 03:13 PM

Client ID: Run ID: ICPMS03_110913A SeqNo: 2524716 Prep Date: 9/12/2011 DF: 1

| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|-----------|---------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Aluminum | 0.1552 | 0.010 | 0.1 | 0.05493 | 100 | 80-120 | 0 | | | |
| Calcium | 113.6 | 0.50 | 5 | 110.8 | 56 | 80-120 | 0 | | | SO |
| Magnesium | 53.96 | 0.20 | 5 | 50.3 | 73.2 | 80-120 | 0 | | | SO |
| Potassium | 47.49 | 0.20 | 5 | 43.14 | 87 | 80-120 | 0 | | | O |
| Sodium | U | 0.20 | 5 | 0 | 0 | 80-120 | 0 | | | SX |
| Thallium | 0.04529 | 0.0020 | 0.05 | 0 | 90.6 | 80-120 | 0 | | | |

MSD Sample ID: 1109206-01DMSD Units: mg/L Analysis Date: 9/12/2011 10:45 PM

Client ID: Run ID: ICP7500_110912A SeqNo: 2523835 Prep Date: 9/12/2011 DF: 1

| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|---------|--------|---------|---------------|------|---------------|---------------|-------|-----------|------|
| Antimony | 0.05408 | 0.0050 | 0.05 | 0.008057 | 92 | 80-120 | 0.05533 | 2.28 | 15 | |
| Arsenic | 1.571 | 0.0050 | 0.05 | 1.525 | 92 | 80-120 | 1.592 | 1.33 | 15 | O |
| Barium | 0.07699 | 0.0050 | 0.05 | 0.02618 | 102 | 80-120 | 0.07692 | 0.091 | 15 | |
| Cadmium | 0.04867 | 0.0020 | 0.05 | 0.0006835 | 96 | 80-120 | 0.04888 | 0.431 | 15 | |
| Chromium | 0.04895 | 0.0050 | 0.05 | 0.0005803 | 96.7 | 80-120 | 0.05025 | 2.62 | 15 | |
| Cobalt | 0.0479 | 0.0050 | 0.05 | 0.0006735 | 94.5 | 80-120 | 0.04901 | 2.29 | 15 | |
| Copper | 0.04794 | 0.0050 | 0.05 | 0.001417 | 93 | 80-120 | 0.04887 | 1.92 | 15 | |
| Iron | 4.898 | 0.20 | 5 | 0.0659 | 96.6 | 80-120 | 4.921 | 0.468 | 15 | |
| Lead | 0.04955 | 0.0050 | 0.05 | 0.0006769 | 97.7 | 80-120 | 0.04934 | 0.425 | 15 | |
| Manganese | 0.3411 | 0.0050 | 0.05 | 0.2947 | 92.8 | 80-120 | 0.3468 | 1.66 | 15 | O |
| Molybdenum | 0.4624 | 0.0050 | 0.05 | 0.4196 | 85.6 | 80-120 | 0.4675 | 1.1 | 15 | O |
| Nickel | 0.05023 | 0.0050 | 0.05 | 0.003417 | 93.6 | 80-120 | 0.05167 | 2.83 | 15 | |
| Selenium | 0.2123 | 0.0050 | 0.05 | 0.1542 | 116 | 80-120 | 0.2144 | 0.984 | 15 | |
| Silver | 0.04131 | 0.0050 | 0.05 | -0.0005041 | 83.6 | 80-120 | 0.04192 | 1.47 | 15 | |
| Zinc | 0.05551 | 0.0050 | 0.05 | 0.006601 | 97.8 | 80-120 | 0.05463 | 1.6 | 15 | |

MSD Sample ID: 1109206-01DMSD Units: mg/L Analysis Date: 9/13/2011 03:18 PM

Client ID: Run ID: ICPMS03_110913A SeqNo: 2524719 Prep Date: 9/12/2011 DF: 1

| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|-----------|---------|--------|---------|---------------|------|---------------|---------------|--------|-----------|------|
| Aluminum | 0.1525 | 0.010 | 0.1 | 0.05493 | 97.6 | 80-120 | 0.1552 | 1.75 | 15 | |
| Calcium | 113.5 | 0.50 | 5 | 110.8 | 54 | 80-120 | 113.6 | 0.0881 | 15 | SO |
| Magnesium | 53.41 | 0.20 | 5 | 50.3 | 62.2 | 80-120 | 53.96 | 1.02 | 15 | SO |
| Potassium | 46.98 | 0.20 | 5 | 43.14 | 76.8 | 80-120 | 47.49 | 1.08 | 15 | SO |
| Sodium | U | 0.20 | 5 | 0 | 0 | 80-120 | 0 | 0 | 15 | SX |
| Thallium | 0.04563 | 0.0020 | 0.05 | 0 | 91.3 | 80-120 | 0.04529 | 0.748 | 15 | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: 55334 Instrument ID ICPMS03 Method: SW6020

| DUP | | Sample ID: 1109206-01DDUP | | | Units: mg/L | | | Analysis Date: 9/12/2011 10:33 PM | | |
|------------|-----------|---------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID: | | Run ID: ICP7500_110912A | | | SeqNo: 2523833 | | Prep Date: 9/12/2011 | | DF: 1 | |
| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Antimony | 0.007918 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.008057 | 1.74 | 25 | |
| Arsenic | 1.516 | 0.0050 | 0 | 0 | 0 | 0-0 | 1.525 | 0.592 | 25 | |
| Barium | 0.02543 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.02618 | 2.91 | 25 | |
| Cadmium | 0.0008806 | 0.0020 | 0 | 0 | 0 | 0-0 | 0.0006835 | 0 | 25 | J |
| Chromium | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.0005803 | 0 | 25 | |
| Cobalt | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.0006735 | 0 | 25 | |
| Copper | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.001417 | 0 | 25 | |
| Iron | U | 0.20 | 0 | 0 | 0 | 0-0 | 0.0659 | 0 | 25 | |
| Lead | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.0006769 | 0 | 25 | |
| Manganese | 0.2921 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.2947 | 0.886 | 25 | |
| Molybdenum | 0.4166 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.4196 | 0.718 | 25 | |
| Nickel | 0.003624 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.003417 | 0 | 25 | J |
| Selenium | 0.1538 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.1542 | 0.26 | 25 | |
| Silver | U | 0.0050 | 0 | 0 | 0 | 0-0 | -0.0005041 | 0 | 25 | |
| Zinc | 0.008229 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.006601 | 22 | 25 | |

