

The order of this data package is as follows:

1. Chain-of-Custody/Lab Request
2. Copies of field COCs
3. Validation Report
4. Laboratory analysis

Comments:

Revised data begins on page 234.

[illegible]

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAWA-17-133290

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|---------------|--------------|----------------------|---------------|---|
| Date Collected (MM/DD/YYYY): | 06/11/2017 | OK | FIELD MATRIX: | WG | OK |
| TIME COLLECTED (HH:MM): | 1337 | OK | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Martin Spring | | FIELD PREP: | UF | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | REG | |
| TOP DEPTH: | | | SAMPLE USAGE: | INV | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO <input checked="" type="checkbox"/> NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|--------------------------|------------------------|---|--------------|---------------|----------------------|
| NA | MSGP-Hg | 1 LITER POLY | 1 | HNO3 | Y | NA |
| | WSP-8330B-NMED HEXMOD | 1 LITER AMBER GLASS | 3 | ICE | | |
| | WSP-CN(T) | 250 ML POLY | 1 | NAOH | | |
| | WSP-TKN+TOC | 500 ML AMBER GLASS | 1 | H2SO4 | | |

SAMPLE COMMENTS: HE spot test yields negative results

LOCATION COMMENTS: km

FIELD PARAMETERS:

| | | | | | | |
|----------------------------------|------|-------|------------------|------|-------------------------|-------|
| Sample Time | 1337 | HH:MM | Dissolved Oxygen | 7.47 | Flow (in gpm) | 0.83 |
| Oxidation-Reduction Potential | NA | | pH | 7.47 | Specific Conductance | 332.7 |
| Temperature | 14.1 | | Turbidity | 3.0 | | |

COLLECTED BY (PRINT): K. Tew T Bonham

| | | | |
|--|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/11/17 1500 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/11/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAWA-17-133318

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|---------------|--------------|----------------------|---------------|---------------|
| Date Collected (MM/DD/YYYY): | 6/1/2017 | OK | FIELD MATRIX: | WG | OK |
| TIME COLLECTED (HH:MM): | 1337 | OK | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Martin Spring | | FIELD PREP: | F | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | REG | |
| TOP DEPTH: | ↓ | | SAMPLE USAGE: | INV | ↓ |
| BOTTOM DEPTH: | ↓ | ↓ | EXCAVATED: | | YES / NO / NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|------------------------------|-----------------------|---|--------------|---------------|----------------------|
| NA | WSP-All Metals | 1 LITER POLY | 1 | HNO3 ICE | Y | NA |
| ↓ | WSP- GENINORG+PerChlorate | 1 LITER POLY | 1 | ICE | ↓ | ↓ |
| ↓ | WSP- NH3+NO3/NO2 | 500 ML AMBER GLASS | 1 | H2SO4 | ↓ | ↓ |

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time _____ HH:MM _____ Dissolved Oxygen _____ Flow (in gpm) _____
 Oxidation-Reduction Potential _____ pH _____ Specific Conductance _____
 Temperature _____ Turbidity _____

COLLECTED BY (PRINT):

K. Taw, T. Bonham

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133353

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------|--------------|----------------------|---------------|---|
| Date Collected (MM/DD/YYYY): | 06/01/2017 | dk | FIELD MATRIX: | WG | dk |
| TIME COLLECTED (HH:MM): | 1145 | dk | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Bulldog Spring | | FIELD PREP: | F | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | REG | |
| TOP DEPTH: | | | SAMPLE USAGE: | INV | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO <input checked="" type="checkbox"/> NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|----------------------------------|-----------------------|---|--------------|---------------|----------------------|
| NA | WSP-All Metals | 1 LITER POLY | 1 | HNO3 ICE | y | NA |
| | WSP- GENINORG+PerChlorat e | 1 LITER POLY | 1 | ICE | | |
| | WSP- NH3+NO3/NO2 | 500 ML AMBER GLASS | 1 | H2SO4 | | |

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time 1145 HH:MM

COLLECTED BY (PRINT): K. Taw D. Hughes

| | | | | | |
|--|-----------------------------------|-----------------------------|--|-----------------------------------|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Katrina Tow <i>[Signature]</i> | Date/Time 6/1/17 1500 | RECEIVED BY (Printed Name) (Signature) | S. Sherwood <i>[Signature]</i> | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | | Date/Time | RECEIVED BY (Printed Name) (Signature) | | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133355

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------|--------------|----------------------|---------------|---------------------|
| Date Collected (MM/DD/YYYY): | 06/01/2017 | ck | FIELD MATRIX: | WG | ck |
| TIME COLLECTED (HH:MM): | 1145 | ck | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Bulldog Spring | | FIELD PREP: | UF | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | REG | |
| TOP DEPTH: | | | SAMPLE USAGE: | INV | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO <i>FNA</i> |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|--------------------------|------------------------|---|--------------|---------------|----------------------|
| NA | MSGP-Hg | 1 LITER POLY | 1 | HNO3 | y | NA |
| | WSP-8330B-NMED HEXMOD | 1 LITER AMBER GLASS | 3 | ICE | | |
| | WSP-CN(T) | 250 ML POLY | 1 | NAOH | | |
| | WSP-TKN+TOC | 500 ML AMBER GLASS | 1 | H2SO4 | | |

SAMPLE COMMENTS: HE spot test yields negative results

 LOCATION COMMENTS: $pH = 7.46$, $Sp (cm) = 210.7$ n/cu $Turb (ntu) 3.5$ $Gpm = 4.68$
 FIELD PARAMETERS: $Temp (C) = 13.8$ $DO (mg/L) = 8.44$

Sample Time 1145 HH:MM

COLLECTED BY (PRINT): KTW T. Bonham

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/1/17 1800 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/1/17 1800 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133357

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------------------------|--------------|----------------------|---------------|---|
| Date Collected (MM/DD/YYYY): | 06/1/2017 | OK | FIELD MATRIX: | WS | OK |
| TIME COLLECTED (HH:MM): | 1015 | OK | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | DC | |
| LOCATION ID: | Paj bel S&N Anch E Basin conf | | FIELD PREP: | UF | |
| LOCATION TYPE: | | | FIELD QC TYPE: | REG | |
| TOP DEPTH: | | | SAMPLE USAGE: | INV | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO <input checked="" type="checkbox"/> NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|--------------------------|------------------------|---|--------------|---------------|----------------------|
| NA | WSP-8330B-NMED HEXMOD | 1 LITER AMBER GLASS | 3 | ICE | Y | NA |
| | WSP-All Metals | 1 LITER POLY | 1 | HNO3 | | |
| | WSP-CN(T) | 250 ML POLY | 1 | NAOH | | |
| | WSP-TKN+TOC | 500 ML AMBER GLASS | 1 | H2SO4 | | |

SAMPLE COMMENTS: none

LOCATION COMMENTS: none

FIELD PARAMETERS: DO: (m/L) 9.0 GPM = 99.9
 Sample Time 1015 HH:MM pH = 8.0, SP cond μ S/cm = 126.4, Turb (NTU) 8.3 Temp $^{\circ}$ C = 12.2

COLLECTED BY (PRINT): K.T.OW T. Barken

| | | | | | |
|--|-------------------|-----------------------------|--|-----------------|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Tanner Barken | Date/Time 6/1/17 1500 | RECEIVED BY (Printed Name) (Signature) | S. Sherwood | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | | Date/Time | RECEIVED BY (Printed Name) (Signature) | | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133358

WORK ORDER:

| | <u>AS PLANNED</u> | <u>AS COLLECTED</u> | | <u>AS PLANNED</u> | <u>AS COLLECTED</u> |
|---------------------------------|----------------------------------|---------------------|----------------------|-----------------------|--------------------------|
| Date Collected (MM/DD/YYYY): | 6/10/2017 | OK | FIELD MATRIX: | WS | OK |
| TIME COLLECTED (HH:MM): | 1015 | OK | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Paj bel S&N Anch E Basin conf | | FIELD PREP: | F | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | REG | |
| TOP DEPTH: | | | SAMPLE USAGE: | INV | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO / NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|----------------------------------|-----------------------|---|--------------|---------------|----------------------|
| NA | WSP-All Metals | 1 LITER POLY | 1 | HNO3 ICE | Y | NA |
| | WSP- GENINORG+PerChlorat e | 1 LITER POLY | 1 | ICE | Y | |
| | WSP- NH3+NO3/NO2 | 500 ML AMBER GLASS | 1 | H2SO4 | Y | |

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time 1015 HH:MM

COLLECTED BY (PRINT): K. Tew, T. Bonham

| | | | |
|--|------------------------------|--|------------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/11/17 1500 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/11/17 1800 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133359

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------------------------|--------------|----------------------|---------------|---------------|
| Date Collected (MM/DD/YYYY): | 06/01/2017 | dk | FIELD MATRIX: | WS | dk |
| TIME COLLECTED (HH:MM): | 1015 | dk | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Paj bel S&N Anch E Basin conf | | FIELD PREP: | F | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | FD | |
| TOP DEPTH: | | | SAMPLE USAGE: | QC | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO / NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|----------------------------------|-----------------------|---|--------------|---------------|----------------------|
| NA | WSP-All Metals | 1 LITER POLY | 1 | HNO3 ICE | Y | NA |
| | WSP- GENINORG+PerChlorat e | 1 LITER POLY | 1 | ICE | | |
| | WSP- NH3+NO3/NO2 | 500 ML AMBER GLASS | 1 | H2SO4 | | |

SAMPLE COMMENTS: nae

LOCATION COMMENTS: nae

FIELD PARAMETERS:

Sample Time 1015 HH:MM

COLLECTED BY (PRINT): K. Tan, T. Barkman

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133360

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------|--------------|----------------------|---------------|---------------|
| Date Collected (MM/DD/YYYY): | 06/01/2017 | ck | FIELD MATRIX: | WG | ck |
| TIME COLLECTED (HH:MM): | 1145 | ck | MEDIA: | UA | ↓ |
| PRS ID: | NA | ↓ | SAMPLE TECH CODE: | PP | ↓ |
| LOCATION ID: | Bulldog Spring | ↓ | FIELD PREP: | F | ↓ |
| LOCATION TYPE: | NA | ↓ | FIELD QC TYPE: | FD | ↓ |
| TOP DEPTH: | ↓ | ↓ | SAMPLE USAGE: | QC | ↓ |
| BOTTOM DEPTH: | ↓ | ↓ | EXCAVATED: | | YES / NO / NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|----------------------------------|-----------------------|---|--------------|---------------|----------------------|
| NA | WSP-All Metals | 1 LITER POLY | 1 | HNO3 ICE | Y | NA |
| ↓ | WSP- GENINORG+PerChlorat e | 1 LITER POLY | 1 | ICE | ↓ | ↓ |
| ↓ | WSP- NH3+NO3/NO2 | 500 ML AMBER GLASS | 1 | H2SO4 | ↓ | ↓ |

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time 1145 HH:MM

COLLECTED BY (PRINT): K. Tew, T. Bonham

| | | | | | |
|--|-------------------------------------|-------------------------------|--|------------------------------------|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Tanner Bonham <i>[Signature]</i> | Date/Time 6/1/2017 1500 | RECEIVED BY (Printed Name) (Signature) | S. Spierwood <i>[Signature]</i> | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | | Date/Time | RECEIVED BY (Printed Name) (Signature) | | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133361

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------------------------|--------------|----------------------|---------------|---------------|
| Date Collected (MM/DD/YYYY): | 06/01/2017 | OK | FIELD MATRIX: | WS | OK |
| TIME COLLECTED (HH:MM): | 10 15 | OK | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | DL | |
| LOCATION ID: | Paj bel S&N Anch E Basin conf | | FIELD PREP: | UF | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | FD | |
| TOP DEPTH: | | | SAMPLE USAGE: | QC | |
| BOTTOM DEPTH: | | | EXCAVATED: | | YES / NO / NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|--------------------------|------------------------|---|--------------|---------------|----------------------|
| NA | WSP-8330B-NMED HEXMOD | 1 LITER AMBER GLASS | 3 | ICE | Y | NA |
| | WSP-All Metals | 1 LITER POLY | 1 | HNO3 | | |
| | WSP-CN(T) | 250 ML POLY | 1 | NAOH | | |
| | WSP-TKN+TOC | 500 ML AMBER GLASS | 1 | H2SO4 | | |

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time 10:15 HH:MM

COLLECTED BY (PRINT): K. Tew D. Jaramila T. Barkin

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

SAMPLE COLLECTION LOG/FIELD CHAIN OF CUSTODY

EVENT ID: 11258

EVENT NAME: Water/CdV (TA16 260) Q3 MY2017

SAMPLE ID: CAPA-17-133362

WORK ORDER:

| | AS PLANNED | AS COLLECTED | | AS PLANNED | AS COLLECTED |
|---------------------------------|----------------|--------------|----------------------|---------------|---------------|
| Date Collected (MM/DD/YYYY): | 06/01/2017 | ok | FIELD MATRIX: | WG | ok |
| TIME COLLECTED (HH:MM): | 11 45 | ok | MEDIA: | UA | |
| PRS ID: | NA | | SAMPLE TECH CODE: | PP | |
| LOCATION ID: | Bulldog Spring | | FIELD PREP: | UF | |
| LOCATION TYPE: | NA | | FIELD QC TYPE: | FD | |
| TOP DEPTH: | ↓ | | SAMPLE USAGE: | QC | ↓ |
| BOTTOM DEPTH: | ↓ | ↓ | EXCAVATED: | | YES / NO / NA |

| PRIORITY | ORDER | CONTAINER | # | PRESERVATIVE | COLLECTED Y/N | SPECIAL INSTRUCTIONS |
|----------|--------------------------|------------------------|---|--------------|---------------|----------------------|
| NA | MSGP-Hg | 1 LITER POLY | 1 | HNO3 | Y | NA |
| ↓ | WSP-8330B-NMED HEXMOD | 1 LITER AMBER GLASS | 3 | ICE | ↓ | ↓ |
| | WSP-CN(T) | 250 ML POLY | 1 | NAOH | | |
| ↓ | WSP-TKN+TOC | 500 ML AMBER GLASS | 1 | H2SO4 | ↓ | ↓ |

