

**Daily Analysis Runlog For Sequence/QC Batch ID # LB89651**

|               |             |                                                         |        |                 |         |        |
|---------------|-------------|---------------------------------------------------------|--------|-----------------|---------|--------|
| Review By     |             | Review On                                               |        |                 |         |        |
| SubDirectory  |             | LB89651                                                 |        | Test :   Anions |         |        |
| STD. NAME     |             | STD REF.#                                               |        |                 |         |        |
| ICAL Standard |             | WP56996,WP56997,WP56998,WP56999,WP57000,WP57001,WP57002 |        |                 |         |        |
| ICV Standard  |             | WP57003                                                 |        |                 |         |        |
| CCV Standard  |             | WP57404                                                 |        |                 |         |        |
| ICSA Standard |             | N/A                                                     |        |                 |         |        |
| CRI Standard  |             | N/A                                                     |        |                 |         |        |
| LCS Standard  |             | WP57409                                                 |        |                 |         |        |
| Chk Standard  |             | WP57004,WP57005                                         |        |                 |         |        |
| Sr#           | SampleID    | ClientID                                                | QcType | Date            | Comment | Status |
| 1             | STD1        | STD1                                                    | CAL1   | 08/07/17 11:59  |         | OK     |
| 2             | STD2        | STD2                                                    | CAL2   | 08/07/17 12:30  |         | OK     |
| 3             | STD3        | STD3                                                    | CAL3   | 08/07/17 13:01  |         | OK     |
| 4             | STD4        | STD4                                                    | CAL4   | 08/07/17 13:31  |         | OK     |
| 5             | STD5        | STD5                                                    | CAL5   | 08/07/17 14:02  |         | OK     |
| 6             | STD6        | STD6                                                    | CAL6   | 08/07/17 14:33  |         | OK     |
| 7             | STD7        | STD7                                                    | CAL7   | 08/07/17 15:04  |         | OK     |
| 8             | ICV1        | ICV1                                                    | ICV    | 08/07/17 17:11  |         | OK     |
| 9             | ICB1        | ICB1                                                    | ICB    | 08/07/17 17:42  |         | OK     |
| 10            | CCV1        | CCV1                                                    | CCV    | 08/22/17 15:19  |         | OK     |
| 11            | CCB1        | CCB1                                                    | CCB    | 08/22/17 15:51  |         | OK     |
| 12            | LB89651BLW  | LB89651BLW                                              | MB     | 08/22/17 16:22  |         | OK     |
| 13            | LB89651BSW  | LB89651BSW                                              | LCS    | 08/22/17 16:53  |         | OK     |
| 14            | I4923-01    | SB04-GW                                                 | SAM    | 08/22/17 17:24  |         | OK     |
| 15            | I4923-01DUP | SB04-GWDUP                                              | DUP    | 08/22/17 17:55  |         | OK     |
| 16            | I4923-01MS  | SB04-GWMS                                               | MS     | 08/22/17 18:26  |         | OK     |
| 17            | I4923-02    | SB01-GW                                                 | SAM    | 08/22/17 18:57  |         | OK     |
| 18            | CCV2        | CCV2                                                    | CCV    | 08/22/17 19:28  |         | OK     |
| 19            | CCB2        | CCB2                                                    | CCB    | 08/22/17 19:59  |         | OK     |



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

## Report of Analysis

|                   |          |                 |                       |
|-------------------|----------|-----------------|-----------------------|
| Client:           |          | Date Collected: | 8/22/2017 12:00:00 AM |
| Project:          | LB89651  | Date Received:  | 8/22/2017 12:00:00 AM |
| Client Sample ID: | SB04-GW  | SDG No.:        | LB89651               |
| Lab Sample ID:    | I4923-01 | Matrix:         | WATER                 |
| Level (low/med):  | low      | % Solid:        | 0                     |