| DUP | | Sample ID: 1109206-01DDUP | | | Units: mg/L | | | Analysis Date: 9/13/2011 03:01 PM | | |
|------------|---------|---------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID: | | Run ID: ICPMS03_110913A | | | SeqNo: 2524710 | | Prep Date: 9/12/2011 | | DF: 1 | |
| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum | 0.05262 | 0.010 | 0 | 0 | 0 | 0-0 | 0.05493 | 4.3 | 25 | |
| Calcium | 111.7 | 0.50 | 0 | 0 | 0 | 0-0 | 110.8 | 0.809 | 25 | |
| Magnesium | 51.15 | 0.20 | 0 | 0 | 0 | 0-0 | 50.3 | 1.68 | 25 | |
| Potassium | 43.59 | 0.20 | 0 | 0 | 0 | 0-0 | 43.14 | 1.04 | 25 | |
| Thallium | U | 0.0020 | 0 | 0 | 0 | 0-0 | 0 | 0 | 25 | |

| DUP | | Sample ID: 1109206-01DDUP | | | Units: mg/L | | | Analysis Date: 9/13/2011 03:43 PM | | |
|------------|--------|---------------------------|---------|---------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID: | | Run ID: ICP7500_110913A | | | SeqNo: 2524831 | | Prep Date: 9/12/2011 | | DF: 10 | |
| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sodium | 525.4 | 2.0 | 0 | 0 | 0 | 0-0 | 508.4 | 0 | 25 | |

The following samples were analyzed in this batch: 1109312-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **55337** Instrument ID **ICPMS03** Method: **SW6020** (**Dissolve**)

MBLK Sample ID: **MBLKW5-091211-55337** Units: **mg/L** Analysis Date: **9/12/2011 03:45 PM**

Client ID: Run ID: **ICPMS03_110912A** SeqNo: **2523350** Prep Date: **9/12/2011** DF: **1**

| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|----------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Antimony | U | 0.0050 | | | | | | | | |
| Arsenic | U | 0.0050 | | | | | | | | |
| Barium | 0.00161 | 0.0050 | | | | | | | | J |
| Cadmium | U | 0.0020 | | | | | | | | |
| Chromium | U | 0.0050 | | | | | | | | |
| Cobalt | U | 0.0050 | | | | | | | | |
| Copper | U | 0.0050 | | | | | | | | |
| Iron | U | 0.20 | | | | | | | | |
| Lead | U | 0.0050 | | | | | | | | |
| Molybdenum | U | 0.0050 | | | | | | | | |
| Nickel | U | 0.0050 | | | | | | | | |
| Selenium | 0.001325 | 0.0050 | | | | | | | | J |
| Silver | U | 0.0050 | | | | | | | | |
| Thallium | U | 0.0020 | | | | | | | | |
| Zinc | 0.003706 | 0.0050 | | | | | | | | J |

LCS Sample ID: **MLCSW5-091211-55337** Units: **mg/L** Analysis Date: **9/12/2011 03:51 PM**

Client ID: Run ID: **ICPMS03_110912A** SeqNo: **2523351** Prep Date: **9/12/2011** DF: **1**

| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|---------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Antimony | 0.04807 | 0.0050 | 0.05 | 0 | 96.1 | 80-120 | 0 | | | |
| Arsenic | 0.04921 | 0.0050 | 0.05 | 0 | 98.4 | 80-120 | 0 | | | |
| Barium | 0.05035 | 0.0050 | 0.05 | 0 | 101 | 80-120 | 0 | | | |
| Cadmium | 0.04994 | 0.0020 | 0.05 | 0 | 99.9 | 80-120 | 0 | | | |
| Chromium | 0.04806 | 0.0050 | 0.05 | 0 | 96.1 | 80-120 | 0 | | | |
| Cobalt | 0.0481 | 0.0050 | 0.05 | 0 | 96.2 | 80-120 | 0 | | | |
| Copper | 0.04767 | 0.0050 | 0.05 | 0 | 95.3 | 80-120 | 0 | | | |
| Iron | 4.758 | 0.20 | 5 | 0 | 95.2 | 80-120 | 0 | | | |
| Lead | 0.05167 | 0.0050 | 0.05 | 0 | 103 | 80-120 | 0 | | | |
| Molybdenum | 0.04846 | 0.0050 | 0.05 | 0 | 96.9 | 80-120 | 0 | | | |
| Nickel | 0.0482 | 0.0050 | 0.05 | 0 | 96.4 | 80-120 | 0 | | | |
| Selenium | 0.04896 | 0.0050 | 0.05 | 0 | 97.9 | 80-120 | 0 | | | |
| Silver | 0.04767 | 0.0050 | 0.05 | 0 | 95.3 | 80-120 | 0 | | | |
| Thallium | 0.04866 | 0.0020 | 0.05 | 0 | 97.3 | 80-120 | 0 | | | |
| Zinc | 0.0518 | 0.0050 | 0.05 | 0 | 104 | 80-120 | 0 | | | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: 55337 Instrument ID ICPMS03 Method: SW6020 (Dissolve)

