

**Daily Analysis Runlog For Sequence/QC Batch ID # LB87569**

Review By

SubDirectory

Review On

Test : Cyanide

LB87569

| STD. NAME     |  | STD REF.#                                               |  |  |  |  |
|---------------|--|---------------------------------------------------------|--|--|--|--|
| ICAL Standard |  | WP55056,WP55055,WP55054,WP55053,WP55052,WP55051,WP55050 |  |  |  |  |
| ICV Standard  |  | WP55057                                                 |  |  |  |  |
| CCV Standard  |  | WP55051                                                 |  |  |  |  |
| ICSA Standard |  | N/A                                                     |  |  |  |  |
| CRI Standard  |  | N/A                                                     |  |  |  |  |
| LCS Standard  |  | N/A                                                     |  |  |  |  |
| Chk Standard  |  | WP55042,WP51626,WP53945,WP53908                         |  |  |  |  |

| Sr# | SampleId  | ClientID      | QcType | Date           | Comment | Status |
|-----|-----------|---------------|--------|----------------|---------|--------|
| 1   | S0.0      | S0.0          | CAL1   | 05/19/17 13:32 |         | OK     |
| 2   | S5.0      | S5.0          | CAL2   | 05/19/17 13:32 |         | OK     |
| 3   | S10.0     | S10.0         | CAL3   | 05/19/17 13:32 |         | OK     |
| 4   | S100.0    | S100.0        | CAL4   | 05/19/17 13:32 |         | OK     |
| 5   | S250.0    | S250.0        | CAL5   | 05/19/17 13:32 |         | OK     |
| 6   | S500.0    | S500.0        | CAL6   | 05/19/17 13:32 |         | OK     |
| 7   | ICV       | ICV           | ICV    | 05/19/17 14:05 |         | OK     |
| 8   | ICB       | ICB           | ICB    | 05/19/17 14:05 |         | OK     |
| 9   | CCV001    | CCV001        | CCV    | 05/19/17 14:05 |         | OK     |
| 10  | CCB001    | CCB001        | CCB    | 05/19/17 14:05 |         | OK     |
| 11  | PB99110BL | PBS006        | MB     | 05/19/17 14:05 |         | OK     |
| 12  | I3211-01  | EME-BF001-01  | SAM    | 05/19/17 14:05 |         | OK     |
| 13  | I3211-03D | EME-BF001-01D | DUP    | 05/19/17 14:05 |         | OK     |
| 14  | I3211-02S | EME-BF001-01S | MS     | 05/19/17 14:05 |         | OK     |
| 15  | I3211-04  | EME-BF001-02  | SAM    | 05/19/17 14:05 |         | OK     |
| 16  | I3211-05  | EME-BF002-01  | SAM    | 05/19/17 14:05 |         | OK     |
| 17  | I3211-06  | EME-BF003-01  | SAM    | 05/19/17 14:11 |         | OK     |
| 18  | I3211-07  | EME-BF004-01  | SAM    | 05/19/17 14:11 |         | OK     |
| 19  | I3211-08  | EME-BF005-01  | SAM    | 05/19/17 14:11 |         | OK     |
| 20  | I3211-09  | EME-BF006-01  | SAM    | 05/19/17 14:11 |         | OK     |
| 21  | I3211-10  | EME-BF007-01  | SAM    | 05/19/17 14:11 |         | OK     |