| Cas | Parameter         | Conc. | Qua. | DF | MDL   | LOD | LOQ / CRQL | Units | Prep Date | Date Ana.  | Ana Met. |
|-----|-------------------|-------|------|----|-------|-----|------------|-------|-----------|------------|----------|
|     | Bromide           | 0.71  |      | 1  | 0.066 |     | 0.5        | mg/L  |           | 08/22/2017 | 300.0    |
|     | Chloride          | 135   | OR   | 1  | 0.075 |     | 0.15       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Fluoride          | 0.31  |      | 1  | 0.043 |     | 0.1        | mg/L  |           | 08/22/2017 | 300.0    |
|     | Nitrate           | 0     | U    | 1  | 0.027 |     | 0.13       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Nitrite           | 0     | U    | 1  | 0.022 |     | 0.15       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Phosphorus, Ortho | 0     | U    | 1  | 0.01  |     | 0.25       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Sulfate           | 32.9  |      | 1  | 0.13  |     | 0.75       | mg/L  |           | 08/22/2017 | 300.0    |



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## Report of Analysis

|                   |          |                 |                       |
|-------------------|----------|-----------------|-----------------------|
| Client:           |          | Date Collected: | 8/22/2017 12:00:00 AM |
| Project:          | LB89651  | Date Received:  | 8/22/2017 12:00:00 AM |
| Client Sample ID: | SB01-GW  | SDG No.:        | LB89651               |
| Lab Sample ID:    | I4923-02 | Matrix:         | WATER                 |
| Level (low/med):  | low      | % Solid:        | 0                     |

| Cas | Parameter         | Conc.  | Qua. | DF | MDL   | LOD | LOQ / CRQL | Units | Prep Date | Date Ana.  | Ana Met. |
|-----|-------------------|--------|------|----|-------|-----|------------|-------|-----------|------------|----------|
|     | Bromide           | 0.82   |      | 1  | 0.066 |     | 0.5        | mg/L  |           | 08/22/2017 | 300.0    |
|     | Chloride          | 65.8   | OR   | 1  | 0.075 |     | 0.15       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Fluoride          | 0.42   |      | 1  | 0.043 |     | 0.1        | mg/L  |           | 08/22/2017 | 300.0    |
|     | Nitrate           | 1.1    |      | 1  | 0.027 |     | 0.13       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Nitrite           | 0      | U    | 1  | 0.022 |     | 0.15       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Phosphorus, Ortho | -0.032 | U    | 1  | 0.01  |     | 0.25       | mg/L  |           | 08/22/2017 | 300.0    |
|     | Sulfate           | 15     |      | 1  | 0.13  |     | 0.75       | mg/L  |           | 08/22/2017 | 300.0    |



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## Report of Analysis

|                   |          |                 |                       |
|-------------------|----------|-----------------|-----------------------|
| Client:           |          | Date Collected: | 8/22/2017 12:00:00 AM |
| Project:          | LB89651  | Date Received:  | 8/22/2017 12:00:00 AM |
| Client Sample ID: | SB01-GW  | SDG No.:        | LB89651               |
| Lab Sample ID:    | I4923-02 | Matrix:         | WATER                 |
| Level (low/med):  | low      | % Solid:        | 0                     |

| 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



## GENCHEM

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### INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB89651

SDG No.: LB89651

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

Case No.: LB89651

SAS No.: LB89651

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

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

| Sample ID | Analyte           | Result<br>mg/L | True Value | %<br>Recovery | %<br>RSD | Acceptance<br>Window (%R) | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|-------------------|----------------|------------|---------------|----------|---------------------------|---|------------------|------------------|---------------|
| ICV1      | Bromide           | 10             | 10         | 100           | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |
|           | Chloride          | 3              | 3          | 100           | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |
|           | Fluoride          | 2.1            | 2          | 105           | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |
|           | Phosphorus, Ortho | 5.3            | 5          | 106           | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |
|           | Nitrite           | 3              | 3          | 100           | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |
|           | Nitrate           | 2.5            | 2.5        | 100           | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |
|           | Sulfate           | 14.8           | 15         | 98.7          | 0        | 90 - 110                  |   | 08/07/2017       | 17:11            | LB89651       |