MS Sample ID: 1109167-01BMS Units: mg/L Analysis Date: 9/12/2011 04:14 PM

Client ID: Run ID: ICPMS03_110912A SeqNo: 2523355 Prep Date: 9/12/2011 DF: 1

| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|---------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Antimony | 0.04962 | 0.0050 | 0.05 | 0.0004499 | 98.3 | 75-125 | 0 | | | |
| Arsenic | 0.05116 | 0.0050 | 0.05 | 0.001222 | 99.9 | 75-125 | 0 | | | |
| Barium | 0.4373 | 0.0050 | 0.05 | 0.3843 | 106 | 75-125 | 0 | | | O |
| Cadmium | 0.04878 | 0.0020 | 0.05 | 0.0002887 | 97 | 75-125 | 0 | | | |
| Chromium | 0.0474 | 0.0050 | 0.05 | 0.0004275 | 93.9 | 75-125 | 0 | | | |
| Cobalt | 0.04767 | 0.0050 | 0.05 | 0.001819 | 91.7 | 75-125 | 0 | | | |
| Copper | 0.04498 | 0.0050 | 0.05 | 0.0008975 | 88.2 | 75-125 | 0 | | | |
| Iron | 4.661 | 0.20 | 5 | 0.01257 | 93 | 75-125 | 0 | | | |
| Lead | 0.05018 | 0.0050 | 0.05 | 0.000265 | 99.8 | 75-125 | 0 | | | |
| Molybdenum | 0.05266 | 0.0050 | 0.05 | 0.003151 | 99 | 75-125 | 0 | | | |
| Nickel | 0.04679 | 0.0050 | 0.05 | 0.002963 | 87.7 | 75-125 | 0 | | | |
| Selenium | 0.05066 | 0.0050 | 0.05 | 0.001699 | 97.9 | 75-125 | 0 | | | |
| Silver | 0.04608 | 0.0050 | 0.05 | 0.000327 | 91.5 | 75-125 | 0 | | | |
| Thallium | 0.04728 | 0.0020 | 0.05 | 0.000521 | 93.5 | 75-125 | 0 | | | |
| Zinc | 0.05205 | 0.0050 | 0.05 | 0.01254 | 79 | 75-125 | 0 | | | |

MSD Sample ID: 1109167-01BMSD Units: mg/L Analysis Date: 9/12/2011 04:20 PM

Client ID: Run ID: ICPMS03_110912A SeqNo: 2523356 Prep Date: 9/12/2011 DF: 1

| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|---------|--------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Antimony | 0.04985 | 0.0050 | 0.05 | 0.0004499 | 98.8 | 75-125 | 0.04962 | 0 | 25 | |
| Arsenic | 0.051 | 0.0050 | 0.05 | 0.001222 | 99.6 | 75-125 | 0.05116 | 0 | 25 | |
| Barium | 0.4408 | 0.0050 | 0.05 | 0.3843 | 113 | 75-125 | 0.4373 | 0 | 25 | O |
| Cadmium | 0.04889 | 0.0020 | 0.05 | 0.0002887 | 97.2 | 75-125 | 0.04878 | 0 | 25 | |
| Chromium | 0.04696 | 0.0050 | 0.05 | 0.0004275 | 93.1 | 75-125 | 0.0474 | 0 | 25 | |
| Cobalt | 0.04746 | 0.0050 | 0.05 | 0.001819 | 91.3 | 75-125 | 0.04767 | 0 | 25 | |
| Copper | 0.04459 | 0.0050 | 0.05 | 0.0008975 | 87.4 | 75-125 | 0.04498 | 0 | 25 | |
| Iron | 4.631 | 0.20 | 5 | 0.01257 | 92.4 | 75-125 | 4.661 | 0 | 25 | |
| Lead | 0.05274 | 0.0050 | 0.05 | 0.000265 | 105 | 75-125 | 0.05018 | 0 | 25 | |
| Molybdenum | 0.0538 | 0.0050 | 0.05 | 0.003151 | 101 | 75-125 | 0.05266 | 0 | 25 | |
| Nickel | 0.04726 | 0.0050 | 0.05 | 0.002963 | 88.6 | 75-125 | 0.04679 | 0 | 25 | |
| Selenium | 0.05159 | 0.0050 | 0.05 | 0.001699 | 99.8 | 75-125 | 0.05066 | 0 | 25 | |
| Silver | 0.04684 | 0.0050 | 0.05 | 0.000327 | 93 | 75-125 | 0.04608 | 0 | 25 | |
| Thallium | 0.05063 | 0.0020 | 0.05 | 0.000521 | 100 | 75-125 | 0.04728 | 0 | 25 | |
| Zinc | 0.05295 | 0.0050 | 0.05 | 0.01254 | 80.8 | 75-125 | 0.05205 | 0 | 25 | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: 55337 Instrument ID ICPMS03 Method: SW6020 (Dissolve)

| DUP | | Sample ID: 1109167-01BDUP | | | | Units: mg/L | | Analysis Date: 9/12/2011 04:02 PM | | |
|------------|----------|---------------------------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| Client ID: | | Run ID: ICPMS03_110912A | | | | SeqNo: 2523353 | | Prep Date: 9/12/2011 | | DF: 1 |
| Analyte | Result | MLQ | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Antimony | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.0004499 | 0 | 25 | |
| Arsenic | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.001222 | 0 | 25 | |
| Barium | 0.3856 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.3843 | 0 | 25 | |
| Cadmium | U | 0.0020 | 0 | 0 | 0 | 0-0 | 0.0002887 | 0 | 25 | |
| Chromium | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.0004275 | 0 | 25 | |
| Cobalt | 0.001839 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.001819 | 0 | 25 | J |
| Copper | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.0008975 | 0 | 25 | |
| Iron | U | 0.20 | 0 | 0 | 0 | 0-0 | 0.01257 | 0 | 25 | |
| Lead | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.000265 | 0 | 25 | |
| Molybdenum | 0.002377 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.003151 | 0 | 25 | J |
| Nickel | 0.002479 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.002963 | 0 | 25 | J |
| Selenium | 0.001505 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.001699 | 0 | 25 | J |
| Silver | U | 0.0050 | 0 | 0 | 0 | 0-0 | 0.000327 | 0 | 25 | |
| Thallium | U | 0.0020 | 0 | 0 | 0 | 0-0 | 0.000521 | 0 | 25 | |
| Zinc | 0.006527 | 0.0050 | 0 | 0 | 0 | 0-0 | 0.01254 | 0 | 25 | |

