CHEMTECH

# GENCHEM

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

**Initial Calibration Source:**

**Continuing Calibration Source:**

| Sample ID | Analyte | Result mg/L | True Value | % Recovery | % RSD | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| ICV1 | Ammonia as N | 0.91 | 1 | 91 | 0 | 90 - 110 | | 06/30/2017 | 20:04 | LB88485 |

CHEMTECH

# GENCHEM

## - 2a -

## INITIAL AND CONTINUING CALIBRATION VERIFICATION

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

**Initial Calibration Source:**

**Continuing Calibration Source:**

| Sample ID | Analyte | Result mg/L | True Value | % Recovery | % RSD | Acceptance Window (%R) | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| CCV1 | Ammonia as N | 0.91 | 1 | 91 | 0 | 90 - 110 | | 06/30/2017 | 20:04 | LB88485 |
| CCV2 | Ammonia as N | 0.92 | 1 | 92 | 0 | 90 - 110 | | 06/30/2017 | 20:14 | LB88485 |
| CCV3 | Ammonia as N | 0.91 | 1 | 91 | 0 | 90 - 110 | | 06/30/2017 | 20:15 | LB88485 |
| CCV4 | Ammonia as N | 0.96 | 1 | 96 | 0 | 90 - 110 | | 06/30/2017 | 20:41 | LB88485 |

CHEMTECH

## GENCHEM

### - 3a -

### INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

| Sample ID | Analyte | Result mg/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| **ICB1** | Ammonia as N | -0.013 | +/-0.1 | U | | 0.1 | | 06/30/2017 | 20:04 | LB88485 |

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# GENCHEM

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

| Sample ID | Analyte | Result mg/L | Acceptance Limit | Conc Qual | LOD | CRQL | M | Analysis Date | Analysis Time | Run Number |
|---|---|---|---|---|---|---|---|---|---|---|
| **CCB1** | Ammonia as N | -0.015 | +/-0.1 | U | | 0.1 | | 06/30/2017 | 20:04 | LB88485 |
| **CCB2** | Ammonia as N | 0.0025 | +/-0.1 | U | | 0.1 | | 06/30/2017 | 20:14 | LB88485 |
| **CCB3** | Ammonia as N | -0.0094 | +/-0.1 | U | | 0.1 | | 06/30/2017 | 20:15 | LB88485 |
| **CCB4** | Ammonia as N | -0.0019 | +/-0.1 | U | | 0.1 | | 06/30/2017 | 20:41 | LB88485 |

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# GENCHEM

## - 3a -

## INITIAL AND CONTINUING CALIBRATION BLANK SUMMARY

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

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

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-1 | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-01 | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 0.11 | | 1 | 0.034 | | 0.1 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-3 | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-02 | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 2.6 | OR | 1 | 0.034 | | 0.1 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-3DL | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-02DL | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 2.6 | D | 2 | 0.068 | | 0.2 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-4 | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-03 | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 2.4 | OR | 1 | 0.034 | | 0.1 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-4DL | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-03DL | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 2.5 | D | 2 | 0.068 | | 0.2 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-2 | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-04 | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 12 | OR | 1 | 0.034 | | 0.1 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/22/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/23/2017 12:00:00 AM |
| Client Sample ID: | MW-2DL | SDG No.: | LB88485 |
| Lab Sample ID: | I3900-04DL | Matrix: | WATER |
| Level (low/med): | low | % Solid: | 0 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 11.8 | D | 10 | 0.34 | | 1 | mg/L | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/28/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/28/2017 12:00:00 AM |
| Client Sample ID: | FK-PS-01-009 | SDG No.: | LB88485 |
| Lab Sample ID: | I3968-01 | Matrix: | Solid |
| Level (low/med): | low | % Solid: | 90.7 |

| Cas | Parameter | Conc. | Qua. | DF | MDL | LOD | LOQ / CRQL | Units | Prep Date | Date Ana. | Ana Met. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ammonia as N | 17.5 | | 1 | 1.8 | | 5.4 | mg/Kg | 06/29/2017 | 06/30/2017 | SM4500-NH3 |

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# Report of Analysis

| | | | |
|---|---|---|---|
| Client: | | Date Collected: | 6/28/2017 12:00:00 AM |
| Project: | LB88485 | Date Received: | 6/28/2017 12:00:00 AM |
| Client Sample ID: | FK-PS-01-009 | SDG No.: | LB88485 |
| Lab Sample ID: | I3968-01 | Matrix: | Solid |
| Level (low/med): | low | % Solid: | 90.7 |

| 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

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**GENCHEM**
**- 3b -**
**PREPARATION BLANK SUMMARY**

**Client:** LB88485 **SDG No.:** LB88485

**Instrument:** Konelab 20

| Sample ID | Analyte | Result (mg/L) | Acceptance Limit | Conc Qual | LOD mg/L | CRQL mg/L | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|---|
| **PB100309BL** | | **WATER** | | **Batch Number:** | | **PB100309** | | **Prep Date:** | **06/29/2017** | |
| | Ammonia as N | -0.014 | <0.1 | U | | 0.1 | | 06/30/2017 | 20:04 | LB88485 |

| Sample ID | Analyte | Result (mg/Kg) | Acceptance Limit | Conc Qual | LOD mg/Kg | CRQL mg/Kg | M | Analysis Date | Analysis Time | Run |
|---|---|---|---|---|---|---|---|---|---|---|
| **PB100310BL** | | **SOLID** | | **Batch Number:** | | **PB100310** | | **Prep Date:** | **06/29/2017** | |
| | Ammonia as N | -0.73 | <4.9 | U | | 4.9 | | 06/30/2017 | 20:04 | LB88485 |