## GENCHEM

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### INITIAL AND CONTINUING CALIBRATION VERIFICATION

Client: LB89651

SDG No.: LB89651

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

Case No.: LB89651

SAS No.: LB89651

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

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

| Sample ID | Analyte           | Result<br>mg/L | True Value | %<br>Recovery | %<br>RSD | Acceptance<br>Window (%R) | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|-------------------|----------------|------------|---------------|----------|---------------------------|---|------------------|------------------|---------------|
| CCV1      | Bromide           | 10             | 10         | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
|           | Chloride          | 3              | 3          | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
|           | Fluoride          | 2              | 2          | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
|           | Phosphorus, Ortho | 4.7            | 5          | 94            | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
|           | Nitrite           | 3              | 3          | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
|           | Nitrate           | 2.5            | 2.5        | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
|           | Sulfate           | 14.7           | 15         | 98            | 0        | 90 - 110                  |   | 08/22/2017       | 15:19            | LB89651       |
| CCV2      | Bromide           | 10             | 10         | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |
|           | Chloride          | 3              | 3          | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |
|           | Fluoride          | 2              | 2          | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |
|           | Phosphorus, Ortho | 5.4            | 5          | 108           | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |
|           | Nitrite           | 3              | 3          | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |
|           | Nitrate           | 2.5            | 2.5        | 100           | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |
|           | Sulfate           | 14.8           | 15         | 98.7          | 0        | 90 - 110                  |   | 08/22/2017       | 19:28            | LB89651       |



**GENCHEM**

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### INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** LB89651

SDG No.: LB89651

Contract: Lab Code: CHEM

**Case No.:** LB89651

**SAS No.:** LB89651

| Sample ID | Analyte           | Result<br>mg/L | Acceptance<br>Limit | Conc<br>Qual | LOD | CRQL | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|-------------------|----------------|---------------------|--------------|-----|------|---|------------------|------------------|---------------|
| ICB1      | Bromide           | 0.066          | +/-0.5              | U            |     | 0.5  |   | 08/07/2017       | 17:42            | LB89651       |
|           | Chloride          | 0.075          | +/-0.15             | U            |     | 0.15 |   | 08/07/2017       | 17:42            | LB89651       |
|           | Fluoride          | 0.043          | +/-0.1              | U            |     | 0.1  |   | 08/07/2017       | 17:42            | LB89651       |
|           | Phosphorus, Ortho | 0.01           | +/-0.25             | U            |     | 0.25 |   | 08/07/2017       | 17:42            | LB89651       |
|           | Nitrite           | 0.022          | +/-0.15             | U            |     | 0.15 |   | 08/07/2017       | 17:42            | LB89651       |
|           | Nitrate           | 0.027          | +/-0.13             | U            |     | 0.13 |   | 08/07/2017       | 17:42            | LB89651       |
|           | Sulfate           | 0.13           | +/-0.75             | U            |     | 0.75 |   | 08/07/2017       | 17:42            | LB89651       |



**GENCHEM**

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### INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** LB89651