SAMPLE COMMENTS:

LOCATION COMMENTS:

FIELD PARAMETERS:

Sample Time 1145 HH:MM

COLLECTED BY (PRINT): Kew T. Benham

| | | | |
|--|-----------------------------|--|-----------------------------|
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 | RECEIVED BY (Printed Name) (Signature) | Date/Time 6/1/17 1500 |
| RELINQUISHED BY (Printed Name) (Signature) | Date/Time | RECEIVED BY (Printed Name) (Signature) | Date/Time |

Report Date: 05/30/2017

DATA VALIDATION REPORT

Chain Of Custody No. 2017-1644

1. Distribution Of Samples In EDD.

| SDG | Analytical Method | Regular Samples | Field Duplicates | Trip Blanks | Field Blanks | Equipment Blanks |
|--------|-------------------|-----------------|------------------|-------------|--------------|------------------|
| 424741 | EPA:120.1 | 3 | 2 | | | |
| 424741 | EPA:150.1 | 3 | 2 | | | |
| 424741 | EPA:160.1 | 3 | 2 | | | |
| 424741 | EPA:170.0 | 6 | 4 | | | |
| 424741 | EPA:245.2 | 6 | 4 | | | |
| 424741 | EPA:300.0 | 3 | 2 | | | |
| 424741 | EPA:310.1 | 3 | 2 | | | |
| 424741 | EPA:335.4 | 3 | 2 | | | |
| 424741 | EPA:350.1 | 3 | 2 | | | |
| 424741 | EPA:351.2 | 3 | 2 | | | |
| 424741 | EPA:353.2 | 3 | 2 | | | |
| 424741 | EPA:365.4 | 3 | 2 | | | |
| 424741 | SM:A2340B | 4 | 3 | | | |
| 424741 | SW-846:6010C | 4 | 3 | | | |
| 424741 | SW-846:6020 | 4 | 3 | | | |
| 424741 | SW-846:6850 | 3 | 2 | | | |
| 424741 | SW-846:8330B | 3 | 2 | | | |
| 424741 | SW-846:9060 | 3 | 2 | | | |

| SDG | Analytical Method | Analysis Lot ID | Prep Lot ID | Regular Samples | Field Duplicates | Trip Blanks | Field Blanks | Equipment Blanks | Method Blanks | Matrix Spikes | Matrix Spike Dups | Analytical Spikes | Post-Digestion Spikes | Lab Control Samples | Lab Control Sample Dups | Blank Spike | Blank Spike Dups | Lab Duplicates | Storage Blanks | Preparation Blanks | Reagent Blanks |
|--------|-------------------|-----------------|-------------|-----------------|------------------|-------------|--------------|------------------|---------------|---------------|-------------------|-------------------|-----------------------|---------------------|-------------------------|-------------|------------------|----------------|----------------|--------------------|----------------|
| 424741 | EPA:120.1 | 1671823 | 1671823 | 3 | 2 | | | | | | | | | 1 | | | | 2 | | | |
| 424741 | EPA:150.1 | 1671988 | 1671988 | 3 | 2 | | | | | | | | | 1 | | | | 2 | | | |
| 424741 | EPA:160.1 | 1671665 | 1671665 | 3 | 2 | | | | 1 | | | | | 1 | | | | 1 | | | |
| 424741 | EPA:170.0 | NA | NA | 6 | 4 | | | | | | | | | | | | | | | | |
| 424741 | EPA:245.2 | 1673857 | 1673856 | 6 | 4 | | | | 1 | 2 | | | | 1 | | | | 2 | | | |
| 424741 | EPA:300.0 | 1671680 | 1671680 | 3 | 2 | | | | 1 | | | | | 1 | | | | 1 | | | |

DATA VALIDATION REPORT

| SDG | Analytical Method | Analysis Lot ID | Prep Lot ID | Regular Samples | Field Duplicates | Trip Blanks | Field Blanks | Equipment Blanks | Method Blanks | Matrix Spikes | Matrix Spike Dups | Analytical Spikes | Post-Digestion Spikes | Lab Control Samples | Lab Control Sample Dups | Blank Spike | Blank Spike Dups | Lab Duplicates | Storage Blanks | Preparation Blanks | Reagent Blanks |
|--------|-------------------|-----------------|-------------|-----------------|------------------|-------------|--------------|------------------|---------------|---------------|-------------------|-------------------|-----------------------|---------------------|-------------------------|-------------|------------------|----------------|----------------|--------------------|----------------|
| 424741 | EPA:310.1 | 1671987 | 1671987 | 3 | 2 | | | | | 1 | | | | 2 | | | | 1 | | | |
| 424741 | EPA:335.4 | 1671534 | 1671533 | 3 | 2 | | | | 1 | 1 | | | | 1 | | | | 1 | | | |
| 424741 | EPA:350.1 | 1671935 | 1671933 | 3 | 2 | | | | 1 | 1 | | | | 1 | | | | 1 | | | |
| 424741 | EPA:351.2 | 1671942 | 1671941 | 3 | 2 | | | | 1 | 1 | | | | 1 | | | | 1 | | | |
| 424741 | EPA:353.2 | 1671832 | 1671832 | 3 | 2 | | | | 1 | | | | | 1 | | | | 2 | | | |
| 424741 | EPA:365.4 | 1671937 | 1671936 | 3 | 2 | | | | 1 | 1 | | | | 1 | | | | 1 | | | |
| 424741 | SM:A2340B | 1677435 | 1677435 | 4 | 3 | | | | | | | | | | | | | | | | |
| 424741 | SW-846:6010C | 1671565 | 1671563 | 4 | 3 | | | | 1 | 1 | | | | 1 | | | | 1 | | | |
| 424741 | SW-846:6020 | 1671589 | 1671587 | 4 | 3 | | | | 1 | 1 | | | | 1 | | | | 1 | | | |
| 424741 | SW-846:6850 | 1671834 | 1671833 | 3 | 2 | | | | 1 | 1 | 1 | | | 1 | | | | | | | |
| 424741 | SW-846:8330B | 1671746 | 1671745 | 3 | 2 | | | | 1 | 1 | 1 | | | 1 | | | | | | | |
| 424741 | SW-846:9060 | 1670679 | 1670679 | 1 | | | | | 1 | | | | | 1 | | | | 1 | | | |
| 424741 | SW-846:9060 | 1671529 | 1671529 | 2 | 2 | | | | 1 | | | | | 1 | 1 | | | 1 | | | |

2. Distribution Of Analytes In EDD.

| Analytical Method | Analytical Method Category | Field Sample ID | Lab Sample ID | Sample Purpose | Target Analytes | Surrogates | Spiked Compounds | TICS |
|-------------------|----------------------------|-----------------|---------------|----------------|-----------------|------------|------------------|------|
| EPA:120.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | CAWA-17-133306 | 1203805835 | DUP | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | CAWA-17-133332 | 1203805836 | DUP | 1 | 0 | 0 | 0 |
| EPA:120.1 | GENERAL CHEMISTRY | LCS | 1203805834 | LCS | 0 | 0 | 1 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAWA-17-133306 | 1203806296 | DUP | 1 | 0 | 0 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:150.1 | GENERAL CHEMISTRY | CAWA-17-133332 | 1203806297 | DUP | 1 | 0 | 0 | 0 |

DATA VALIDATION REPORT

| Analytical Method | Analytical Method Category | Field Sample ID | Lab Sample ID | Sample Purpose | Target Analytes | Surrogates | Spiked Compounds | TICS |
|-------------------|----------------------------|-----------------|---------------|----------------|-----------------|------------|------------------|------|
| EPA:150.1 | GENERAL CHEMISTRY | LCS | 1203806295 | LCS | 0 | 0 | 1 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | CAPA-17133354 | 1203805324 | DUP | 1 | 0 | 0 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | LCS | 1203805323 | LCS | 0 | 0 | 1 | 0 |
| EPA:160.1 | GENERAL CHEMISTRY | MB | 1203805322 | MB | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133355 | 424741002 | REG | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133357 | 424741007 | REG | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133361 | 424741010 | FD | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAPA-17-133362 | 424741004 | FD | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAWA-17-133290 | 424741005 | REG | 1 | 0 | 0 | 0 |
| EPA:170.0 | VOC | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133353 | 1203811031 | DUP | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133353 | 1203811033 | MS | 0 | 0 | 1 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133355 | 424741002 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133357 | 424741007 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133361 | 424741010 | FD | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAPA-17-133362 | 424741004 | FD | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAWA-17-133286 | 1203811032 | DUP | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAWA-17-133286 | 1203811034 | MS | 0 | 0 | 1 | 0 |
| EPA:245.2 | INORGANIC | CAWA-17-133290 | 424741005 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:245.2 | INORGANIC | LCS | 1203811030 | LCS | 0 | 0 | 1 | 0 |
| EPA:245.2 | INORGANIC | MB | 1203811029 | MB | 1 | 0 | 0 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 4 | 0 | 0 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 4 | 0 | 0 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 4 | 0 | 0 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 4 | 0 | 0 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 4 | 0 | 0 | 0 |

DATA VALIDATION REPORT

| Analytical Method | Analytical Method Category | Field Sample ID | Lab Sample ID | Sample Purpose | Target Analytes | Surrogates | Spiked Compounds | TICS |
|-------------------|----------------------------|-----------------|---------------|----------------|-----------------|------------|------------------|------|
| EPA:300.0 | GENERAL CHEMISTRY | CAWA-17-134176 | 1203805355 | DUP | 4 | 0 | 0 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | LCS | 1203805354 | LCS | 0 | 0 | 4 | 0 |
| EPA:300.0 | GENERAL CHEMISTRY | MB | 1203805353 | MB | 4 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 2 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 2 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 2 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 2 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 2 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAWA-17-133332 | 1203806285 | DUP | 2 | 0 | 0 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | CAWA-17-133332 | 1203806287 | MS | 0 | 0 | 1 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | LCS | 1203806283 | LCS | 0 | 0 | 1 | 0 |
| EPA:310.1 | GENERAL CHEMISTRY | LCS | 1203808726 | LCS | 0 | 0 | 1 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAPA-17-133355 | 424741002 | REG | 1 | 0 | 0 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAPA-17-133357 | 424741007 | REG | 1 | 0 | 0 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAPA-17-133361 | 424741010 | FD | 1 | 0 | 0 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAPA-17-133362 | 424741004 | FD | 1 | 0 | 0 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAPA-17133356 | 1203805010 | DUP | 1 | 0 | 0 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAPA-17133356 | 1203805012 | MS | 0 | 0 | 1 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | CAWA-17-133290 | 424741005 | REG | 1 | 0 | 0 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | LCS | 1203805009 | LCS | 0 | 0 | 1 | 0 |
| EPA:335.4 | GENERAL CHEMISTRY | MB | 1203805008 | MB | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 1203806103 | DUP | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 1203806104 | MS | 0 | 0 | 1 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | LCS | 1203806102 | LCS | 0 | 0 | 1 | 0 |
| EPA:350.1 | GENERAL CHEMISTRY | MB | 1203806101 | MB | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAPA-17-133355 | 1203806128 | DUP | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAPA-17-133355 | 1203806129 | MS | 0 | 0 | 1 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAPA-17-133355 | 424741002 | REG | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAPA-17-133357 | 424741007 | REG | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAPA-17-133361 | 424741010 | FD | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAPA-17-133362 | 424741004 | FD | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | CAWA-17-133290 | 424741005 | REG | 1 | 0 | 0 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | LCS | 1203806127 | LCS | 0 | 0 | 1 | 0 |
| EPA:351.2 | GENERAL CHEMISTRY | MB | 1203806126 | MB | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |

DATA VALIDATION REPORT

| Analytical Method | Analytical Method Category | Field Sample ID | Lab Sample ID | Sample Purpose | Target Analytes | Surrogates | Spiked Compounds | TICS |
|-------------------|----------------------------|-----------------|---------------|----------------|-----------------|------------|------------------|------|
| EPA:353.2 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | CAWA-17-134176 | 1203805866 | DUP | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | LCS | 1203805864 | LCS | 0 | 0 | 1 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | MB | 1203805863 | MB | 1 | 0 | 0 | 0 |
| EPA:353.2 | GENERAL CHEMISTRY | MSGP-17-132059 | 1203805867 | DUP | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAWA-17-134176 | 1203806120 | DUP | 1 | 0 | 0 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | CAWA-17-134176 | 1203806121 | MS | 0 | 0 | 1 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | LCS | 1203806113 | LCS | 0 | 0 | 1 | 0 |
| EPA:365.4 | GENERAL CHEMISTRY | MB | 1203806112 | MB | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAPA-17-133357 | 424741007 | REG | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAPA-17-133361 | 424741010 | FD | 1 | 0 | 0 | 0 |
| SM:A2340B | INORGANIC | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133353 | 1203805073 | DUP | 17 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133353 | 1203805074 | MS | 0 | 0 | 17 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133353 | 424741001 | REG | 17 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133357 | 424741007 | REG | 16 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133358 | 424741008 | REG | 17 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133359 | 424741009 | FD | 17 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133360 | 424741003 | FD | 17 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAPA-17-133361 | 424741010 | FD | 16 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | CAWA-17-133318 | 424741006 | REG | 17 | 0 | 0 | 0 |
| SW-846:6010C | INORGANIC | LCS | 1203805072 | LCS | 0 | 0 | 17 | 0 |
| SW-846:6010C | INORGANIC | MB | 1203805071 | MB | 17 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133353 | 1203805128 | DUP | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133353 | 1203805129 | MS | 0 | 0 | 11 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133353 | 424741001 | REG | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133357 | 424741007 | REG | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133358 | 424741008 | REG | 11 | 0 | 0 | 0 |