The following samples were analyzed in this batch:

1109312-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **55361** Instrument ID **Mercury** Method: **SW7470** (Dissolve)

| MBLK | Sample ID: GBLKW4-091311-55361 | | | | | Units: mg/L | Analysis Date: 9/13/2011 04:40 PM | | | |
|------------|---------------------------------------|---------|---------|-----------------------|-----------------------------|--------------------|--|------|-----------|------|
| Client ID: | Run ID: MERCURY_110913A | | | SeqNo: 2524938 | Prep Date: 9/13/2011 | DF: 1 | | | | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | U | 0.00020 | | | | | | | | |

| LCS | Sample ID: GLCSW4-091311-55361 | | | | | Units: mg/L | Analysis Date: 9/13/2011 04:42 PM | | | |
|------------|---------------------------------------|---------|---------|-----------------------|-----------------------------|--------------------|--|------|-----------|------|
| Client ID: | Run ID: MERCURY_110913A | | | SeqNo: 2524939 | Prep Date: 9/13/2011 | DF: 1 | | | | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | 0.00527 | 0.00020 | 0.005 | 0 | 105 | 80-120 | 0 | | | |

| MS | Sample ID: 1109206-01CMS | | | | | Units: mg/L | Analysis Date: 9/13/2011 04:48 PM | | | |
|------------|---------------------------------|---------|---------|-----------------------|-----------------------------|--------------------|--|------|-----------|------|
| Client ID: | Run ID: MERCURY_110913A | | | SeqNo: 2524943 | Prep Date: 9/13/2011 | DF: 1 | | | | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | 0.00519 | 0.00020 | 0.005 | 0.000006 | 104 | 80-120 | 0 | | | |

| MSD | Sample ID: 1109206-01CMSD | | | | | Units: mg/L | Analysis Date: 9/13/2011 04:50 PM | | | |
|------------|----------------------------------|---------|---------|-----------------------|-----------------------------|--------------------|--|------|-----------|------|
| Client ID: | Run ID: MERCURY_110913A | | | SeqNo: 2524945 | Prep Date: 9/13/2011 | DF: 1 | | | | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | 0.00525 | 0.00020 | 0.005 | 0.000006 | 105 | 80-120 | 0.00519 | 1.15 | 20 | |

| DUP | Sample ID: 1109206-01CDUP | | | | | Units: mg/L | Analysis Date: 9/13/2011 04:46 PM | | | |
|------------|----------------------------------|---------|---------|-----------------------|-----------------------------|--------------------|--|------|-----------|------|
| Client ID: | Run ID: MERCURY_110913A | | | SeqNo: 2524941 | Prep Date: 9/13/2011 | DF: 1 | | | | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | U | 0.00020 | 0 | 0 | 0 | 0-0 | 0.000006 | 0 | 20 | |

The following samples were analyzed in this batch: 1109312-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **55385** Instrument ID **Mercury** Method: **SW7470**

| MBLK | | Sample ID: GBLKW2-091411-55385 | | | | Units: mg/L | | Analysis Date: 9/14/2011 03:08 PM | | |
|------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: MERCURY_110914A | | | | SeqNo: 2526115 | | Prep Date: 9/14/2011 | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | U | 0.00020 | | | | | | | | |

| LCS | | Sample ID: GLCSW2-091411-55385 | | | | Units: mg/L | | Analysis Date: 9/14/2011 03:10 PM | | |
|------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: MERCURY_110914A | | | | SeqNo: 2526118 | | Prep Date: 9/14/2011 | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | 0.0052 | 0.00020 | 0.005 | | 0 | 104 | 85-115 | 0 | | |

| MS | | Sample ID: 1109312-01DMS | | | | Units: mg/L | | Analysis Date: 9/14/2011 03:18 PM | | |
|----------------------------|---------|---------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: QA090911 | | Run ID: MERCURY_110914A | | | | SeqNo: 2526121 | | Prep Date: 9/14/2011 | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | 0.00517 | 0.00020 | 0.005 | 0.000008 | 103 | 85-115 | | 0 | | |

| MSD | | Sample ID: 1109312-01DMSD | | | | Units: mg/L | | Analysis Date: 9/14/2011 03:20 PM | | |
|----------------------------|---------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: QA090911 | | Run ID: MERCURY_110914A | | | | SeqNo: 2526122 | | Prep Date: 9/14/2011 | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | 0.00527 | 0.00020 | 0.005 | 0.000008 | 105 | 85-115 | 0.00517 | 1.92 | 20 | |

| DUP | | Sample ID: 1109312-01DDUP | | | | Units: mg/L | | Analysis Date: 9/14/2011 03:16 PM | | |
|----------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: QA090911 | | Run ID: MERCURY_110914A | | | | SeqNo: 2526120 | | Prep Date: 9/14/2011 | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Mercury | U | 0.00020 | 0 | | 0 | 0 | 0-0 | 0.000008 | 0 | 20 |

The following samples were analyzed in this batch: 1109312-01D

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R115958** Instrument ID **ICS3000** Method: **E300**

MBLK Sample ID: **WBLKW1-091011-R115958** Units: **mg/L** Analysis Date: **9/10/2011 03:28 PM**

Client ID: Run ID: **ICS3000_110910B** SeqNo: **2522631** Prep Date: DF: **1**

| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Chloride | U | 0.50 | | | | | | | | |
| Fluoride | U | 0.10 | | | | | | | | |
| Nitrogen, Nitrate (As N) | U | 0.10 | | | | | | | | |
| Nitrogen, Nitrite (As N) | U | 0.10 | | | | | | | | |
| Nitrate/Nitrite (as N) | U | 0.20 | | | | | | | | |
| <i>Surr: Selenate (surr)</i> | 5.033 | 0.10 | 5 | 0 | 101 | 85-115 | 0 | | | |