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# GENCHEM
## - 5a -
## MATRIX SPIKE SUMMARY

**client:** LB88485 **level:** low **sdg no.:** LB88485

**contract:** **lab code:** CHEM **case no.:** LB88485 **sas no.:** LB88485

**matrix:** WATER **sample id:** I3900-01 **client id:** MW-1MS

**Percent Solids for Sample:** 0 **Spiked ID:** I3900-01MS **Percent Solids for Spike Sample:** 0

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/L | 75 - 125 | 1.1 | | 0.11 | | 1 | 99 | | |

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# GENCHEM
## - 5a -
## MATRIX SPIKE DUPLICATE SUMMARY

**client:** LB88485 **level:** low **sdg no.:** LB88485

**contract:** **lab code:** CHEM **case no.:** LB88485 **sas no.:** LB88485

**matrix:** WATER **sample id:** I3900-01 **client id:** MW-1MSD

**Percent Solids for Sample:** 0 **Spiked ID:** I3900-01MSD **Percent Solids for Spike Sample:** 0

| Analyte | Units | Acceptance Limit %R | MSD Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/L | 75 - 125 | 1.1 | | 0.11 | | 1 | 99 | | |

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# GENCHEM
## - 5a -
## MATRIX SPIKE SUMMARY

**client:** LB88485 **level:** low **sdg no.:** LB88485

**contract:** **lab code:** CHEM **case no.:** LB88485 **sas no.:** LB88485

**matrix:** Solid **sample id:** I3968-01 **client id:** FK-PS-01-009MS

**Percent Solids for Sample:** 90.7 **Spiked ID:** I3968-01MS **Percent Solids for Spike Sample:** 90.7

| Analyte | Units | Acceptance Limit %R | Spiked Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/Kg | 75 - 125 | 59 | | 17.5 | | 54 | 77 | | |

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# GENCHEM
## - 5a -
## MATRIX SPIKE DUPLICATE SUMMARY

**client:** LB88485 **level:** low **sdg no.:** LB88485

**contract:** **lab code:** CHEM **case no.:** LB88485 **sas no.:** LB88485

**matrix:** Solid **sample id:** I3968-01 **client id:** FK-PS-01-009MSD

**Percent Solids for Sample:** 90.7 **Spiked ID:** I3968-01MSD **Percent Solids for Spike Sample:** 90.7

| Analyte | Units | Acceptance Limit %R | MSD Result | C | Sample Result | C | Spike Added | % Recovery | Qual | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/Kg | 75 - 125 | 58.1 | | 17.5 | | 53.5 | 76 | | |

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# GENCHEM

**- 6 -**

## DUPLICATE SAMPLE SUMMARY

**Client:** LB88485 **Level:** LOW **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

**Matrix:** WATER **Sample ID:** I3900-01 **Client ID:** MW-1DUP

**Percent Solids for Sample:** 0 **Duplicate ID** I3900-01DUP **Percent Solids for Spike Sample:** 0

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/L | 20 | 0.11 | | 0.11 | | 0 | | |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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## GENCHEM

**- 6 -**

## DUPLICATE SAMPLE SUMMARY

**Client:** LB88485 **Level:** LOW **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

**Matrix:** WATER **Sample ID:** I3900-01MS **Client ID:** MW-1MSD

**Percent Solids for Sample:** 0 **Duplicate ID** I3900-01MSD **Percent Solids for Spike Sample:** 0

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/L | 20 | 1.1 | | 1.1 | | 0 | | |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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## GENCHEM

**- 6 -**

## DUPLICATE SAMPLE SUMMARY

**Client:** LB88485 **Level:** LOW **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

**Matrix:** Solid **Sample ID:** I3968-01 **Client ID:** FK-PS-01-009DUP

**Percent Solids for Sample:** 90.7 **Duplicate ID** I3968-01DUP **Percent Solids for Spike Sample:** 90.7

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/Kg | 20 | 17.5 | | 16.9 | | 3 | | |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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## GENCHEM

**- 6 -**

## DUPLICATE SAMPLE SUMMARY

**Client:** LB88485 **Level:** LOW **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

**Matrix:** Solid **Sample ID:** I3968-01MS **Client ID:** FK-PS-01-009MSD

**Percent Solids for Sample:** 90.7 **Duplicate ID** I3968-01MSD **Percent Solids for Spike Sample:** 90.7

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M |
|---|---|---|---|---|---|---|---|---|---|
| Ammonia as N | mg/Kg | 20 | 59 | | 58.1 | | 2 | | |

"A control limit of ±20% RPD for each matrix applies for sample values greater than 10 times Detection Limit"

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## GENCHEM



## LABORATORY CONTROL SAMPLE SUMMARY

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|---|---|---|---|---|---|---|---|
| PB100309BS | | | | | | | |
| Ammonia as N | mg/L | 1 | 0.96 | | 96 | 80 - 120 | |

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## GENCHEM



## LABORATORY CONTROL SAMPLE SUMMARY

**Client:** LB88485 **SDG No.:** LB88485

**Contract:** **Lab Code:** CHEM **Case No.:** LB88485 **SAS No.:** LB88485

| Analyte | Units | True Value | Result | C | % Recovery | Acceptance Limits | M |
|---|---|---|---|---|---|---|---|
| PB100310BS | | | | | | | |
| Ammonia as N | mg/Kg | 48.5 | 44.3 | | 91.3 | 80 - 120 | |