DATA VALIDATION REPORT

| Analytical Method | Analytical Method Category | Field Sample ID | Lab Sample ID | Sample Purpose | Target Analytes | Surrogates | Spiked Compounds | TICS |
|-------------------|----------------------------|-----------------|---------------|----------------|-----------------|------------|------------------|------|
| SW-846:6020 | INORGANIC | CAPA-17-133359 | 424741009 | FD | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133360 | 424741003 | FD | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAPA-17-133361 | 424741010 | FD | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | CAWA-17-133318 | 424741006 | REG | 11 | 0 | 0 | 0 |
| SW-846:6020 | INORGANIC | LCS | 1203805127 | LCS | 0 | 0 | 11 | 0 |
| SW-846:6020 | INORGANIC | MB | 1203805126 | MB | 11 | 0 | 0 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAPA-17-133353 | 1203805877 | MS | 0 | 0 | 1 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAPA-17-133353 | 1203805878 | MSD | 0 | 0 | 1 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAPA-17-133353 | 424741001 | REG | 1 | 0 | 0 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAPA-17-133358 | 424741008 | REG | 1 | 0 | 0 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAPA-17-133359 | 424741009 | FD | 1 | 0 | 0 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAPA-17-133360 | 424741003 | FD | 1 | 0 | 0 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | CAWA-17-133318 | 424741006 | REG | 1 | 0 | 0 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | LCS | 1203805876 | LCS | 0 | 0 | 1 | 0 |
| SW-846:6850 | LCMS/MS PERCHLORATE | MB | 1203805875 | MB | 1 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133355 | 424741002 | REG | 20 | 1 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133357 | 424741007 | REG | 20 | 1 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133361 | 424741010 | FD | 20 | 1 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133362 | 424741004 | FD | 20 | 1 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAWA-17-133288 | 1203805559 | MS | 0 | 1 | 20 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAWA-17-133288 | 1203805560 | MSD | 0 | 1 | 20 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAWA-17-133290 | 424741005 | REG | 20 | 1 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | LCS | 1203805556 | LCS | 0 | 1 | 20 | 0 |
| SW-846:8330B | LCMS/MS HIGH | MB | 1203805555 | MB | 20 | 1 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAPA-17-133355 | 424741002 | REG | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAPA-17-133357 | 424741007 | REG | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAPA-17-133361 | 424741010 | FD | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAPA-17-133362 | 424741004 | FD | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAPA-17133356 | 1203805984 | DUP | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAWA-17-133290 | 424741005 | REG | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | CAWA-17-134191 | 1203803830 | DUP | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | LCS | 1203803828 | LCS | 0 | 0 | 1 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | LCS | 1203805982 | LCS | 0 | 0 | 1 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | LCSD | 1203805983 | LCSD | 0 | 0 | 1 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | MB | 1203803827 | MB | 1 | 0 | 0 | 0 |
| SW-846:9060 | GENERAL CHEMISTRY | MB | 1203805981 | MB | 1 | 0 | 0 | 0 |

3. Are any analytes missing?

DATA VALIDATION REPORT

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

| Blank FS ID | Blank Lab Sample | Blank Type | Analytical Method | Sample | Parameter Name | Blank Lab Result | Lab Qualifier | Blank Lab Units | Blank Lab Detection Limit |
|-------------|------------------|--------------|-------------------|--------|-------------------------|------------------|---------------|-----------------|---------------------------|
| MB | 1203805071 | METHOD BLANK | SW-846:6010C | W | Zinc | -4.22 | J | ug/L | 10.0 |
| MB | 1203806101 | METHOD BLANK | EPA:350.1 | W | Ammonia as Nitrogen | 0.0385 | J | mg/L | 0.050 |
| MB | 1203806126 | METHOD BLANK | EPA:351.2 | W | Total Kjeldahl Nitrogen | 0.0715 | J | mg/L | 0.100 |

| Field Sample ID | Blank Lab | Blank Type | Analytical Method | Parameter Name | Blank Lab Result | Blank Lab Units | Lab Result | Lab Qualifier | Lab Detection Limit | Detect Flag | Detect to Nondetect Factor | Detect to Estimated Factor | Use Factors |
|-----------------|------------|--------------|-------------------|-------------------------|------------------|-----------------|------------|---------------|---------------------|-------------|----------------------------|----------------------------|-------------|
| CAPA-17-133353 | 1203806101 | METHOD BLANK | EPA:350.1 | Ammonia as Nitrogen | 0.0385 | mg/L | 0.0858 | | 0.050 | Y | 5 | 100 | Y |
| CAPA-17-133360 | 1203806101 | METHOD BLANK | EPA:350.1 | Ammonia as Nitrogen | 0.0385 | mg/L | 0.111 | | 0.050 | Y | 5 | 100 | Y |
| CAWA-17-133318 | 1203806101 | METHOD BLANK | EPA:350.1 | Ammonia as Nitrogen | 0.0385 | mg/L | 0.0983 | | 0.050 | Y | 5 | 100 | Y |
| CAPA-17-133358 | 1203806101 | METHOD BLANK | EPA:350.1 | Ammonia as Nitrogen | 0.0385 | mg/L | 0.190 | | 0.050 | Y | 5 | 100 | Y |
| CAPA-17-133359 | 1203806101 | METHOD BLANK | EPA:350.1 | Ammonia as Nitrogen | 0.0385 | mg/L | 0.120 | | 0.050 | Y | 5 | 100 | Y |
| CAPA-17-133355 | 1203806126 | METHOD BLANK | EPA:351.2 | Total Kjeldahl Nitrogen | 0.0715 | mg/L | 0.336 | | 0.100 | Y | 5 | 100 | Y |
| CAPA-17-133362 | 1203806126 | METHOD BLANK | EPA:351.2 | Total Kjeldahl Nitrogen | 0.0715 | mg/L | 0.286 | | 0.100 | Y | 5 | 100 | Y |
| CAWA-17-133290 | 1203806126 | METHOD BLANK | EPA:351.2 | Total Kjeldahl Nitrogen | 0.0715 | mg/L | 0.320 | | 0.100 | Y | 5 | 100 | Y |
| CAPA-17-133357 | 1203806126 | METHOD BLANK | EPA:351.2 | Total Kjeldahl Nitrogen | 0.0715 | mg/L | 0.268 | | 0.100 | Y | 5 | 100 | Y |
| CAPA-17-133361 | 1203806126 | METHOD BLANK | EPA:351.2 | Total Kjeldahl Nitrogen | 0.0715 | mg/L | 0.263 | | 0.100 | Y | 5 | 100 | Y |
| CAPA-17-133353 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |
| CAPA-17-133360 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |

DATA VALIDATION REPORT

| Field Sample ID | Blank Lab | Blank Type | Analytical Method | Parameter Name | Blank Lab Result | Blank Lab Units | Lab Result | Lab Qualifier | Lab Detection Limit | Detect Flag | Detect to Nondetect Factor | Detect to Estimated Factor | Use Factors |
|-----------------|------------|--------------|-------------------|----------------|------------------|-----------------|------------|---------------|---------------------|-------------|----------------------------|----------------------------|-------------|
| CAWA-17-133318 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |
| CAPA-17-133357 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |
| CAPA-17-133358 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |
| CAPA-17-133359 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |
| CAPA-17-133361 | 1203805071 | METHOD BLANK | SW-846:6010C | Zinc | -4.22 | ug/L | 10.0 | U | 10.0 | N | | | |

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

| LCS Lab Sample | LCSD Lab | Analytical Method | Parameter Name | Lab Lot ID | Analysis | Sample Matrix | LCS Spike Recovery | LCSD Spike Recovery | Upper Limit | Lower Limit | Upper Rejection Limit | Lower Rejection Limit | RPD | RPD Limit |
|----------------|----------|-------------------|----------------------|------------|------------|---------------|--------------------|---------------------|-------------|-------------|-----------------------|-----------------------|-----|-----------|
| 1203805556 | | SW-846:8330B | Dinitrotoluene[2,6-] | 1671745 | 06-09-2017 | W | 106 | | 105 | 72 | | | | |
| 1203805556 | | SW-846:8330B | TATB | 1671745 | 06-09-2017 | W | 150 | | 135 | 47 | | | | |

9. Any Field Duplicate RPDs outside the desired limits?

DATA VALIDATION REPORT

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

| Location ID | COC Number | Field Sample ID | Sample Purpose | Analysis Type Code | Analytical Suite | Analytical Method | Parameter Name | Lab Qualifier | Validation Qualifier | Validation Reason Codes | Detect Flag | Lab Result | Lab Units | Report Result | Report Units | Report MDA | Report Uncertainty | Lab Matrix | Sample Date | Percent | Analysis Lot ID | Validation Status Code | Use Flag |
|--------------------------|------------|-----------------|----------------|--------------------|-------------------|-------------------|-------------------------|---------------|----------------------|-------------------------|-------------|------------|-----------|---------------|--------------|------------|--------------------|------------|-------------|---------|-----------------|------------------------|----------|
| Bulldog Spring | 2017-1644 | CAPA-17-133353 | REG | INIT | GENERAL CHEMISTRY | EPA:350.1 | Ammonia as Nitrogen | | U | I4 | N | 0.0858 | mg/L | 0.0858 | mg/L | | | W | 06/01/2017 | | 1671935 | VAL | Y |
| Bulldog Spring | 2017-1644 | CAPA-17-133355 | REG | INIT | GENERAL CHEMISTRY | EPA:351.2 | Total Kjeldahl Nitrogen | | U | I4 | N | 0.336 | mg/L | 0.336 | mg/L | | | W | 06/01/2017 | | 1671942 | VAL | Y |
| Paj bel S&N Anch E Basin | 2017-1644 | CAPA-17-133357 | REG | INIT | GENERAL CHEMISTRY | EPA:351.2 | Total Kjeldahl Nitrogen | | U | I4 | N | 0.268 | mg/L | 0.268 | mg/L | | | W | 06/01/2017 | | 1671942 | VAL | Y |
| Paj bel S&N Anch E Basin | 2017-1644 | CAPA-17-133358 | REG | INIT | GENERAL CHEMISTRY | EPA:350.1 | Ammonia as Nitrogen | | U | I4 | N | 0.190 | mg/L | 0.190 | mg/L | | | W | 06/01/2017 | | 1671935 | VAL | Y |
| Paj bel S&N Anch E Basin | 2017-1644 | CAPA-17-133359 | FD | INIT | GENERAL CHEMISTRY | EPA:350.1 | Ammonia as Nitrogen | | U | I4 | N | 0.120 | mg/L | 0.120 | mg/L | | | W | 06/01/2017 | | 1671935 | VAL | Y |
| Bulldog Spring | 2017-1644 | CAPA-17-133360 | FD | INIT | GENERAL CHEMISTRY | EPA:350.1 | Ammonia as Nitrogen | | U | I4 | N | 0.111 | mg/L | 0.111 | mg/L | | | W | 06/01/2017 | | 1671935 | VAL | Y |
| Paj bel S&N Anch E Basin | 2017-1644 | CAPA-17-133361 | FD | INIT | GENERAL CHEMISTRY | EPA:351.2 | Total Kjeldahl Nitrogen | | U | I4 | N | 0.263 | mg/L | 0.263 | mg/L | | | W | 06/01/2017 | | 1671942 | VAL | Y |
| Bulldog Spring | 2017-1644 | CAPA-17-133362 | FD | INIT | GENERAL CHEMISTRY | EPA:351.2 | Total Kjeldahl Nitrogen | | U | I4 | N | 0.286 | mg/L | 0.286 | mg/L | | | W | 06/01/2017 | | 1671942 | VAL | Y |
| Martin Spring | 2017-1644 | CAWA-17-133290 | REG | INIT | GENERAL CHEMISTRY | EPA:351.2 | Total Kjeldahl Nitrogen | | U | I4 | N | 0.320 | mg/L | 0.320 | mg/L | | | W | 06/01/2017 | | 1671942 | VAL | Y |
| Martin Spring | 2017-1644 | CAWA-17-133318 | REG | INIT | GENERAL CHEMISTRY | EPA:350.1 | Ammonia as Nitrogen | | U | I4 | N | 0.0983 | mg/L | 0.0983 | mg/L | | | W | 06/01/2017 | | 1671935 | VAL | Y |

Reason Code

Description

I4

the sample result is =<5x the concentration of related analyte in the method blank.

J_LAB

The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL

NQ

The analytical laboratory did not qualify the analyte as not detected and/or any other standard qualify. The analyte is detected in the sample.