Instrument ID : CN

284 Sheffield Street, Mountainside, New Jersey 07092 Phone : 908 789 8900 Fax : 908 789 8922

**Daily Analysis Runlog For Sequence/QC Batch ID # LB87569**

|                  |        |                                                         |     |                |  |    |
|------------------|--------|---------------------------------------------------------|-----|----------------|--|----|
| Review By        |        | Review On                                               |     |                |  |    |
| SubDirectory     |        | Test : Cyanide                                          |     |                |  |    |
| LB87569          |        |                                                         |     |                |  |    |
| <b>STD. NAME</b> |        | <b>STD REF.#</b>                                        |     |                |  |    |
| ICAL Standard    |        | WP55056,WP55055,WP55054,WP55053,WP55052,WP55051,WP55050 |     |                |  |    |
| ICV Standard     |        | WP55057                                                 |     |                |  |    |
| CCV Standard     |        | WP55051                                                 |     |                |  |    |
| ICSA Standard    |        | N/A                                                     |     |                |  |    |
| CRI Standard     |        | N/A                                                     |     |                |  |    |
| LCS Standard     |        | N/A                                                     |     |                |  |    |
| Chk Standard     |        | WP55042,WP51626,WP53945,WP53908                         |     |                |  |    |
| 22               | CCV002 | CCV002                                                  | CCV | 05/19/17 14:11 |  | OK |
| 23               | CCB002 | CCB002                                                  | CCB | 05/19/17 14:11 |  | OK |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF001-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-01     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 94.6                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.055 | 0.013 | 0.5        | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF001-02 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-04     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 94.3                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.056 | 0.013 | 0.51       | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |

**Report of Analysis**

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF002-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-05     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 93.8                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.057 | 0.013 | 0.52       | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF003-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-06     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 99                    |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.054 | 0.012 | 0.5        | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF004-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-07     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 94.9                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.056 | 0.013 | 0.51       | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF005-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-08     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 94.7                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.055 | 0.013 | 0.5        | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |





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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF006-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-09     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 98.1                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.053 | 0.012 | 0.48       | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF007-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-10     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 95.1                  |

| Cas     | Parameter | Conc. | Qua. | DF | MDL   | LOD   | LOQ / CRQL | Units | Prep Date  | Date Ana.  | Ana Met.   |
|---------|-----------|-------|------|----|-------|-------|------------|-------|------------|------------|------------|
| 57-12-5 | Cyanide   | 0     | U    | 1  | 0.056 | 0.013 | 0.51       | mg/kg | 05/19/2017 | 05/19/2017 | ISM02.4_CN |



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## Report of Analysis

|                   |              |                 |                       |
|-------------------|--------------|-----------------|-----------------------|
| Client:           |              | Date Collected: | 5/17/2017 12:00:00 AM |
| Project:          | LB87569      | Date Received:  | 5/17/2017 12:00:00 AM |
| Client Sample ID: | EME-BF007-01 | SDG No.:        | LB87569               |
| Lab Sample ID:    | I3211-10     | Matrix:         | Solid                 |
| Level (low/med):  | low          | % Solid:        | 95.1                  |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|-----|-----------|-------|------|----|-----|-----|------------|-------|-----------|-----------|----------|
|-----|-----------|-------|------|----|-----|-----|------------|-------|-----------|-----------|----------|

Color Before:

Clarity Before:

Texture:

Color After:

Clarity After:

Artifacts:

Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

D = Dilution

Q = indicates LCS control criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

\* = indicates the duplicate analysis is not within control limits.

E = Indicates the reported value is estimated because of the presence of interference.

OR = Over Range

N =Spiked sample recovery not within control limits



**Metals**  
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**SAMPLE PREPARATION SUMMARY**

**Client:** LB87569 **SDG No.:** LB87569  
**Contract:**                      **Lab Code:** CHEM **Method:**                       
**Case No.:** LB87569 **SAS No.:** LB87569