LCS Sample ID: **WLCSW1-091011-R115958** Units: **mg/L** Analysis Date: **9/10/2011 03:49 PM**

Client ID: Run ID: **ICS3000_110910B** SeqNo: **2522632** Prep Date: DF: **1**

| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Chloride | 18.21 | 0.50 | 20 | 0 | 91.1 | 90-110 | 0 | | | |
| Fluoride | 3.744 | 0.10 | 4 | 0 | 93.6 | 90-110 | 0 | | | |
| Nitrogen, Nitrate (As N) | 4.095 | 0.10 | 4 | 0 | 102 | 90-110 | 0 | | | |
| Nitrogen, Nitrite (As N) | 4.064 | 0.10 | 4 | 0 | 102 | 90-110 | 0 | | | |
| Nitrate/Nitrite (as N) | 8.159 | 0.20 | 8 | 0 | 102 | 90-110 | 0 | | | |
| <i>Surr: Selenate (surr)</i> | 5.535 | 0.10 | 5 | 0 | 111 | 85-115 | 0 | | | |

LCS D Sample ID: **WLCSDW1-091011-R115958** Units: **mg/L** Analysis Date: **9/10/2011 04:10 PM**

Client ID: Run ID: **ICS3000_110910B** SeqNo: **2522633** Prep Date: DF: **1**

| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------|--------|------|---------|---------------|------|---------------|---------------|--------|-----------|------|
| Chloride | 18.32 | 0.50 | 20 | 0 | 91.6 | 90-110 | 18.21 | 0.58 | 20 | |
| Fluoride | 3.754 | 0.10 | 4 | 0 | 93.8 | 90-110 | 3.744 | 0.267 | 20 | |
| Nitrogen, Nitrate (As N) | 4.127 | 0.10 | 4 | 0 | 103 | 90-110 | 4.095 | 0.778 | 20 | |
| Nitrogen, Nitrite (As N) | 4.079 | 0.10 | 4 | 0 | 102 | 90-110 | 4.064 | 0.368 | 20 | |
| Nitrate/Nitrite (as N) | 8.206 | 0.20 | 8 | 0 | 103 | 90-110 | 8.159 | 0.574 | 20 | |
| <i>Surr: Selenate (surr)</i> | 5.534 | 0.10 | 5 | 0 | 111 | 85-115 | 5.535 | 0.0181 | 20 | |

MS Sample ID: **1109309-01ZMS** Units: **mg/L** Analysis Date: **9/10/2011 05:56 PM**

Client ID: Run ID: **ICS3000_110910B** SeqNo: **2522638** Prep Date: DF: **1**

| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Chloride | 11.68 | 0.50 | 10 | 2.333 | 93.4 | 80-120 | 0 | | | |
| Fluoride | 1.839 | 0.10 | 2 | 0 | 92 | 80-120 | 0 | | | |
| Nitrogen, Nitrate (As N) | 2.13 | 0.10 | 2 | 0.078 | 103 | 80-120 | 0 | | | |
| Nitrogen, Nitrite (As N) | 2.093 | 0.10 | 2 | 0 | 105 | 80-120 | 0 | | | |
| Nitrate/Nitrite (as N) | 4.223 | 0.20 | 4 | 0.078 | 104 | 80-120 | 0 | | | |
| <i>Surr: Selenate (surr)</i> | 5.062 | 0.10 | 5 | 0 | 101 | 85-115 | 0 | | | |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R115958** Instrument ID **ICS3000** Method: **E300**

| MSD | | Sample ID: 1109309-01ZMSD | | | | Units: mg/L | | Analysis Date: 9/10/2011 06:17 PM | | |
|------------------------------|--------------|----------------------------------|----------|---------------|------------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: ICS3000_110910B | | | | SeqNo: 2522639 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Chloride | 11.68 | 0.50 | 10 | 2.333 | 93.5 | 80-120 | 11.68 | 0.0599 | 20 | |
| Fluoride | 1.848 | 0.10 | 2 | 0 | 92.4 | 80-120 | 1.839 | 0.488 | 20 | |
| Nitrogen, Nitrate (As N) | 2.138 | 0.10 | 2 | 0.078 | 103 | 80-120 | 2.13 | 0.375 | 20 | |
| Nitrogen, Nitrite (As N) | 2.101 | 0.10 | 2 | 0 | 105 | 80-120 | 2.093 | 0.381 | 20 | |
| Nitrate/Nitrite (as N) | 4.239 | 0.20 | 4 | 0.078 | 104 | 80-120 | 4.223 | 0.378 | 20 | |
| <i>Surr: Selenate (surr)</i> | <i>5.077</i> | <i>0.10</i> | <i>5</i> | <i>0</i> | <i>102</i> | <i>85-115</i> | <i>5.062</i> | <i>0.296</i> | <i>20</i> | |

The following samples were analyzed in this batch:

| |
|-------------|
| 1109312-01E |
|-------------|

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R116034** Instrument ID **WetChem** Method: **SM4500 S2-F**

| MBLK | | Sample ID: WBLKW1-091211-R116034 | | | | Units: mg/L | | Analysis Date: 9/12/2011 10:50 AM | | |
|------------|--------|---|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110912J | | | | SeqNo: 2523492 | | Prep Date: | | DF: 1 |
| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfide | U | 1.0 | | | | | | | | |

| LCS | | Sample ID: WLCSW1-091211-R116034 | | | | Units: mg/L | | Analysis Date: 9/12/2011 10:50 AM | | |
|------------|--------|---|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110912J | | | | SeqNo: 2523493 | | Prep Date: | | DF: 1 |
| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfide | 23.2 | 1.0 | 25 | 0 | 92.8 | 80-120 | 0 | | | |

| LCSD | | Sample ID: WLCSDW1-091211-R116034 | | | | Units: mg/L | | Analysis Date: 9/12/2011 10:50 AM | | |
|------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110912J | | | | SeqNo: 2523496 | | Prep Date: | | DF: 1 |
| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfide | 22.6 | 1.0 | 25 | 0 | 90.4 | 80-120 | 23.2 | 2.62 | 20 | |