DATA VALIDATION REPORT

Reason Code

Description

U_LAB

The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

| Field Sample ID | Location ID | Sample Purpose | Analytical Method | No. Unuseable Records | Total Records |
|-----------------|--------------------------|----------------|-------------------|-----------------------|---------------|
| CAPA-17-133353 | Bulldog Spring | REG | EPA:120.1 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:150.1 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:160.1 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:170.0 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:245.2 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:300.0 | 0 | 4 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:310.1 | 0 | 2 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:350.1 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:353.2 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | EPA:365.4 | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | SM:A2340B | 0 | 1 |
| CAPA-17-133353 | Bulldog Spring | REG | SW-846:6010C | 0 | 17 |
| CAPA-17-133353 | Bulldog Spring | REG | SW-846:6020 | 0 | 11 |
| CAPA-17-133353 | Bulldog Spring | REG | SW-846:6850 | 0 | 1 |
| CAPA-17-133355 | Bulldog Spring | REG | EPA:170.0 | 0 | 1 |
| CAPA-17-133355 | Bulldog Spring | REG | EPA:245.2 | 0 | 1 |
| CAPA-17-133355 | Bulldog Spring | REG | EPA:335.4 | 0 | 1 |
| CAPA-17-133355 | Bulldog Spring | REG | EPA:351.2 | 0 | 1 |
| CAPA-17-133355 | Bulldog Spring | REG | SW-846:8330B | 0 | 20 |
| CAPA-17-133355 | Bulldog Spring | REG | SW-846:9060 | 0 | 1 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | EPA:170.0 | 0 | 1 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | EPA:245.2 | 0 | 1 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | EPA:335.4 | 0 | 1 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | EPA:351.2 | 0 | 1 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | SM:A2340B | 0 | 1 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | SW-846:6010C | 0 | 16 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | SW-846:6020 | 0 | 11 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | SW-846:8330B | 0 | 20 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | SW-846:9060 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:120.1 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:150.1 | 0 | 1 |

DATA VALIDATION REPORT

| Field Sample ID | Location ID | Sample Purpose | Analytical Method | No. Unuseable Records | Total Records |
|-----------------|--------------------------|----------------|-------------------|-----------------------|---------------|
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:160.1 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:170.0 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:245.2 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:300.0 | 0 | 4 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:310.1 | 0 | 2 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:350.1 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:353.2 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | EPA:365.4 | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | SM:A2340B | 0 | 1 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | SW-846:6010C | 0 | 17 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | SW-846:6020 | 0 | 11 |
| CAPA-17-133358 | Paj bel S&N Anch E Basin | REG | SW-846:6850 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:120.1 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:150.1 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:160.1 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:170.0 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:245.2 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:300.0 | 0 | 4 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:310.1 | 0 | 2 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:350.1 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:353.2 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | EPA:365.4 | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | SM:A2340B | 0 | 1 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | SW-846:6010C | 0 | 17 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | SW-846:6020 | 0 | 11 |
| CAPA-17-133359 | Paj bel S&N Anch E Basin | FD | SW-846:6850 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:120.1 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:150.1 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:160.1 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:170.0 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:245.2 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:300.0 | 0 | 4 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:310.1 | 0 | 2 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:350.1 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:353.2 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | EPA:365.4 | 0 | 1 |
| CAPA-17-133360 | Bulldog Spring | FD | SM:A2340B | 0 | 1 |

DATA VALIDATION REPORT

| Field Sample ID | Location ID | Sample Purpose | Analytical Method | No. Unuseable Records | Total Records |
|-----------------|--------------------------|----------------|-------------------|-----------------------|---------------|
| CAPA-17-133360 | Bulldog Spring | FD | SW-846:6010C | 0 | 17 |
| CAPA-17-133360 | Bulldog Spring | FD | SW-846:6020 | 0 | 11 |
| CAPA-17-133360 | Bulldog Spring | FD | SW-846:6850 | 0 | 1 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | EPA:170.0 | 0 | 1 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | EPA:245.2 | 0 | 1 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | EPA:335.4 | 0 | 1 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | EPA:351.2 | 0 | 1 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | SM:A2340B | 0 | 1 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | SW-846:6010C | 0 | 16 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | SW-846:6020 | 0 | 11 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | SW-846:8330B | 0 | 20 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | SW-846:9060 | 0 | 1 |
| CAPA-17-133362 | Bulldog Spring | FD | EPA:170.0 | 0 | 1 |
| CAPA-17-133362 | Bulldog Spring | FD | EPA:245.2 | 0 | 1 |
| CAPA-17-133362 | Bulldog Spring | FD | EPA:335.4 | 0 | 1 |
| CAPA-17-133362 | Bulldog Spring | FD | EPA:351.2 | 0 | 1 |
| CAPA-17-133362 | Bulldog Spring | FD | SW-846:8330B | 0 | 20 |
| CAPA-17-133362 | Bulldog Spring | FD | SW-846:9060 | 0 | 1 |
| CAWA-17-133290 | Martin Spring | REG | EPA:170.0 | 0 | 1 |
| CAWA-17-133290 | Martin Spring | REG | EPA:245.2 | 0 | 1 |
| CAWA-17-133290 | Martin Spring | REG | EPA:335.4 | 0 | 1 |
| CAWA-17-133290 | Martin Spring | REG | EPA:351.2 | 0 | 1 |
| CAWA-17-133290 | Martin Spring | REG | SW-846:8330B | 0 | 20 |
| CAWA-17-133290 | Martin Spring | REG | SW-846:9060 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:120.1 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:150.1 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:160.1 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:170.0 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:245.2 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:300.0 | 0 | 4 |
| CAWA-17-133318 | Martin Spring | REG | EPA:310.1 | 0 | 2 |
| CAWA-17-133318 | Martin Spring | REG | EPA:350.1 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:353.2 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | EPA:365.4 | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | SM:A2340B | 0 | 1 |
| CAWA-17-133318 | Martin Spring | REG | SW-846:6010C | 0 | 17 |
| CAWA-17-133318 | Martin Spring | REG | SW-846:6020 | 0 | 11 |

DATA VALIDATION REPORT

| Field Sample ID | Location ID | Sample Purpose | Analytical Method | No. Unuseable Records | Total Records |
|-----------------|---------------|----------------|-------------------|-----------------------|---------------|
| CAWA-17-133318 | Martin Spring | REG | SW-846:6850 | 0 | 1 |

DATA VALIDATION REPORT

Chain Of Custody No. 2017-1644 - Rev

1. Distribution Of Samples In EDD.

| SDG | Analytical Method | Regular Samples | Field Duplicates | Trip Blanks | Field Blanks | Equipment Blanks |
|--------|-------------------|-----------------|------------------|-------------|--------------|------------------|
| 424741 | SW-846:8330B | 3 | 2 | | | |

| SDG | Analytical Method | Analysis Lot ID | Prep Lot ID | Regular Samples | Field Duplicates | Trip Blanks | Field Blanks | Equipment Blanks | Method Blanks | Matrix Spikes | Matrix Spike Dups | Analytical Spikes | Post-Digestion Spikes | Lab Control Samples | Lab Control Sample Dups | Blank Spike | Blank Spike Dups | Lab Duplicates | Storage Blanks | Preparation Blanks | Reagent Blanks |
|--------|-------------------|-----------------|-------------|-----------------|------------------|-------------|--------------|------------------|---------------|---------------|-------------------|-------------------|-----------------------|---------------------|-------------------------|-------------|------------------|----------------|----------------|--------------------|----------------|
| 424741 | EPA:160.1 | 1671665 | 1671665 | | | | | | | | | | | | | | 1 | | | | |
| 424741 | SW-846:8330B | 1671746 | 1671745 | 3 | 2 | | | | 1 | | | | | | | | | | | | |

2. Distribution Of Analytes In EDD.

| Analytical Method | Analytical Method Category | Field Sample ID | Lab Sample ID | Sample Purpose | Target Analytes | Surrogates | Spiked Compounds | TICS |
|-------------------|----------------------------|-----------------|---------------|----------------|-----------------|------------|------------------|------|
| EPA:160.1 | GENERAL CHEMISTRY | CAPA-17133354 | 1203805324 | DUP | 1 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133355 | 424741002 | REG | 3 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133357 | 424741007 | REG | 3 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133361 | 424741010 | FD | 3 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAPA-17-133362 | 424741004 | FD | 3 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | CAWA-17-133290 | 424741005 | REG | 3 | 0 | 0 | 0 |
| SW-846:8330B | LCMS/MS HIGH | MB | 1203805555 | MB | 3 | 0 | 0 | 0 |

3. Are any analytes missing?

No.

4. Were any holding times exceeded?

No.

5. Any contaminants in blanks?

DATA VALIDATION REPORT

No.

6. Any surrogate recoveries outside the control limits?

No.

7. Any MS/MSD recoveries or RPDs outside the control limits?

No.

8. Any LCS/LCSD or BS/BSD recoveries or RPDs outside the control limits?

No.

9. Any Field Duplicate RPDs outside the desired limits?

No.

10. Any Lab Duplicate RPDs outside the desired limits?

No.

11. Any required reporting limits exceeded?

No.

12. Additional Validator's Comments.

13. Display Flagged Data.

None.

Reason Code

Description

DATA VALIDATION REPORT

Reason Code

Description

J_LAB

The analytical laboratory qualified the detected result as estimated (J) because the result was less the PQL but greater than the MDL

NQ

The analytical laboratory did not qualify the analyte as not detected and/or any other standard qualify. The analyte is detected in the sample.

U_LAB

The analytical laboratory qualified the analyte as not detected.

14. Usable Result Count.

| Field Sample ID | Location ID | Sample Purpose | Analytical Method | No. Unuseable Records | Total Records |
|-----------------|--------------------------|----------------|-------------------|-----------------------|---------------|
| CAPA-17-133355 | Bulldog Spring | REG | SW-846:8330B | 0 | 3 |
| CAPA-17-133357 | Paj bel S&N Anch E Basin | REG | SW-846:8330B | 0 | 3 |
| CAPA-17-133361 | Paj bel S&N Anch E Basin | FD | SW-846:8330B | 0 | 3 |
| CAPA-17-133362 | Bulldog Spring | FD | SW-846:8330B | 0 | 3 |
| CAWA-17-133290 | Martin Spring | REG | SW-846:8330B | 0 | 3 |

June 26, 2017

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

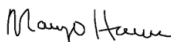
Re: LANL- WQH Water Samples
Work Order: 424741
SDG: 2017-1644

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on June 06, 2017, and analyzed for Explosives by LCMSMS, General Chemistry, Metals and Perchlorates by LCMSMS. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,


Margo Herron for
Valerie Davis
Project Manager

Chain of Custody: 2017-1644
Enclosures



ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Work Order #: 424741
SDG: 2017-1644

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Case Narrative

**Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Workorder #: 424741
SDG # : 2017-1644**

June 26, 2017

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on June 06, 2017 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

| <u>Laboratory ID</u> | <u>Client ID</u> |
|-----------------------------|-------------------------|
| 424741001 | CAPA-17-133353 |
| 424741002 | CAPA-17-133355 |
| 424741003 | CAPA-17-133360 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741006 | CAWA-17-133318 |
| 424741007 | CAPA-17-133357 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 424741010 | CAPA-17-133361 |

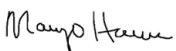
Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, General Chemistry, Metals and Perchlorates by LCMSMS.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.


Margo Herron for
Valerie Davis
Project Manager

List of current GEL Certifications as of 26 June 2017

| State | Certification |
|--------------------------|------------------------------|
| Alaska | UST-0110 |
| Arkansas | 88-0651 |
| CLIA | 42D0904046 |
| California | 2940 |
| Colorado | SC00012 |
| Connecticut | PH-0169 |
| Delaware | SC00012 |
| DoD ELAP/ ISO17025 A2LA | 2567.01 |
| Florida NELAP | E87156 |
| Foreign Soils Permit | P330-15-00283, P330-15-00253 |
| Georgia | SC00012 |
| Georgia SDWA | 967 |
| Hawaii | SC00012 |
| Idaho Chemistry | SC00012 |
| Idaho Radiochemistry | SC00012 |
| Illinois NELAP | 200029 |
| Indiana | C-SC-01 |
| Kansas NELAP | E-10332 |
| Kentucky SDWA | 90129 |
| Kentucky Wastewater | 90129 |
| Louisiana NELAP | 03046 (AI33904) |
| Louisiana SDWA | LA170010 |
| Maryland | 270 |
| Massachusetts | M-SC012 |
| Michigan | 9976 |
| Mississippi | SC00012 |
| Nebraska | NE-OS-26-13 |
| Nevada | SC000122017-1 |
| New Hampshire NELAP | 205415 |
| New Jersey NELAP | SC002 |
| New Mexico | SC00012 |
| New York NELAP | 11501 |
| North Carolina | 233 |
| North Carolina SDWA | 45709 |
| North Dakota | R-158 |
| Oklahoma | 9904 |
| Pennsylvania NELAP | 68-00485 |
| S.Carolina Radchem | 10120002 |
| South Carolina Chemistry | 10120001 |
| Tennessee | TN 02934 |
| Texas NELAP | T104704235-17-12 |
| Utah NELAP | SC000122017-22 |
| Vermont | VT87156 |
| Virginia NELAP | 460202 |
| Washington | C780 |
| West Virginia | 997404 |

Chain of Custody and Supporting Documentation



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

| | | | |
|--|---|---|--|
| Client: <u>ESHL</u> | | SDG/AR/COC/Work Order: <u>424741</u> | |
| Received By: <u>ZKW</u> | | Date Received: <u>6/6/17</u> | |
| Carrier and Tracking Number | | Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <u>5908 1782 1083 - 4°C</u> <u>5908 1782 1050 - 3°C</u> <u>5908 1782 1709 - 5°C</u> <u>5908 1782 1061 - 5°C</u> <u>5908 1782 1672 - 4°C</u> <u>5908 1782 1694 - 4°C</u> <u>5908 1782 1040 - 5°C</u> | |
| Suspected Hazard Information | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. | |
| Shipped as a DOT Hazardous? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Hazard Class Shipped: _____ UN#: _____ | |
| COC/Samples marked or classified as radioactive? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> <input checked="" type="checkbox"/> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3 | |
| Is package, COC, and/or Samples marked HAZ? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____ | |

| Sample Receipt Criteria | Yes | NA | No | Comments/Qualifiers (Required for Non-Conforming Items) |
|---|-------------------------------------|--------------------------|-------------------------------------|---|
| 1 Shipping containers received intact and sealed? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) |
| 2 Chain of custody documents included with shipment? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?* | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Preservation Method: Wet Ice <input checked="" type="checkbox"/> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius <u>See TEMP: Above</u> |
| 4 Daily check performed and passed on IR temperature gun? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Temperature Device Serial #: <u>IR3-16</u> Secondary Temperature Device Serial # (If Applicable): _____ |
| 5 Sample containers intact and sealed? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) |
| 6 Samples requiring chemical preservation at proper pH? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's and Containers Affected: If Preservation added, Lot#: |
| 7 Do any samples require Volatile Analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | If Yes, Are Encores or Soil Kits present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A (If unknown, select No) VOA vials free of headspace? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Sample ID's and containers affected: <u>Both Vials for 136836 and 1 vial for 1433364</u> <u>recheck headspace</u> |
| 8 Samples received within holding time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ID's and tests affected: |
| 9 Sample ID's on COC match ID's on bottles? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's and containers affected: |
| 10 Date & time on COC match date & time on bottles? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's affected: |
| 11 Number of containers received match number indicated on COC? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Sample ID's affected: <u>We received sample CAWA-17-134191 5/31/17 08:54</u> |
| 12 Are sample containers identifiable as GEL provided? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 13 COC form is properly signed in relinquished/received sections? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Comments (Use Continuation Form if needed):