SDG No.: LB89651

**Contract:**

**Lab Code:** CHEM

**Case No.:** LB89651

**SAS No.:** LB89651

| Sample ID | Analyte           | Result<br>mg/L | Acceptance<br>Limit | Conc<br>Qual | LOD | CRQL | M | Analysis<br>Date | Analysis<br>Time | Run<br>Number |
|-----------|-------------------|----------------|---------------------|--------------|-----|------|---|------------------|------------------|---------------|
| CCB1      | Bromide           | 0.066          | +/-0.5              | U            |     | 0.5  |   | 08/22/2017       | 15:51            | LB89651       |
|           | Chloride          | 0.075          | +/-0.15             | U            |     | 0.15 |   | 08/22/2017       | 15:51            | LB89651       |
|           | Fluoride          | 0.043          | +/-0.1              | U            |     | 0.1  |   | 08/22/2017       | 15:51            | LB89651       |
|           | Phosphorus, Ortho | 0.01           | +/-0.25             | U            |     | 0.25 |   | 08/22/2017       | 15:51            | LB89651       |
|           | Nitrite           | 0.022          | +/-0.15             | U            |     | 0.15 |   | 08/22/2017       | 15:51            | LB89651       |
|           | Nitrate           | 0.027          | +/-0.13             | U            |     | 0.13 |   | 08/22/2017       | 15:51            | LB89651       |
|           | Sulfate           | 0.13           | +/-0.75             | U            |     | 0.75 |   | 08/22/2017       | 15:51            | LB89651       |
| CCB2      | Bromide           | 0.066          | +/-0.5              | U            |     | 0.5  |   | 08/22/2017       | 19:59            | LB89651       |
|           | Chloride          | 0.075          | +/-0.15             | U            |     | 0.15 |   | 08/22/2017       | 19:59            | LB89651       |
|           | Fluoride          | 0.043          | +/-0.1              | U            |     | 0.1  |   | 08/22/2017       | 19:59            | LB89651       |
|           | Phosphorus, Ortho | 0.01           | +/-0.25             | U            |     | 0.25 |   | 08/22/2017       | 19:59            | LB89651       |
|           | Nitrite           | 0.022          | +/-0.15             | U            |     | 0.15 |   | 08/22/2017       | 19:59            | LB89651       |
|           | Nitrate           | 0.027          | +/-0.13             | U            |     | 0.13 |   | 08/22/2017       | 19:59            | LB89651       |
|           | Sulfate           | 0.13           | +/-0.75             | U            |     | 0.75 |   | 08/22/2017       | 19:59            | LB89651       |



GENCHEM

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INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

Client: LB89651

SDG No.: LB89651

Contract: Lab Code: CHEM

Case No.: LB89651

SAS No.: LB89651

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



**GENCHEM**  
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**PREPARATION BLANK SUMMARY**

**Client:** LB89651

**SDG No.:** LB89651

**Instrument:** IC-2

| Sample ID         | Analyte           | Result<br>(mg/L) | Acceptance<br>Limit | Conc<br>Qual         | LOD<br>mg/L | CRQL<br>mg/L | M | Analysis<br>Date  | Analysis<br>Time | Run     |
|-------------------|-------------------|------------------|---------------------|----------------------|-------------|--------------|---|-------------------|------------------|---------|
| <b>LB89651BLW</b> |                   | <b>WATER</b>     |                     | <b>Batch Number:</b> |             |              |   | <b>Prep Date:</b> |                  |         |
|                   | Bromide           | 0.066            | <0.5                | U                    |             | 0.5          |   | 08/22/2017        | 16:22            | LB89651 |
|                   | Chloride          | 0.075            | <0.15               | U                    |             | 0.15         |   | 08/22/2017        | 16:22            | LB89651 |
|                   | Fluoride          | 0.043            | <0.1                | U                    |             | 0.1          |   | 08/22/2017        | 16:22            | LB89651 |
|                   | Phosphorus, Ortho | 0.01             | <0.25               | U                    |             | 0.25         |   | 08/22/2017        | 16:22            | LB89651 |
|                   | Nitrite           | 0.022            | <0.15               | U                    |             | 0.15         |   | 08/22/2017        | 16:22            | LB89651 |
|                   | Nitrate           | 0.027            | <0.13               | U                    |             | 0.13         |   | 08/22/2017        | 16:22            | LB89651 |
|                   | Sulfate           | 0.13             | <0.75               | U                    |             | 0.75         |   | 08/22/2017        | 16:22            | LB89651 |