|                              |               |                |        |            | Initial<br>Sample<br>Size(g) | Final Sample<br>Volume (mL) | Percent<br>Solids |
|------------------------------|---------------|----------------|--------|------------|------------------------------|-----------------------------|-------------------|
| Sample ID                    | Client ID     | Sample<br>Type | Matrix | Prep Date  |                              |                             |                   |
| <b>Batch Number: PB99110</b> |               |                |        |            |                              |                             |                   |
| PB99110BL                    | PBS006        | MB             | SOLID  | 05/19/2017 | 1.02                         | 50.0                        | 100.00            |
| I3211-01                     | EME-BF001-01  | SAM            | SOLID  | 05/19/2017 | 1.05                         | 50.0                        | 94.60             |
| I3211-03D                    | EME-BF001-01D | DUP            | SOLID  | 05/19/2017 | 1.05                         | 50.0                        | 94.60             |
| I3211-02S                    | EME-BF001-01S | MS             | SOLID  | 05/19/2017 | 1.06                         | 50.0                        | 94.60             |
| I3211-04                     | EME-BF001-02  | SAM            | SOLID  | 05/19/2017 | 1.04                         | 50.0                        | 94.30             |
| I3211-05                     | EME-BF002-01  | SAM            | SOLID  | 05/19/2017 | 1.03                         | 50.0                        | 93.80             |
| I3211-06                     | EME-BF003-01  | SAM            | SOLID  | 05/19/2017 | 1.02                         | 50.0                        | 99.00             |
| I3211-07                     | EME-BF004-01  | SAM            | SOLID  | 05/19/2017 | 1.04                         | 50.0                        | 94.90             |
| I3211-08                     | EME-BF005-01  | SAM            | SOLID  | 05/19/2017 | 1.05                         | 50.0                        | 94.70             |
| I3211-09                     | EME-BF006-01  | SAM            | SOLID  | 05/19/2017 | 1.06                         | 50.0                        | 98.10             |
| I3211-10                     | EME-BF007-01  | SAM            | SOLID  | 05/19/2017 | 1.04                         | 50.0                        | 95.10             |

FORM 15-IN  
INITIAL CALIBRATION

Lab Name: LB87569 Contract: \_\_\_\_\_  
Lab Code: CHEM Case No.: LB87569 MA No.: \_\_\_\_\_ SDG No.: LB87569  
Instrument ID: CN Start Date: 05/19/2017  
Analytical Method: \_\_\_\_\_ Run Batch: LB87569.mdb  
Concentration Units: ug/L

| Analyte | True | Found | %D | True | Found | %D  | True | Found | %D  |
|---------|------|-------|----|------|-------|-----|------|-------|-----|
| Cyanide | 0    | 0     | 0  | 5    | 4.1   | -18 | 10   | 8.9   | -11 |

FORM 15-IN  
INITIAL CALIBRATION

Lab Name: LB87569 Contract: \_\_\_\_\_  
Lab Code: CHEM Case No.: LB87569 MA No.: \_\_\_\_\_ SDG No.: LB87569  
Instrument ID: CN Start Date: 05/19/2017  
Analytical Method: \_\_\_\_\_ Run Batch: LB87569.mdb  
Concentration Units: ug/L

| Analyte | True | Found | %D | True | Found | %D | True | Found | %D |
|---------|------|-------|----|------|-------|----|------|-------|----|
| Cyanide | 100  | 101   | 1  | 250  | 253   | 1  | 500  | 498   | 0  |



**Metals**

**- 2a -**

**INITIAL AND CONTINUING CALIBRATION VERIFICATION**

**Client:** LB87569

**SDG No.:** LB87569

**Contract:** \_\_\_\_\_ **Lab Code:** CHEM

**Case No.:** LB87569

**SAS No.:** LB87569

**Initial Calibration Source:** \_\_\_\_\_

**Continuing Calibration Source:** \_\_\_\_\_

---

| Sample ID | Analyte | Result | True Value | % Recovery | % RSD | Acceptance Window (%R) | M  | Analysis Date | Analysis Time | Run Number |
|-----------|---------|--------|------------|------------|-------|------------------------|----|---------------|---------------|------------|
|           |         | ug/L   |            |            |       |                        |    |               |               |            |
| ICV       | Cyanide | 97.0   | 99         | 98         | 0     | 85 - 115               | CN | 05/19/2017    | 14:05         | LB87569    |

---



## Metals

- 2a -

### INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB87569

SDG No.: LB87569

Contract: \_\_\_\_\_ Lab Code: CHEM

Case No.: LB87569

SAS No.: LB87569

Initial Calibration Source: \_\_\_\_\_

Continuing Calibration Source: \_\_\_\_\_

| Sample ID | Analyte | Result<br>ug/L | True Value | %<br>Recovery | %<br>RSD | Acceptance<br>Window (%R) | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|------------|---------------|----------|---------------------------|----|------------------|------------------|---------------|
| CCV001    | Cyanide | 239            | 250        | 96            | 0        | 85 - 115                  | CN | 05/19/2017       | 14:05            | LB87569       |
| CCV002    | Cyanide | 247            | 250        | 99            | 0        | 85 - 115                  | CN | 05/19/2017       | 14:11            | LB87569       |