* We also rec'd 2 VOA vials for CAWA-17-13394 not indicated on the COC.
 * We only rec'd 1 VOA vial for WSTMD-17-136839

PM (or PMA) review: Initials

MEH

Date

6/7/17

Page

1

of

1

GL-CHL-SR-001 Rev 5

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
T800 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
ACTWGT: 51.0 LB MAN
CAD: 0014178/CAFE2915

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

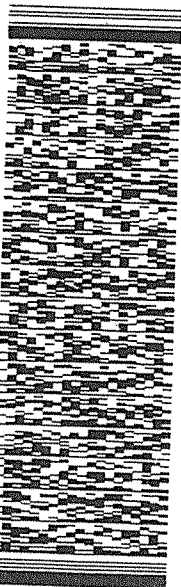
CHARLESTON SC 29407

(843) 566-8171

REF: 21PD0ASRGW04BAGWEO



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Express



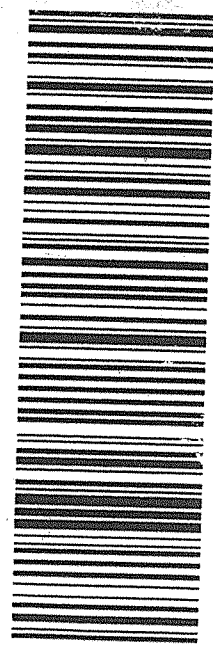
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MPS# 5908 1782 1650
Mstr# 5908 1782 1640

TUE - 06 JUN 10:30A
PRIORITY OVERNIGHT

0201

X7 RBWA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15 99

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
T800 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
ACTWGT: 50.0 LB MAN
CAD: 0014178/CAFE2916

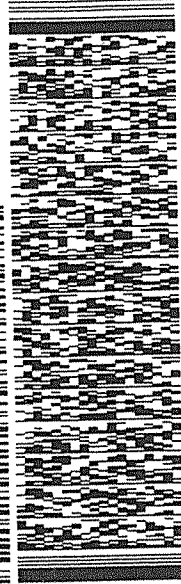
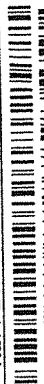
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2040 SAVAGE RD

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REF: 21PD0ASRGW04BAGWEO



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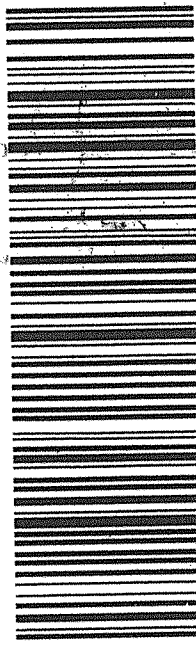
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MASTER

TUE - 06 JUN 10:30A
PRIORITY OVERNIGHT

0201

X7 RBWA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15 99

538C1/A502/329B

J161315081301BY

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2916
BILL SENDER

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

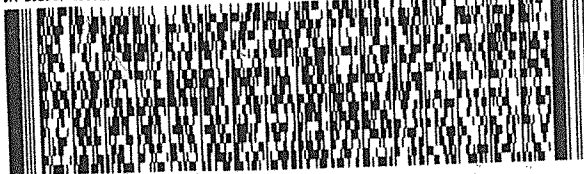
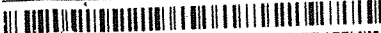
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CAD: 0014176/CAFE2916
BILL SENDER

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GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

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REF: 21PD0ASRGW04BAGWE0



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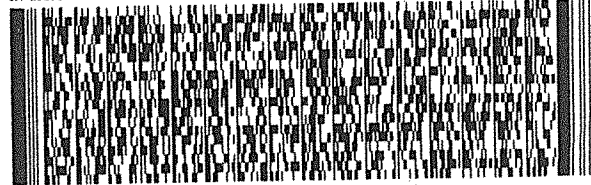
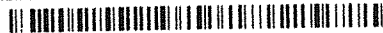


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2040 SAVAGE RD

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REF: 21PD0ASRGW04BAGWE0



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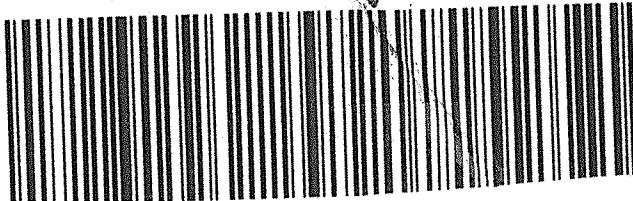


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MASTER

X7 RBWA

TUE - 06 JUN 10:30
PRIORITY OVERNIGHT

2940
SC-US CH



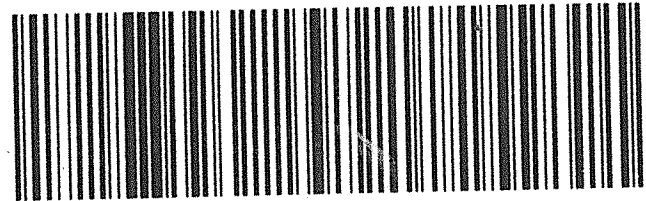
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Mstr# 5908 1782 1661
0201

X7 RBWA

TUE - 06 JUN 10:30
PRIORITY OVERNIGHT

2940
SC-US CH

Part # 156148V-434 R1T2 06/15



SHIP DATE: 05JUN17
ACTWGT: 62.0 LB MAN
CAD: 0014176/CAFE2916

BILL SENDER

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

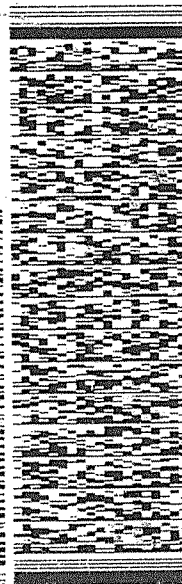
CHARLESTON SC 29407

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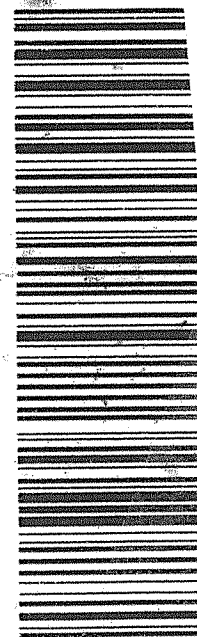


TUE - 06 JUN 10:30A
PRIORITY OVERNIGHT

2 of 2
MPS# 5908 1782 1694
0263
Mstr# 5908 1782 1683
0201

X7 RBWA

29407
SC-US CHS



Part # 156148V-434 R1T2 06/15

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05 JUN 17
ACTWGT: 56.0 LB MAN
CAD: 0014176/CAFE2916

BILL SENDER

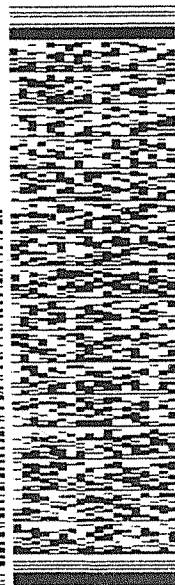
TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8171
REF: 21PD0ASRGW04BAGWE0



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Express

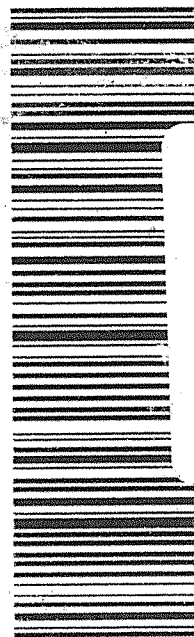


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PRIORITY OVERNIGHT

TRK# 5908 1782 1709

X7 RBWA

29407
SC-US CHS



RT 257 5 E 10:30 1709 06.06
ST F1

Part # 156148V-434 RIT2 06/15 39

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

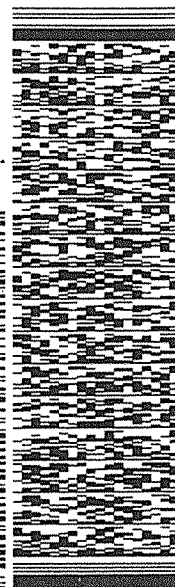
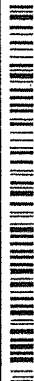
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ACTWGT: 51.0 LB MAN
CAD: 0014176/CAFE2916

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

CHARLESTON SC 29407

(843) 566-8171
REF: 21PD0ASRGW04BAGWE0



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Express



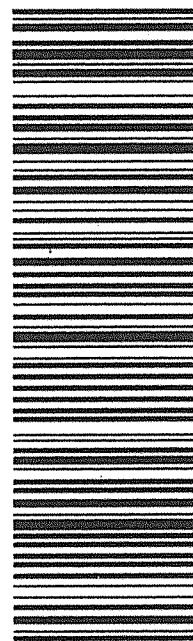
TUE - 06 JUN 10:30A
PRIORITY OVERNIGHT

1 of 2
TRK# 5908 1782 1661

MASTER

X7 RBWA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15 39

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

Qualifier Explanation

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

< Result is less than value reported

> Result is greater than value reported

^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL

A The TIC is a suspected aldol-condensation product

B Target analyte was detected in the associated blank

B Metals-Either presence of analyte detected in the associated blank, or
MDL/IDL < sample value < PQL

BD Results are either below the MDC or tracer recovery is low

C Analyte has been confirmed by GC/MS analysis

D Results are reported from a diluted aliquot of the sample

d 5-day BOD-The 2:1 depletion requirement was not met for this sample

E Organics-Concentration of the target analyte exceeds the instrument calibration range

E Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria

H Analytical holding time was exceeded

h Preparation or preservation holding time was exceeded

J Value is estimated

N Metals-The Matrix spike sample recovery is not within specified control limits

N Organics-Presumptive evidence based on mass spectral library search to make a tentative
identification of the analyte (TIC). Quantitation is based on nearest internal standard
response factor

N/A Spike recovery limits do not apply. Sample concentration exceeds spike concentration
by 4X or more

ND Analyte concentration is not detected above the reporting limit

UI Gamma Spectroscopy-Uncertain identification

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y QC Samples were not spiked with this compound

Z Paint Filter Test-Particulates passed through the filter, however no free liquids were observed.

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference.
For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Perchlorates by LCMSMS Analysis

Case Narrative

**Perchlorates by LCMSMS
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741**

Method/Analysis Information

Procedure: **Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)**

Analytical Method: SW-846:6850

Prep Method: SW-846:6850

Analytical Batch Number: 1671834

Prep Batch Number: 1671833

Sample Analysis

| Sample ID | Client ID |
|------------------|--|
| 424741001 | 424741001 (CAPA-17-133353) |
| 424741003 | 424741003 (CAPA-17-133360) |
| 424741006 | 424741006 (CAWA-17-133318) |
| 424741008 | 424741008 (CAPA-17-133358) |
| 424741009 | 424741009 (CAPA-17-133359) |
| 1203805879 | Interference Check Sample (ICS) |
| 1203805875 | Method Blank (MB) |
| 1203805876 | Laboratory Control Sample (LCS) |
| 1203805877 | 424741001(CAPA-17-133353) Matrix Spike (MS) |
| 1203805878 | 424741001(CAPA-17-133353) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as

Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-067 REV# 14.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this SDG. Due to software constraints, all Initial Calibration Blanks must be designated as IPB001.

ICV Requirements

All associated initial calibration verification standard(s) (ICV) met the acceptance criteria.

CCB Requirements

All continuing calibration blanks (CCB) bracketing the analyses associated with this batch were within acceptance criteria.

CCV Requirements

All continuing calibration checks (CCV) requirements were met by all bracketing CCV standards.

Low Level Standard (CRI) Requirements

All low level calibration verification (CRI) requirements were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Interference Check Sample (ICS)

The ICS spike recoveries met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Client sample 424741001 (CAPA-17-133353) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPDs between the MS and MSD met the acceptance limits.

Internal Standard Area Acceptance

The internal standard areas were within the required acceptance criteria for all samples and QC.

Retention Time

During the analysis of Perchlorate by LC/MS/MS, retention time shifts are commonly observed. These retention time shifts, which are caused by fouling of the column by the sample matrices, are problematic when the retention time is used as one of the criterion for confirmation. To overcome this problem, a known amount of O(18) labeled Perchlorate was added to each sample as a retention time standard. The presence of Perchlorate was confirmed by the relative retention time (RRT) of the Perchlorate peak and the O(18) standard. A RRT window of 0.98 to 1.02, as required by DOD QSM 5.0, has been used. In addition to the isotopic ratio, the presence of Perchlorate in the samples associated with this data package have been confirmed using the relative retention criteria stated above, not the absolute retention time.