The following samples were analyzed in this batch: 1109312-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R116089** Instrument ID **BALANCE1** Method: **M2540D**

| MBLK | | Sample ID: WBLK-091211-R116089 | | | | Units: mg/L | | Analysis Date: 9/12/2011 01:35 PM | | |
|-----------------------------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: BALANCE1_110912C | | | | SeqNo: 2524416 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Suspended Solids (Residue, Non-Fi | U | 2.0 | | | | | | | | |

| LCS | | Sample ID: WLCS-091211-R116089 | | | | Units: mg/L | | Analysis Date: 9/12/2011 01:35 PM | | |
|-----------------------------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: BALANCE1_110912C | | | | SeqNo: 2524417 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Suspended Solids (Residue, Non-Fi | 85.33 | 2.0 | 100 | 0 | 85.3 | 78-120 | 0 | | | |

| DUP | | Sample ID: 1109268-01DDUP | | | | Units: mg/L | | Analysis Date: 9/12/2011 01:35 PM | | |
|-----------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: BALANCE1_110912C | | | | SeqNo: 2524399 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Suspended Solids (Residue, Non-Fi | 10 | 2.0 | 0 | 0 | 0 | 0-0 | 9.6 | 4.08 | 20 | |

| DUP | | Sample ID: 1109327-08ADUP | | | | Units: mg/L | | Analysis Date: 9/12/2011 01:35 PM | | |
|-----------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: BALANCE1_110912C | | | | SeqNo: 2524414 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Suspended Solids (Residue, Non-Fi | 123.6 | 2.0 | 0 | 0 | 0 | 0-0 | 106.4 | 15 | 20 | |

The following samples were analyzed in this batch: 1109312-01E

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R116099** Instrument ID **WetChem** Method: **M2540C**

| MBLK | | Sample ID: BLANK-R116099 | | | | Units: mg/L | | Analysis Date: 9/12/2011 03:00 PM | | |
|--------------------------------------|--------|---------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110912N | | | | SeqNo: 2524640 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Total Dissolved Solids (Residue, Fil | U | 10 | | | | | | | | |

| LCS | | Sample ID: LCS-R116099 | | | | Units: mg/L | | Analysis Date: 9/12/2011 03:00 PM | | |
|--------------------------------------|--------|--------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110912N | | | | SeqNo: 2524641 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Total Dissolved Solids (Residue, Fil | 950 | 10 | 1000 | 0 | 95 | 85-115 | 0 | | | |

| DUP | | Sample ID: 1109319-01ADUP | | | | Units: mg/L | | Analysis Date: 9/12/2011 03:00 PM | | |
|--------------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110912N | | | | SeqNo: 2524639 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Total Dissolved Solids (Residue, Fil | 464 | 10 | 0 | 0 | 0 | 0-0 | 462 | 0.432 | 20 | |

The following samples were analyzed in this batch:

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
 Work Order: 1109312
 Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R116262** Instrument ID **ICS3000** Method: **E300**

| MBLK | | Sample ID: WBLKW1-091511-R116262 | | | Units: mg/L | | | Analysis Date: 9/15/2011 10:37 AM | | |
|------------------------------|--------|---|---------|---------------|-----------------------|---------------|---------------|--|--------------|------|
| Client ID: | | Run ID: ICS3000_110915A | | | SeqNo: 2527552 | | Prep Date: | | DF: 1 | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfate | U | 0.50 | | | | | | | | |
| <i>Surr: Selenate (surr)</i> | 5.228 | 0.10 | 5 | 0 | 105 | 85-115 | 0 | | | |

| LCS | | Sample ID: WLCSW1-091511-R116262 | | | Units: mg/L | | | Analysis Date: 9/15/2011 10:58 AM | | |
|------------------------------|--------|---|---------|---------------|-----------------------|---------------|---------------|--|--------------|------|
| Client ID: | | Run ID: ICS3000_110915A | | | SeqNo: 2527553 | | Prep Date: | | DF: 1 | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfate | 18.1 | 0.50 | 20 | 0 | 90.5 | 90-110 | 0 | | | |
| <i>Surr: Selenate (surr)</i> | 5.633 | 0.10 | 5 | 0 | 113 | 85-115 | 0 | | | |

| LCSD | | Sample ID: WLCSW1-091511-R116262 | | | Units: mg/L | | | Analysis Date: 9/15/2011 11:19 AM | | |
|------------------------------|--------|---|---------|---------------|-----------------------|---------------|---------------|--|--------------|------|
| Client ID: | | Run ID: ICS3000_110915A | | | SeqNo: 2527554 | | Prep Date: | | DF: 1 | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfate | 18.04 | 0.50 | 20 | 0 | 90.2 | 90-110 | 0 | 0 | 20 | |
| <i>Surr: Selenate (surr)</i> | 5.612 | 0.10 | 5 | 0 | 112 | 85-115 | 0 | 0 | 20 | |

| MS | | Sample ID: 1109388-03KMS | | | Units: mg/L | | | Analysis Date: 9/15/2011 02:13 PM | | |
|------------------------------|--------|---------------------------------|---------|---------------|-----------------------|---------------|---------------|--|--------------|------|
| Client ID: | | Run ID: ICS3000_110915A | | | SeqNo: 2527556 | | Prep Date: | | DF: 1 | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfate | 50.02 | 0.50 | 10 | 41.63 | 83.9 | 80-120 | 0 | | | O |
| <i>Surr: Selenate (surr)</i> | 5.638 | 0.10 | 5 | 0 | 113 | 85-115 | 0 | | | |

| MSD | | Sample ID: 1109388-03KMSD | | | Units: mg/L | | | Analysis Date: 9/15/2011 02:35 PM | | |
|------------------------------|--------|----------------------------------|---------|---------------|-----------------------|---------------|---------------|--|--------------|------|
| Client ID: | | Run ID: ICS3000_110915A | | | SeqNo: 2527557 | | Prep Date: | | DF: 1 | |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Sulfate | 50.06 | 0.50 | 10 | 41.63 | 84.3 | 80-120 | 0 | 0 | 20 | O |
| <i>Surr: Selenate (surr)</i> | 5.613 | 0.10 | 5 | 0 | 112 | 85-115 | 0 | 0 | 20 | |