GENCHEM  
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MATRIX SPIKE SUMMARY

client: LB89651 level: low sdg no.: LB89651  
contract: lab code: CHEM case no.: LB89651 sas no.: LB89651  
matrix: WATER sample id: I4923-01 client id: SB04-GWMS  
Percent Solids for Sample: 0 Spiked ID: I4923-01MS Percent Solids for Spike Sample: 0

| Analyte           | Units | Acceptance<br>Limit %R | Spiked<br>Result | C  | Sample<br>Result | C  | Spike<br>Added | %<br>Recovery | Qual | M |
|-------------------|-------|------------------------|------------------|----|------------------|----|----------------|---------------|------|---|
| Bromide           | mg/L  | 80 - 120               | 10.7             |    | 0.71             |    | 10             | 100           |      |   |
| Chloride          | mg/L  | 80 - 120               | 127              | OR | 135              | OR | 3              | -267          | *    |   |
| Fluoride          | mg/L  | 80 - 120               | 2.2              |    | 0.31             |    | 2              | 95            |      |   |
| Phosphorus, Ortho | mg/L  | 80 - 120               | 5.3              |    | 0.01             | U  | 5              | 106           |      |   |
| Nitrite           | mg/L  | 80 - 120               | 3                |    | 0.022            | U  | 3              | 100           |      |   |
| Nitrate           | mg/L  | 80 - 120               | 2.6              |    | 0.027            | U  | 2.5            | 104           |      |   |
| Sulfate           | mg/L  | 80 - 120               | 89.9             | OR | 32.9             |    | 15             | 380           | *    |   |

# GENCHEM

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## DUPLICATE SAMPLE SUMMARY

**Client:** LB89651      **Level:** LOW      **SDG No.:** LB89651  
**Contract:** \_\_\_\_\_      **Lab Code:** CHEM      **Case No.:** LB89651      **SAS No.:** LB89651  
**Matrix:** WATER      **Sample ID:** I4923-01      **Client ID:** SB04-GWDUP  
**Percent Solids for Sample:** 0      **Duplicate ID** I4923-01DUP      **Percent Solids for Spike Sample:** 0

| Analyte           | Units | Acceptance Limit | Sample Result | C  | Duplicate Result | C  | RPD | Qual | M |
|-------------------|-------|------------------|---------------|----|------------------|----|-----|------|---|
| Bromide           | mg/L  | 20               | 0.71          |    | 0.71             |    | 0   |      |   |
| Chloride          | mg/L  | 20               | 135           | OR | 135              | OR | 0   |      |   |
| Fluoride          | mg/L  | 20               | 0.31          |    | 0.31             |    | 0   |      |   |
| Phosphorus, Ortho | mg/L  | 20               | 0.01          | U  | 0                | U  |     |      |   |
| Nitrite           | mg/L  | 20               | 0.022         | U  | 0                | U  |     |      |   |
| Nitrate           | mg/L  | 20               | 0.027         | U  | 0                | U  |     |      |   |
| Sulfate           | mg/L  | 20               | 32.9          |    | 32.9             |    | 0   |      |   |



## GENCHEM

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### LABORATORY CONTROL SAMPLE SUMMARY

Client: LB89651

SDG No.: LB89651

Contract:                     

Lab Code: CHEM

Case No.: LB89651

SAS No.: LB89651

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| Analyte           | Units | True Value | Result | C | %<br>Recovery | Acceptance<br>Limits | M |
|-------------------|-------|------------|--------|---|---------------|----------------------|---|
| LB89651BSW        |       |            |        |   |               |                      |   |
| Bromide           | mg/L  | 10         | 9.8    |   | 98            | 90 - 110             |   |
| Chloride          | mg/L  | 3          | 2.9    |   | 96.7          | 90 - 110             |   |
| Fluoride          | mg/L  | 2          | 2      |   | 100           | 90 - 110             |   |
| Phosphorus, Ortho | mg/L  | 5          | 5      |   | 100           | 90 - 110             |   |
| Nitrite           | mg/L  | 3          | 2.9    |   | 96.7          | 90 - 110             |   |
| Nitrate           | mg/L  | 2.5        | 2.4    |   | 96            | 90 - 110             |   |
| Sulfate           | mg/L  | 15         | 14.5   |   | 96.7          | 90 - 110             |   |

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