Technical Information

Holding Time Specifications

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations

Manual integrations were not required for any data file associated with this SDG.

Method Comments

The samples in this SDG were not originally analyzed using EPA Method 314.0.

Additional Comments

The Perchlorate Isotope Ratio on the Form I may differ slightly from the ratio on the corresponding raw data due to rounding rules and/or significant figures or due to software limitations when there are manual integrations, dilutions or other factors. The ratio value of the Form I is the correct value. The retention time marker, Perchlorate-O (18), is added to all samples, instrument blanks, and standards prior to injection. It is used to verify the retention time of Perchlorate and Perchlorate-101 and to insure an accurate injection occurred. Due to various anions affecting the recovery of Perchlorate-O (18) and not Perchlorate and Perchlorate-101, the calibration curves of Perchlorate and Perchlorate-101 are internally corrected for using Perchlorate-O (18).

Perchlorate Isotope Ratio

The Perchlorate isotope ratio met acceptance criteria for all samples and QC samples. Please see the isotope ratio criteria in the Miscellaneous Section.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Perchlorate analysis. It is coupled with a Micromass Quattro Ultima Mass Spectrometer/Mass Spectrometer. It is designated as LCMSMS #2. It is fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis. The laboratory may also utilize an Agilent 1100 liquid chromatography instrument for Perchlorate analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/Mass Spectrometer, designated as LCMSMS #3 or LCMSMS #4. It is also fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In

an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The LC-MS/MS Perchlorate analysis was performed on a Quatro Ultima LC/MS/MS.

Chromatographic separation of Perchlorate is accomplished through analysis on the following anion column:

Dionex: IonPac AG-16 2 x 50 mm.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Michael Penny

Date: 14 JUN 2017

Title: Group Leader

Sample Data Summary

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample No.

CAPA-17-133353Lab Code: GELDate Received: 06-JUN-17Instrument: LCMSMSGEL Job No (SDG): 2017-1644Method: SW846 6850 ModifiedGEL Sample ID: 424741001Matrix: WATERDate Filtered: 07-JUN-17Extraction Batch ID: 1671833Injection Volume (uL): 20Extraction Type: Filter/DAISample Volume/Weight: 10.0 mL%Solids: Concentrated Extract Volume: 10.0

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.634 | ug/L | | 1 | 07-JUN-17 18:50 | per0607019a |
| | Perchlorate Isotope Ratio | | | 3 | | | 1 | 07-JUN-17 18:50 | per0607019a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.597 | ug/L | | 1 | 07-JUN-17 18:50 | per0607019a |
| | Perchlorate-O(18) | | | 0.453 | ug/L | | 1 | 07-JUN-17 18:50 | per0607019a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133360Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741003Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.644 | ug/L | | 1 | 07-JUN-17 19:17 | per0607022a |
| | Perchlorate Isotope Ratio | | | 2.82 | | | 1 | 07-JUN-17 19:17 | per0607022a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.644 | ug/L | | 1 | 07-JUN-17 19:17 | per0607022a |
| | Perchlorate-O(18) | | | 0.431 | ug/L | | 1 | 07-JUN-17 19:17 | per0607022a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAWA-17-133318Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741006Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.470 | ug/L | | 1 | 07-JUN-17 19:53 | per0607026a |
| | Perchlorate Isotope Ratio | | | 2.86 | | | 1 | 07-JUN-17 19:53 | per0607026a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.465 | ug/L | | 1 | 07-JUN-17 19:53 | per0607026a |
| | Perchlorate-O(18) | | | 0.458 | ug/L | | 1 | 07-JUN-17 19:53 | per0607026a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133358Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741008Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.231 | ug/L | | 1 | 07-JUN-17 20:02 | per0607027a |
| | Perchlorate Isotope Ratio | | | 3 | | | 1 | 07-JUN-17 20:02 | per0607027a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.217 | ug/L | | 1 | 07-JUN-17 20:02 | per0607027a |
| | Perchlorate-O(18) | | | 0.438 | ug/L | | 1 | 07-JUN-17 20:02 | per0607027a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133359Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741009Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.231 | ug/L | | 1 | 07-JUN-17 20:11 | per0607028a |
| | Perchlorate Isotope Ratio | | | 3.02 | | | 1 | 07-JUN-17 20:11 | per0607028a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.216 | ug/L | | 1 | 07-JUN-17 20:11 | per0607028a |
| | Perchlorate-O(18) | | | 0.435 | ug/L | | 1 | 07-JUN-17 20:11 | per0607028a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Quality Control Summary

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 2017-1644

Extract Batch Code: 1671833

Date Filtered: 07-JUN-17

Matrix: WATER

Sample ID: 1203805876

| Analyte^ | True | Found | Units | %Rec | Q | Control Limits |
|---------------------------|-------|-------|-------|------|---|----------------|
| Perchlorate | 0.200 | .209 | ug/L | 104 | | 85 - 115 |
| Perchlorate Isotope Ratio | | 2.99 | | | | - |
| Perchlorate-101 | 0.200 | .197 | ug/L | 99 | | 85 - 115 |
| Perchlorate-O(18) | | .47 | ug/L | | | - |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No (SDG): 2017-1644

Extract Batch Code: 1671833

Date Extracted: 07-JUN-17

GEL MS/PS ID: 1203805877

Client ID: CAPA-17-133353

GEL MSD/PSD ID: 1203805878

QC Type: MS

| Compound^ | Spike Added | Sample Conc | Units | MS Conc | MS Rec # | MSD Conc | MSD Rec # | RPD # | RPD Limit | Recovery Limit |
|---------------------------|-------------|-------------|-------|---------|----------|----------|-----------|-------|-----------|----------------|
| Perchlorate | 0.200 | 0.634 | ug/L | 0.874 | 120 | .806 | 86 | 8 | 30 | 75 - 125 |
| Perchlorate Isotope Ratio | 0 | 3.00 | | 3.08 | | 2.97 | | 3 | | - |
| Perchlorate-101 | 0.200 | 0.597 | ug/L | 0.801 | 102 | .766 | 85 | 5 | 30 | 75 - 125 |
| Perchlorate-O(18) | 0 | 0.453 | ug/L | 0.435 | | .446 | | 3 | | - |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Quality Control Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: EPA 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

MBDate Received: 07-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805875Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.200 | ug/L | U | 1 | 07-JUN-17 17:56 | per0607013a |
| | Perchlorate Isotope Ratio | | | | | | 1 | 07-JUN-17 17:56 | per0607013a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.200 | ug/L | U | 1 | 07-JUN-17 17:56 | per0607013a |
| | Perchlorate-O(18) | | | 0.465 | ug/L | | 1 | 07-JUN-17 17:56 | per0607013a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: EPA 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

LCSDate Received: 07-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805876Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.209 | ug/L | | 1 | 07-JUN-17 18:05 | per0607014a |
| | Perchlorate Isotope Ratio | | | 2.99 | | | 1 | 07-JUN-17 18:05 | per0607014a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.197 | ug/L | J | 1 | 07-JUN-17 18:05 | per0607014a |
| | Perchlorate-O(18) | | | 0.470 | ug/L | | 1 | 07-JUN-17 18:05 | per0607014a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

ICS

Date Received:

GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805879Date Filtered: 07-JUN-17Injection Volume (uL): 20

%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.199 | ug/L | J | 1 | 07-JUN-17 18:14 | per0607015a |
| | Perchlorate Isotope Ratio | | | 2.89 | | | 1 | 07-JUN-17 18:14 | per0607015a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.194 | ug/L | J | 1 | 07-JUN-17 18:14 | per0607015a |
| | Perchlorate-O(18) | | | 0.504 | ug/L | | 1 | 07-JUN-17 18:14 | per0607015a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133353MSDate Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805877Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.874 | ug/L | | 1 | 07-JUN-17 18:59 | per0607020a |
| | Perchlorate Isotope Ratio | | | 3.08 | | | 1 | 07-JUN-17 18:59 | per0607020a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.801 | ug/L | | 1 | 07-JUN-17 18:59 | per0607020a |
| | Perchlorate-O(18) | | | 0.435 | ug/L | | 1 | 07-JUN-17 18:59 | per0607020a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133353MSDDate Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805878Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.806 | ug/L | | 1 | 07-JUN-17 19:08 | per0607021a |
| | Perchlorate Isotope Ratio | | | 2.97 | | | 1 | 07-JUN-17 19:08 | per0607021a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.766 | ug/L | | 1 | 07-JUN-17 19:08 | per0607021a |
| | Perchlorate-O(18) | | | 0.446 | ug/L | | 1 | 07-JUN-17 19:08 | per0607021a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Explosives by LCMSMS Analysis

Case Narrative

**Explosives by LCMSMS
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741**

Method/Analysis Information

Procedure: **The Processing, Extraction, and Analysis of Nitroaromatics, Nitroamines, and Nitrate Esters by SW-846 8330B**

Analytical Method: SW846 3535A/8330B

Prep Method: SW846 3535A

Analytical Batch
Number: 1671746

Prep Batch Number: 1671745

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3535A/8330B:

| Sample ID | Client ID |
|------------------|--|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203805555 | Method Blank (MB) |
| 1203805556 | Laboratory Control Sample (LCS) |
| 1203805559 | 424596009(CAWA-17-133288) Matrix Spike (MS) |
| 1203805560 | 424596009(CAWA-17-133288) Matrix Spike Duplicate (MSD) |

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-068 REV# 7.

Calibration Information

Initial Calibration

All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements

All calibration verification standards (ICV or CCV) have not met requirements of 80-120% for samples 1203805555 (MB), 424741002 (CAPA-17-133355), 424741004 (CAPA-17-133362), 424741005 (CAWA-17-133290), 424741007 (CAPA-17-133357) and 424741010 (CAPA-17-133361) in this SDG. Please

refer to Form 7 of the data package for a list of recoveries. The data are Q qualified and reported as stated in the SOP.

Calibration Blank Requirements

All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria. Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements

The Low Level Calibration Verification Standard (IRA) did not meet requirements of 70-130% for samples 424741005 (CAWA-17-133290) and 424741007 (CAPA-17-133357) in this SDG. Please refer to Form 7 of the data package for a list of recoveries. The data are Q qualified and reported as stated in the SOP.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries

All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery

One or more of the required spiking analytes were not within the acceptance limits in the laboratory control sample (See Below). While the LCS exhibited a high bias, the analyte was/were not detected in the associated samples, the data are reported.

| Sample | Analyte | Value |
|------------------|--------------------|-----------------|
| 1203805556 (LCS) | 2,6-Dinitrotoluene | 106* (72%-105%) |
| | TATB | 150* (47%-135%) |

QC Sample Designation

Client sample 424596009 (CAWA-17-133288) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. Because the recoveries were biased high and target analytes were not detected in the associated samples above the reporting limit, the data were reported.

| Sample | Analyte | Value |
|--------------------------------|---------|-----------------|
| 1203805560 (CAWA-17-133288MSD) | TATB | 152* (38%-149%) |

MS/MSD Relative Percent Difference (RPD) Statement

The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water. Sample 424741005 (CAWA-17-133290) was further diluted to bring the over range concentration within the calibration range. The final dilution in each case takes the 1:1 v/v dilution into account.

| | |
|---------|---------------|
| Analyte | 424741 |
| | 005 |
| HMX | 4X |
| RDX | 50X |

Sample Re-extraction/Re-analysis

Sample 424741007 (CAPA-17-133357) was re-analyzed to confirm potential carryover from the previous sample analysis. The re-analysis data are reported. 1203805556 (LCS), 1203805559 (CAWA-17-133288MS) and 1203805560 (CAWA-17-133288MSD) were re-analyzed due to the bracketing CCV failing to meet the required acceptance criteria. The second analysis was bracketed by passing acceptance criteria.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception report (DER) 1641799 was generated for samples 1203805556 (LCS) and 1203805560 (CAWA-17-133288MSD) in this SDG/batch.

Manual Integrations

Manual integrations were not required for any data file associated with this SDG.

Additional Comments

Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct. Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data. Relative Retention Time (RRT) is used by the laboratory to establish peak identity. The RRT of each target analyte is calculated using the retention time of the corresponding internal standard. The RRT of each analyte in a sample must be within 0.1 of the analyte's calculated RRT in the ICV.

System Configuration

The laboratory utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LC/MS/MS #3 or LC/MS/MS #4. The laboratory also utilizes a Shimadzu Nexera XC liquid chromatography instrument for Primary and/or Secondary analyte analysis. It is coupled with an Applied Biosystems 5500 Mass Spectrometer/ Mass Spectrometer, designated as LC/MS/MS #5. All are fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The LC-MS/MS Explosives analysis was performed on a ABSciex 5500 Qtrap LC/MS/MS.