**Metals**

**- 3a -**

**INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY**

**Client:** LB87569 **SDG No.:** LB87569  
**Contract:**                      **Lab Code:** CHEM **Case No.:** LB87569 **SAS No.:** LB87569

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | LOD | CRQL | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|-----|------|----|------------------|------------------|---------------|
| ICB       | Cyanide | 0.29           | +/-10.0             | U            | 5.0 | 10.0 | CN | 05/19/2017       | 14:05            | LB87569       |



## Metals

- 3a -

### INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** LB87569

SDG No.: LB87569

**Contract:**

Lab Code: CHEM

**Case No.:** LB87569

**SAS No.:** LB87569

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | LOD | CRQL | M  | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|-----|------|----|------------------|------------------|---------------|
| CCB001    | Cyanide | 0.14           | +/-10.0             | U            | 5.0 | 10.0 | CN | 05/19/2017       | 14:05            | LB87569       |
| CCB002    | Cyanide | 0.024          | +/-10.0             | U            | 5.0 | 10.0 | CN | 05/19/2017       | 14:11            | LB87569       |



Metals

- 3a -

INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB87569

SDG No.: LB87569

Contract: Lab Code: CHEM

Case No.: LB87569

SAS No.: LB87569

| Sample ID | Analyte | Result<br>ug/L | Acceptance<br>Limit | Conc<br>Qual | LOD | CRQL | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|---------|----------------|---------------------|--------------|-----|------|---|------------------|------------------|---------------|
|-----------|---------|----------------|---------------------|--------------|-----|------|---|------------------|------------------|---------------|



SDG No.: LB87569

| Sample ID | Analyte | Result<br>(mg/kg) | Acceptance<br>Limit | Conc<br>Qual  | LOD<br>mg/kg | CRQL<br>mg/kg | M  | Analysis<br>Date | Analysis<br>Time | Run     |
|-----------|---------|-------------------|---------------------|---------------|--------------|---------------|----|------------------|------------------|---------|
| PB99110BL |         | SOLID             |                     | Batch Number: |              | PB99110       |    | Prep Date:       | 05/19/2017       |         |
|           | Cyanide | 0.054             | <0.49               | U             | 0.012        | 0.49          | CN | 05/19/2017       | 14:05            | LB87569 |



metals  
- 5a -  
MATRIX SPIKE SUMMARY

client: LB87569 level: low sdg no.: LB87569  
contract: lab code: CHEM case no.: LB87569 sas no.: LB87569  
matrix: Solid sample id: I3211-01 client id: EME-BF001-01S  
Percent Solids for Sample: 94.6 Spiked ID: I3211-02S Percent Solids for Spike Sample: 94.6

| Analyte | Units | Acceptance<br>Limit %R | Spiked<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|---------|-------|------------------------|------------------|---|------------------|---|----------------|---------------|------|----|
| Cyanide | mg/kg | 75 - 125               | 4.2              |   | 0.5              | U | 5              | 84            |      | CN |

# Metals

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## DUPLICATE SAMPLE SUMMARY

**Client:** LB87569      **Level:** LOW      **SDG No.:** LB87569  
**Contract:**                           **Lab Code:** CHEM      **Case No.:** LB87569      **SAS No.:** LB87569  
**Matrix:** Solid      **Sample ID:** I3211-01      **Client ID:** EME-BF001-01D  
**Percent Solids for Sample:** 94.6      **Duplicate ID** I3211-03D      **Percent Solids for Spike Sample:** 94.6

| Analyte | Units | Acceptance<br>Limit | Sample<br>Result | C | Duplicate<br>Result | C | RPD | Qual | M  |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|----|
| Cyanide | mg/kg | 20                  | 0.5              | U |                     | 0 | U   |      | CN |