The following samples were analyzed in this batch: 1109312-01E

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R116275** Instrument ID **TOC_02** Method: **SM5310C**

| MBLK | | Sample ID: WBLKW1-091511-R116275 | | | | Units: mg/L | | Analysis Date: 9/16/2011 12:11 AM | | |
|-----------------------|--------|---|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: TOC_02_110915I | | | | SeqNo: 2527969 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Organic Carbon, Total | U | 0.50 | | | | | | | | |

| LCS | | Sample ID: WLCSW1-091511-R116275 | | | | Units: mg/L | | Analysis Date: 9/16/2011 12:25 AM | | |
|-----------------------|--------|---|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: TOC_02_110915I | | | | SeqNo: 2527970 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Organic Carbon, Total | 8.902 | 0.50 | 10 | 0 | 89 | 80-120 | 0 | | | |

| LCSD | | Sample ID: WLCSDW1-091511-R116275 | | | | Units: mg/L | | Analysis Date: 9/16/2011 12:40 AM | | |
|-----------------------|--------|--|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: TOC_02_110915I | | | | SeqNo: 2527971 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Organic Carbon, Total | 8.931 | 0.50 | 10 | 0 | 89.3 | 80-120 | 8.902 | 0.325 | 20 | |

| MS | | Sample ID: 1109242-01AMSZ | | | | Units: mg/L | | Analysis Date: 9/16/2011 01:09 AM | | |
|-----------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: TOC_02_110915I | | | | SeqNo: 2527973 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Organic Carbon, Total | 11.95 | 0.50 | 10 | 2.34 | 96.1 | 80-120 | 0 | | | |

| MSD | | Sample ID: 1109242-01AMSDZ | | | | Units: mg/L | | Analysis Date: 9/16/2011 01:25 AM | | |
|-----------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: TOC_02_110915I | | | | SeqNo: 2527974 | | Prep Date: | | DF: 1 |
| Analyte | Result | MQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Organic Carbon, Total | 12.02 | 0.50 | 10 | 2.34 | 96.8 | 80-120 | 11.95 | 0.584 | 20 | |

The following samples were analyzed in this batch: 1109312-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Work Order: 1109312
Project: El Paso Smelter

QC BATCH REPORT

Batch ID: **R116332** Instrument ID **WetChem** Method: **SM2320B**

| MBLK | | Sample ID: WBLKW1-091911-R116332 | | | | Units: mg/L | | Analysis Date: 9/19/2011 10:30 AM | | |
|------------------------------|--------|---|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110919A | | | | SeqNo: 2529771 | | Prep Date: | | DF: 1 |
| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Alkalinity, Total (As CaCO3) | U | 5.0 | | | | | | | | |

| LCS | | Sample ID: WLCSW1-091911-R116332 | | | | Units: mg/L | | Analysis Date: 9/19/2011 10:30 AM | | |
|------------------------------|--------|---|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110919A | | | | SeqNo: 2529772 | | Prep Date: | | DF: 1 |
| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Alkalinity, Total (As CaCO3) | 1053 | 5.0 | 1000 | 0 | 105 | 80-120 | 0 | | | |

| DUP | | Sample ID: 1109388-03KDUP | | | | Units: mg/L | | Analysis Date: 9/19/2011 10:30 AM | | |
|------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|--|-----------|--------------|
| Client ID: | | Run ID: WETCHEM_110919A | | | | SeqNo: 2529786 | | Prep Date: | | DF: 1 |
| Analyte | Result | ML | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Alkalinity, Total (As CaCO3) | 194.1 | 5.0 | 0 | 0 | 0 | 0-0 | 0 | 0 | 20 | |

The following samples were analyzed in this batch:

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Malcolm Pirnie
Project: El Paso Smelter
WorkOrder: 1109312

**QUALIFIERS,
ACRONYMS, UNITS**

| <u>Qualifier</u> | <u>Description</u> |
|------------------|---|
| * | Value exceeds Regulatory Limit |
| a | Not accredited |
| B | Analyte detected in the associated Method Blank above the Reporting Limit |
| E | Value above quantitation range |
| H | Analyzed outside of Holding Time |
| J | Analyte detected below quantitation limit |
| M | Manually integrated, see raw data for justification |
| n | Not offered for accreditation |
| ND | Not Detected at the Reporting Limit |
| O | Sample amount is > 4 times amount spiked |
| P | Dual Column results percent difference > 40% |
| R | RPD above laboratory control limit |
| S | Spike Recovery outside laboratory control limits |
| U | Analyzed but not detected above the MDL |

| <u>Acronym</u> | <u>Description</u> |
|----------------|-------------------------------------|
| DCS | Detectability Check Study |
| DUP | Method Duplicate |
| LCS | Laboratory Control Sample |
| LCSD | Laboratory Control Sample Duplicate |
| MBLK | Method Blank |
| MDL | Method Detection Limit |
| MQL | Method Quantitation Limit |
| MS | Matrix Spike |
| MSD | Matrix Spike Duplicate |
| PDS | Post Digestion Spike |
| PQL | Practical Quantitation Limit |
| SD | Serial Dilution |
| SDL | Sample Detection Limit |
| TRRP | Texas Risk Reduction Program |

| <u>Units Reported</u> | <u>Description</u> |
|-----------------------|----------------------|
| mg/L | Milligrams per Liter |