The detection of the Primary and Secondary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- J Value is estimated
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Michael Penny

Date: 21 JUN 2017

Title: Group Leader

Sample Data Summary

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133355

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741002

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608044.wiff

Date Analyzed: 09-JUN-17 18:21

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .0993 | J | 0.086 | 0.269 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .269 | U | 0.0882 | 0.269 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 479-45-8 | Tetryl | .538 | U | 0.086 | 0.538 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |
| 78-11-5 | PETN | .538 | U | 0.108 | 0.538 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | .538 | U | 0.161 | 0.538 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133355

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741002

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|-------|-------|
| 3058-38-6 | TATB | 1.08 | U | 0.323 | 1.08 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1.08 | QU | 0.323 | 1.08 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.08 | U | 0.323 | 1.08 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 2691-41-0 | HMX | 1.71 | | 0.086 | 0.269 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.69 | U | 0.538 | 2.69 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.69 | U | 0.538 | 2.69 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |
| 121-82-4 | RDX | 2.91 | | 0.086 | 0.269 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133362

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741004

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608045.wiff

Date Analyzed: 09-JUN-17 18:56

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .0891 | J | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .26 | U | 0.0854 | 0.260 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 479-45-8 | Tetryl | .521 | U | 0.0833 | 0.521 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |
| 78-11-5 | PETN | .521 | U | 0.104 | 0.521 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | .521 | U | 0.156 | 0.521 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133362

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741004

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|--------|-------|
| 3058-38-6 | TATB | 1.04 | U | 0.313 | 1.04 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1.04 | QU | 0.313 | 1.04 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.04 | U | 0.313 | 1.04 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 2691-41-0 | HMX | 1.67 | | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.6 | U | 0.521 | 2.60 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.6 | U | 0.521 | 2.60 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |
| 121-82-4 | RDX | 2.91 | | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613022.wiff

Date Analyzed: 14-JUN-17 04:42

Dilution Factor: 50

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|----------|----------|----------------|---|------|------|
| 121-82-4 | RDX | 74 | | 2.15 | 6.72 |
| 121-82-4 | RDX | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613023.wiff

Date Analyzed: 14-JUN-17 05:17

Dilution Factor: 4

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-----------|----------|----------------|---|-------|-------|
| 2691-41-0 | HMX | 11.3 | | 0.172 | 0.538 |
| 2691-41-0 | HMX | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613024.wiff

Date Analyzed: 14-JUN-17 05:52

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|--------|-------|
| 118-96-7 | 2,4,6-Trinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .269 | QU | 0.0882 | 0.269 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .395 | | 0.086 | 0.269 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 479-45-8 | Tetryl | .538 | U | 0.086 | 0.538 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |
| 78-11-5 | PETN | .538 | QU | 0.108 | 0.538 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | .538 | QU | 0.161 | 0.538 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | .561 | J | 0.323 | 1.08 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .604 | | 0.086 | 0.269 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|-------|-------|
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .813 | | 0.086 | 0.269 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 3058-38-6 | TATB | 1.08 | U | 0.323 | 1.08 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.08 | U | 0.323 | 1.08 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.69 | QU | 0.538 | 2.69 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.69 | QU | 0.538 | 2.69 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133357

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741007

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613021.wiff

Date Analyzed: 14-JUN-17 04:07

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|--------|-------|
| 121-82-4 | RDX | .129 | J | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |
| 2691-41-0 | HMX | .13 | J | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .26 | QU | 0.0854 | 0.260 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 479-45-8 | Tetryl | .521 | U | 0.0833 | 0.521 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133357

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741007

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|-------|-------|
| 78-11-5 | PETN | .521 | QU | 0.104 | 0.521 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | .521 | QU | 0.156 | 0.521 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 3058-38-6 | TATB | 1.04 | U | 0.313 | 1.04 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1.04 | U | 0.313 | 1.04 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.04 | U | 0.313 | 1.04 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.6 | QU | 0.521 | 2.60 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.6 | QU | 0.521 | 2.60 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133361

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741010

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608048.wiff

Date Analyzed: 09-JUN-17 20:41

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 2691-41-0 | HMX | .118 | J | 0.086 | 0.269 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 121-82-4 | RDX | .119 | J | 0.086 | 0.269 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .269 | U | 0.0882 | 0.269 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 479-45-8 | Tetryl | .538 | U | 0.086 | 0.538 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133361

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741010

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|-------|-------|
| 78-11-5 | PETN | .538 | U | 0.108 | 0.538 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | .538 | U | 0.161 | 0.538 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 3058-38-6 | TATB | 1.08 | U | 0.323 | 1.08 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1.08 | QU | 0.323 | 1.08 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.08 | U | 0.323 | 1.08 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.69 | U | 0.538 | 2.69 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.69 | U | 0.538 | 2.69 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLCGEL Job No (SDG): 2017-1644Lab Code: GEL

HPLC Column: Ultracarb Phenomenex 5u ODS (20)

| Lab Sample ID | Client Sample ID | DNT | QC Limits | Flg |
|---------------|-----------------------|-----|-----------|-----|
| 424741002 | CAPA-17-133355 | 97 | 55 - 115 | |
| 424741004 | CAPA-17-133362 | 90 | 55 - 115 | |
| 424741005 | CAWA-17-133290DL2 | 89 | 55 - 115 | |
| 424741005 | CAWA-17-133290DL | 101 | 55 - 115 | |
| 424741005 | CAWA-17-133290 | 84 | 55 - 115 | |
| 424741007 | CAPA-17-133357 | 90 | 55 - 115 | |
| 424741010 | CAPA-17-133361 | 98 | 55 - 115 | |
| 1203805555 | MB for batch 1671745 | 102 | 55 - 115 | |
| 1203805556 | LCS for batch 1671745 | 105 | 55 - 115 | |
| 1203805559 | CAWA-17-133288MS | 81 | 55 - 115 | |
| 1203805560 | CAWA-17-133288MSD | 93 | 55 - 115 | |

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Extract Batch Code: 1671745

Date Extracted: 07-JUN-17

GEL LCS ID: 1203805556

GEL LCSDUP ID: .

Analysis Date/Time: 09-JUN-17 23:37

DUP Analysis Date/Time:

Reporting Units: ug/L

QC Type: LCS/LCSD

| Compound | Spike Added | LCS Conc | LCS Rec # | LCSD Conc | LCSD Rec # | RPD # | RPD | Recovery Limits |
|----------------------------|-------------|----------|-----------|-----------|------------|-------|-----|-----------------|
| 1,3,5-Trinitrobenzene | 5 | 4.19 | 84 | | | | | 70 - 110 |
| 2,4,6-Trinitrotoluene | 5 | 4.89 | 98 | | | | | 69 - 113 |
| 2,4-Diamino-6-nitrotoluene | 5 | 3.93 | 79 | | | | | 50 - 121 |
| 2,4-Dinitrotoluene | 5 | 4.41 | 88 | | | | | 71 - 110 |
| 2,6-Diamino-4-nitrotoluene | 5 | 4.21 | 84 | | | | | 53 - 127 |
| 2,6-Dinitrotoluene | 5 | 5.31 | 106 * | | | | | 72 - 105 |
| 2-Amino-4,6-dinitrotoluene | 5 | 4.52 | 90 | | | | | 70 - 112 |
| 3,5-Dinitroaniline | 5 | 6.02 | 120 | | | | | 70 - 121 |
| 4-Amino-2,6-dinitrotoluene | 5 | 4.76 | 95 | | | | | 74 - 116 |
| HMX | 5 | 3.92 | 78 | | | | | 58 - 113 |
| Nitrobenzene | 5 | 4.52 | 90 | | | | | 64 - 115 |
| PETN | 5 | 4.8 | 96 | | | | | 57 - 126 |
| RDX | 5 | 4 | 80 | | | | | 64 - 117 |
| TATB | 2.5 | 3.76 | 150 * | | | | | 47 - 135 |
| Tetryl | 5 | 4.01 | 80 | | | | | 64 - 122 |
| m-Dinitrobenzene | 5 | 4.66 | 93 | | | | | 74 - 117 |
| m-Nitrotoluene | 5 | 4.63 | 93 | | | | | 66 - 114 |
| o-Nitrotoluene | 5 | 4.49 | 90 | | | | | 64 - 115 |
| p-Nitrotoluene | 5 | 4.84 | 97 | | | | | 66 - 127 |
| tris(o-cresyl) phosphate | 5 | 3.64 | 73 | | | | | 43 - 104 |

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

3
High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAWA-17-133288

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Extract Batch Code: 1671745

Date Extracted: 07-JUN-17

GEL Spike ID: 1203805559

GEL SpikeDup ID: 1203805560

Analysis Date/Time: 10-JUN-17 02:32

MSD Analysis Date/Time: 10-JUN-17 03:07

Reporting Units: ug/L

QC Type: MS/MSD

| Compound | Spike Added | Sample Conc | MS Conc | MS Rec # | MSD Conc | MSD Rec # | RPD # | RPD Limit | Rec Limits |
|----------------------------|-------------|-------------|---------|----------|----------|-----------|-------|-----------|------------|
| 1,3,5-Trinitrobenzene | 5.20833 | 0 | 4.34 | 83 | 4.11 | 79 | 5 | 30 | 67 - 111 |
| 2,4,6-Trinitrotoluene | 5.20833 | .0975 | 4.56 | 86 | 4.59 | 86 | 0 | 30 | 66 - 112 |
| 2,4-Diamino-6-nitrotoluene | 5.20833 | 0 | 5.74 | 110 | 6.16 | 118 | 7 | 30 | 50 - 121 |
| 2,4-Dinitrotoluene | 5.20833 | .0404 | 4.61 | 88 | 5.19 | 99 | 12 | 30 | 69 - 113 |
| 2,6-Diamino-4-nitrotoluene | 5.20833 | 0 | 5.42 | 104 | 5.58 | 107 | 3 | 30 | 53 - 127 |
| 2,6-Dinitrotoluene | 5.20833 | 0 | 4.49 | 86 | 4.26 | 82 | 5 | 30 | 70 - 106 |
| 2-Amino-4,6-dinitrotoluene | 5.20833 | .342 | 4.46 | 79 | 4.7 | 84 | 5 | 30 | 67 - 115 |
| 3,5-Dinitroaniline | 5.20833 | .103 | 5.81 | 110 | 5.72 | 108 | 2 | 30 | 70 - 121 |
| 4-Amino-2,6-dinitrotoluene | 5.20833 | .446 | 4.76 | 83 | 5.32 | 94 | 11 | 30 | 65 - 120 |
| HMX | 5.20833 | 1.69 | 6.44 | 91 | 6.47 | 92 | 1 | 30 | 44 - 128 |
| Nitrobenzene | 5.20833 | 0 | 4.27 | 82 | 4 | 77 | 6 | 30 | 62 - 116 |
| PETN | 5.20833 | 0 | 4.52 | 87 | 4.21 | 81 | 7 | 30 | 51 - 131 |
| RDX | 5.20833 | 21.2 | 26.4 | 100 | 22.2 | 20 * | 17 | 30 | 57 - 125 |
| TATB | 2.60417 | 0 | 3.88 | 149 | 3.97 | 152 * | 2 | 30 | 38 - 149 |
| Tetryl | 5.20833 | 0 | 3.82 | 73 | 3.79 | 73 | 1 | 30 | 50 - 126 |
| m-Dinitrobenzene | 5.20833 | 0 | 4.93 | 95 | 4.53 | 87 | 8 | 30 | 74 - 117 |
| m-Nitrotoluene | 5.20833 | 0 | 4.09 | 78 | 3.95 | 76 | 3 | 30 | 59 - 120 |
| o-Nitrotoluene | 5.20833 | 0 | 4.64 | 89 | 4.01 | 77 | 15 | 30 | 56 - 119 |
| p-Nitrotoluene | 5.20833 | 0 | 4.8 | 92 | 4.24 | 81 | 12 | 30 | 61 - 129 |
| tris(o-cresyl) phosphate | 5.20833 | 0 | 3.68 | 71 | 3.71 | 71 | 1 | 30 | 38 - 105 |

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805555

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608029.wiff

Date Analyzed: 09-JUN-17 09:35

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|-------|-------|
| 118-96-7 | 2,4,6-Trinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 121-82-4 | RDX | .25 | U | 0.080 | 0.250 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 2691-41-0 | HMX | .25 | U | 0.080 | 0.250 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .25 | U | 0.082 | 0.250 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .25 | U | 0.080 | 0.250 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .25 | U | 0.080 | 0.250 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .25 | U | 0.080 | 0.250 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 479-45-8 | Tetryl | .5 | U | 0.080 | 0.500 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805555

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|-------|-------|
| 78-11-5 | PETN | .5 | U | 0.100 | 0.500 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | .5 | U | 0.150 | 0.500 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 3058-38-6 | TATB | 1 | U | 0.300 | 1.00 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1 | QU | 0.300 | 1.00 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1 | U | 0.300 | 1.00 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.5 | U | 0.500 | 2.50 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.5 | U | 0.500 | 2.50 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805556

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608053.wiff

Date Analyzed: 09-JUN-17 23:37

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|---|-------|-------|
| 78-30-8 | tris(o-cresyl) phosphate | 3.64 | | 0.300 | 1.00 |
| 78-30-8 | tris(o-cresyl) phosphate | | | | |
| 3058-38-6 | TATB | 3.76 | | 0.300 | 1.00 |
| 3058-38-6 | TATB | | | | |
| 2691-41-0 | HMX | 3.92 | | 0.080 | 0.250 |
| 2691-41-0 | HMX | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 3.93 | | 0.500 | 2.50 |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | | | | |
| 121-82-4 | RDX | 4 | | 0.080 | 0.250 |
| 121-82-4 | RDX | | | | |
| 479-45-8 | Tetryl | 4.01 | | 0.080 | 0.500 |
| 479-45-8 | Tetryl | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | 4.19 | | 0.080 | 0.250 |
| 99-35-4 | 1,3,5-Trinitrobenzene | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 4.21 | | 0.500 | 2.50 |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | 4.41 | | 0.080 | 0.250 |
| 121-14-2 | 2,4-Dinitrotoluene | | | | |
| 88-72-2 | o-Nitrotoluene | 4.49 | | 0.082 | 0.250 |
| 88-72-2 | o-Nitrotoluene | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | 4.52 | | 0.080 | 0.250 |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | | | | |
| 98-95-3 | Nitrobenzene | 4.52 | | 0.080 | 0.250 |
| 98-95-3 | Nitrobenzene | | | | |
| 99-08-1 | m-Nitrotoluene | 4.63 | | 0.080 | 0.250 |
| 99-08-1 | m-Nitrotoluene | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805556