ALS Laboratory Group

10450 Stancliff Rd., Suite 210
Houston, Texas 77099
Tel. +1 281 530 5656
Fax. +1 281 530 5887

Chain of Custody For

1109312

MALCOLM PIRNIE-EL PASO: Malcolm Pirnie

Project: El Paso Smelter

Page 1 of 1



ALS Project Manager:

| Customer Information | | Project Information | | ALS Project Manager: | |
|----------------------|-------------------------------------|---------------------|-------------------------------------|----------------------|--|
| Purchase Order | | Project Name | El Paso Smelter | A | Total & Diss Metals (6020): Sb, As, Ba, Cd, Cr, Co, Cu, Fe, Pb, Mo, Ni, Se, Tl, Zn, Ag |
| Work Order | | Project Number | 6835001 | B | Total & Diss. Hg (7470) |
| Company Name | Malcolm Pirnie | Bill To Company | Malcolm Pirnie | C | Total Cations (6010): Al, Ca, Mg, K, Na, Mn |
| Send Report To | Marla Miller | Invoice Attn | Marla Miller | D | Anions (300.0): Chloride, Sulfate, Nitrate/Nitrite |
| Address | 211 N. Florence Street Suite 202 | Address | 211 N. Florence Street Suite 202 | E | Fluoride (340.2) |
| | | | | F | TDS (160.1) |
| City/State/Zip | El Paso, TX 79901 | City/State/Zip | El Paso, TX 79901 | G | TSS (160.2) |
| Phone | (915) 533-9025 | Phone | (915) 533-9025 | H | TOC (415.1) |
| Fax | (915) 533-9045 | Fax | (915) 533-9045 | I | Sulfide |
| e-Mail Address | | e-Mail Address | | J | Alkalinity |

| No. | Sample Description | Date | Time | Matrix | Pres. | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
|-----|--------------------|--------|-------|--------|-----------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| 1 | QA090911 | 9/9/11 | 10:00 | W | 2,3,4,7,8 | 5 | X | X | X | X | X | X | X | X | X | X | |
| 2 | | | | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | |
| 0 | | | | | | | | | | | | | | | | | |

| | | | | | | | | | |
|--|-----------------|--------------------------|--|---|-----------|-------------|--|---|--|
| Sampler(s) Please Print & Sign | | Shipment Method FEDEX | | Required Turnaround Time: (Check Box) <input type="checkbox"/> Other _____ <input checked="" type="checkbox"/> STD 10 Wk Days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour | | | | Results Due Date: | |
| Relinquished by: <i>Douglas Myjola</i> | Date: 9/9/11 | Time: 1400 | Received by: <i>[Signature]</i> | | Notes: | | | | |
| Relinquished by: | Date: | Time: | Received by (Laboratory): <i>[Signature]</i> 9/10/11 1107 | | Cooler ID | Cooler Temp | QC Package: (Check One Box Below) | | |
| Logged by (Laboratory): | Date: | Time: | Checked by (Laboratory): | | | | <input type="checkbox"/> Level II Std QC | <input type="checkbox"/> TRRP Checklist | |
| Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035 | | | | | | | <input type="checkbox"/> Level III Std QC/Raw Data | <input type="checkbox"/> TRRP Level IV | |
| | | | | | | | <input type="checkbox"/> Level IV SW846/CLP | <input type="checkbox"/> Other _____ | |

1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Laboratory Group.
 2. Unless otherwise agreed in a formal contract, services provided by ALS Laboratory Group are expressly limited to the terms and conditions stated on the reverse.
 3. The Chain of Custody is a legal document. All information must be completed accurately.

Sample Receipt Checklist

Client Name: MALCOLM PIRNIE-EL PASO

Date/Time Received: 10-Sep-11 11:07

Work Order: 1109312

Received by: RDH

Checklist completed by Robert D. Harris 10-Sep-11
eSignature Date

Reviewed by: Hector Coronado 10-Sep-11
eSignature Date

Matrices: waters

Carrier name: FedEx

Shipping container/cooler in good condition? Yes [checked] No [] Not Present []
Custody seals intact on shipping container/cooler? Yes [checked] No [] Not Present []
Custody seals intact on sample bottles? Yes [] No [] Not Present [checked]
Chain of custody present? Yes [checked] No []
Chain of custody signed when relinquished and received? Yes [checked] No []
Chain of custody agrees with sample labels? Yes [checked] No []
Samples in proper container/bottle? Yes [] No [checked]
Sample containers intact? Yes [checked] No []
Sufficient sample volume for indicated test? Yes [checked] No []
All samples received within holding time? Yes [checked] No []
Container/Temp Blank temperature in compliance? Yes [checked] No []
Temperature(s)/Thermometer(s): 1.8c 002
Cooler(s)/Kit(s): 3998
Water - VOA vials have zero headspace? Yes [] No [] No VOA vials submitted [checked]
Water - pH acceptable upon receipt? Yes [checked] No [] N/A []
pH adjusted? Yes [] No [] N/A [checked]
pH adjusted by: []

Login Notes: TOC sample received in a 250PH2SO4 instead of a 250AH2SO4.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments: []

CorrectiveAction: []

1109312

This portion can be removed for recipient's records.

te 9-9-11 FedEx Tracking Number 874841491870


nder's me [Signature] Phone [Signature]

Company [Signature]

Address [Signature] Dept./Floor/Suite/Room [Signature]

[Signature] State TX ZIP 77744

ur Internal Billing Reference [Signature]

| | | | |
|--|-----|--------------------------|-----------------|
|  ALS Environmental 10450 House Tel. +1 Fax. +1 | 250 | CUSTODY SEAL | |
| | | Date: <u>9/9/11</u> | Time: <u>14</u> |
| | | Name: <u>[Signature]</u> | |
| | | Company: <u>MPI</u> | |

| | |
|----|----------------------|
| L | Seal Broken By: |
| 30 | <u>[Signature]</u> |
| | Date: <u>9/10/11</u> |