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|-------|-------|
| 99-65-0 | m-Dinitrobenzene | 4.66 | | 0.080 | 0.250 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | 4.76 | | 0.080 | 0.250 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 78-11-5 | PETN | 4.8 | | 0.100 | 0.500 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | 4.84 | | 0.150 | 0.500 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | 4.89 | | 0.080 | 0.250 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | 5.31 | | 0.080 | 0.250 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 6.02 | | 0.300 | 1.00 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MS)MS

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805559

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608058.wiff

Date Analyzed: 10-JUN-17 02:32

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|---|--------|-------|
| 78-30-8 | tris(o-cresyl) phosphate | 3.68 | | 0.313 | 1.04 |
| 78-30-8 | tris(o-cresyl) phosphate | | | | |
| 479-45-8 | Tetryl | 3.82 | | 0.0833 | 0.521 |
| 479-45-8 | Tetryl | | | | |
| 3058-38-6 | TATB | 3.88 | | 0.313 | 1.04 |
| 3058-38-6 | TATB | | | | |
| 99-08-1 | m-Nitrotoluene | 4.09 | | 0.0833 | 0.260 |
| 99-08-1 | m-Nitrotoluene | | | | |
| 98-95-3 | Nitrobenzene | 4.27 | | 0.0833 | 0.260 |
| 98-95-3 | Nitrobenzene | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | 4.34 | | 0.0833 | 0.260 |
| 99-35-4 | 1,3,5-Trinitrobenzene | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | 4.46 | | 0.0833 | 0.260 |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | 4.49 | | 0.0833 | 0.260 |
| 606-20-2 | 2,6-Dinitrotoluene | | | | |
| 78-11-5 | PETN | 4.52 | | 0.104 | 0.521 |
| 78-11-5 | PETN | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | 4.56 | | 0.0833 | 0.260 |
| 118-96-7 | 2,4,6-Trinitrotoluene | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | 4.61 | | 0.0833 | 0.260 |
| 121-14-2 | 2,4-Dinitrotoluene | | | | |
| 88-72-2 | o-Nitrotoluene | 4.64 | | 0.0854 | 0.260 |
| 88-72-2 | o-Nitrotoluene | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | 4.76 | | 0.0833 | 0.260 |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MS)MS

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805559

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 99-99-0 | p-Nitrotoluene | 4.8 | | 0.156 | 0.521 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | 4.93 | | 0.0833 | 0.260 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 5.42 | | 0.521 | 2.60 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 5.74 | | 0.521 | 2.60 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 5.81 | | 0.313 | 1.04 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 2691-41-0 | HMX | 6.44 | | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 121-82-4 | RDX | 26.4 | | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805560

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608059.wiff

Date Analyzed: 10-JUN-17 03:07

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|---|--------|-------|
| 78-30-8 | tris(o-cresyl) phosphate | 3.71 | | 0.313 | 1.04 |
| 78-30-8 | tris(o-cresyl) phosphate | | | | |
| 479-45-8 | Tetryl | 3.79 | | 0.0833 | 0.521 |
| 479-45-8 | Tetryl | | | | |
| 99-08-1 | m-Nitrotoluene | 3.95 | | 0.0833 | 0.260 |
| 99-08-1 | m-Nitrotoluene | | | | |
| 3058-38-6 | TATB | 3.97 | | 0.313 | 1.04 |
| 3058-38-6 | TATB | | | | |
| 98-95-3 | Nitrobenzene | 4 | | 0.0833 | 0.260 |
| 98-95-3 | Nitrobenzene | | | | |
| 88-72-2 | o-Nitrotoluene | 4.01 | | 0.0854 | 0.260 |
| 88-72-2 | o-Nitrotoluene | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | 4.11 | | 0.0833 | 0.260 |
| 99-35-4 | 1,3,5-Trinitrobenzene | | | | |
| 78-11-5 | PETN | 4.21 | | 0.104 | 0.521 |
| 78-11-5 | PETN | | | | |
| 99-99-0 | p-Nitrotoluene | 4.24 | | 0.156 | 0.521 |
| 99-99-0 | p-Nitrotoluene | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | 4.26 | | 0.0833 | 0.260 |
| 606-20-2 | 2,6-Dinitrotoluene | | | | |
| 99-65-0 | m-Dinitrobenzene | 4.53 | | 0.0833 | 0.260 |
| 99-65-0 | m-Dinitrobenzene | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | 4.59 | | 0.0833 | 0.260 |
| 118-96-7 | 2,4,6-Trinitrotoluene | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | 4.7 | | 0.0833 | 0.260 |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805560

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 121-14-2 | 2,4-Dinitrotoluene | 5.19 | | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | 5.32 | | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 5.58 | | 0.521 | 2.60 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 5.72 | | 0.313 | 1.04 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 6.16 | | 0.521 | 2.60 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |
| 2691-41-0 | HMX | 6.47 | | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 121-82-4 | RDX | 22.2 | | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 08-JUN-17 17:13GEL Data File: EXP0608001.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 08-JUN-17 17:48GEL Data File: EXP0608002.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 13-JUN-17 16:25GEL Data File: EXP0613001.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 26.23 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MXN | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 13-JUN-17 17:00GEL Data File: EXP0613002.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 08-JUN-17 22:28

GEL Data File: EXP0608010.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| Nitrobenzene | 0 | 1.42 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 7.06 |
| 3,4-Dinitrotoluene | 0 | 3.64 |
| tris(o-cresyl) phosphate | 0 | 4.72 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 3.86 |
| 2,4-Diamino-6-nitrotoluene | 0 | 4.19 |
| 2,6-Diamino-4-nitrotoluene | 0 | 4.27 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 3.53 |
| 1,3,5-Trinitrobenzene | 0 | 3.75 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 4 |
| 2-Amino-4,6-dinitrotoluene | 0 | 3.41 |
| 4-Amino-2,6-dinitrotoluene | 0 | 3.74 |
| HMX | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 09-JUN-17 00:49

GEL Data File: EXP0608014.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 3.17 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MXN | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 09-JUN-17 04:54

GEL Data File: EXP0608021.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MXN | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 09-JUN-17 07:15

GEL Data File: EXP0608025.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 09-JUN-17 08:25

GEL Data File: EXP0608027.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 09-JUN-17 14:51

GEL Data File: EXP0608038.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 2.44 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 09-JUN-17 16:01

GEL Data File: EXP0608040.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 09-JUN-17 21:16

GEL Data File: EXP0608049.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK10

Analysis Date: 09-JUN-17 22:27

GEL Data File: EXP0608051.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK11

Analysis Date: 10-JUN-17 03:42

GEL Data File: EXP0608060.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 2.54 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK12

Analysis Date: 10-JUN-17 05:28

GEL Data File: EXP0608063.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 13-JUN-17 21:41

GEL Data File: EXP0613010.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 2.28 |
| tris(o-cresyl) phosphate | 0 | 2.63 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 2.41 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 2.98 |
| 4-Amino-2,6-dinitrotoluene | 0 | 2.62 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 14-JUN-17 00:01

GEL Data File: EXP0613014.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 14-JUN-17 03:31

GEL Data File: EXP0613020.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 14-JUN-17 06:27

GEL Data File: EXP0613025.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 15.29 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 14-JUN-17 07:37

GEL Data File: EXP0613027.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 2.56 |
| Tetryl | 0 | 0 |

Miscellaneous

| DATA EXCEPTION REPORT | | | |
|--|--|---|-----------------------------|
| Mo.Day Yr. 14-JUN-17 | Division: Industrial | Quality Criteria: Specifications | Type: Process |
| Instrument Type: LC-MS/MS | Test / Method: SW846 3535A/8330B | Matrix Type: Liquid | Client Code: ESHL |
| Batch ID: 1671746 | Sample Numbers: See Below | | |
| Potentially affected work order(s)(SDG): 424596(2017-1633),424732(2017-1648),424735(2017-1647),424739(2017-1645),424741(2017-1644) Application Issues: Failed Recovery for MS/MSD, or PS/PSD Failed Recovery for LCS/LCSD | | | |
| Specification and Requirements | | DER Disposition: | |
| Exception Description: | | | |
| 1. Two high recoveries were observed for 1203805556 (LCS). The recovery for 2,6-Dinitrotoluene was 106% (72%-105%) and for TATB, the recovery was 150% (47-135%). 2. A high recovery was observed for 1203805559 (MS). The recovery for TATB was 152% (38%-149%). | | 1. The high recoveries may be the result of vagaries in the extraction process and would suggest bias high detections. No reportable detections were observed in the associated samples. 2. The high recovery may be the result of vagaries in the extraction process. The high recovery was also observed in the batch LCS. No reportable detections were observed in the associated samples. | |

Originator's Name:

Charles Wilson 14-JUN-17

Data Validator/Group Leader:

Michael Penny 14-JUN-17

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741

| Sample ID | Client ID |
|------------------|---|
| 424741001 | CAPA-17-133353 |
| 424741002 | CAPA-17-133355 |
| 424741003 | CAPA-17-133360 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741006 | CAWA-17-133318 |
| 424741007 | CAPA-17-133357 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 424741010 | CAPA-17-133361 |
| 1203805071 | Method Blank (MB) ICP |
| 1203805072 | Laboratory Control Sample (LCS) |
| 1203805075 | 424741001(CAPA-17-133353L) Serial Dilution (SD) |
| 1203805073 | 424741001(CAPA-17-133353D) Sample Duplicate (DUP) |
| 1203805074 | 424741001(CAPA-17-133353S) Matrix Spike (MS) |
| 1203805126 | Method Blank (MB) ICP-MS |
| 1203805127 | Laboratory Control Sample (LCS) |
| 1203805130 | 424741001(CAPA-17-133353L) Serial Dilution (SD) |
| 1203805128 | 424741001(CAPA-17-133353D) Sample Duplicate (DUP) |
| 1203805129 | 424741001(CAPA-17-133353S) Matrix Spike (MS) |
| 1203811029 | Method Blank (MB) CVAA |
| 1203811030 | Laboratory Control Sample (LCS) |
| 1203811035 | 424741001(CAPA-17-133353L) Serial Dilution (SD) |
| 1203811031 | 424741001(CAPA-17-133353D) Sample Duplicate (DUP) |
| 1203811033 | 424741001(CAPA-17-133353S) Matrix Spike (MS) |

Sample Analysis

Samples 424741001,002,003,004,005,006,007,008,009 and 010 in this SDG were analyzed for metals and mercury on an "as received" basis.

Method/Analysis Information

| | |
|---------------------------------------|--|
| Analytical Batch: | 1671565, 1671589, 1673857 and 1677435 |
| Prep Batch : | 1671563, 1671587 and 1673856 |
| Standard Operating Procedures: | GL-MA-E-013 REV# 28, GL-MA-E-006 REV# 13, GL-MA-E-014 REV# 29, GL-MA-E-010 REV# 34 and GL-GC-E-107 REV# 10 |
| Analytical Method: | SW846 3005A/6010C, SW846 3005A/6020A, EPA 245.2 1974 and SM:A2340B |
| Prep Method : | SW846 3005A and EPA 245.1/245.2 Prep |

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Hardness as CaCO₃ is calculated from Calcium and Magnesium results.

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm.

The Metals analysis - ICPMS was performed on a PerkinElmer NexION 300X ICPMS. The instrument is equipped with a ESI PFA-ST nebulizer, quadrupole mass spectrometer, dual mode electron multiplier detector, and Kinetic Energy Discrimination (KED) technology. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum.

Calibration Information

Instrument Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of potassium, sodium and zinc. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360), 424741006 (CAWA-17-133318), 424741007 (CAPA-17-133357), 424741008 (CAPA-17-133358), 424741009 (CAPA-17-133359) and 424741010 (CAPA-17-133361)-ICP.

ICSA/ICSAB Statement

All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria. For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Continuing Calibration Blanks (CCB) Requirements

All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements

All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement

The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement

The following samples were selected as the quality control (QC) samples for this SDG: 424741001 (CAPA-17-133353)-ICP, ICP-MS and CVAA.

Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes.

Duplicate Relative Percent Difference (RPD) Statement

The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. The relative percent differences (RPD) between the sample and its duplicate (DUP) were within acceptable limits for all applicable analytes.

Serial Dilution % Difference Statement

All applicable analytes in the serial dilution (SDILT) demonstrated acceptable correlation to its associated sample and met the established acceptance percent difference criteria.

Technical Information**Holding Time Specifications**

GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Preparation Information

The samples in this SDG were not diluted and were prepared according to the cited SOP.

Miscellaneous Information**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

A data exception report was not required for this SDG.

Additional Comments

Total Hardness by Calculation is determined using the results of Total Calcium (Ca) and Total Magnesium (Mg) determined by ICP or ICP-MS.

Hardness = 2.497 (Ca) + 4.118 (Mg)

Please refer to the Total Ca and Total Mg data to validate results appearing on the Hardness Summary sheet. Both results are in the Inorganic/metals section of the package. There is no Batch QC for calculated results, and thus no QC Summary for the Hardness by Calculation Batch. The MDLs and PQLs are calculated using the higher of the two calculated values of Ca or Mg.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:



Name: Nik-Cole Elmore

Date: 26 JUN 2017

Title: Data Validator

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741001**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133353**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:31 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741001

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133353

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 664 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 56.6 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 17.3 | ug/L | J | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 15700 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 325 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:01 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 4110 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 10 | ug/L | U | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.948 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 0.812 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2930 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 40500 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 19600 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 95.7 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:01 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.184 | ug/L | J | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:01 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 3.28 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741001**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133353**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 56.2 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741002**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133355**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:39 | 061517W1-7 | 1673857 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741003**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133360**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:41 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741003

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133360

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 701 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 55.4 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 15.9 | ug/L | J | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 15400 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 337 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:26 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 4050 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 10 | ug/L | U | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.931 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2860 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 39700 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 19900 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 94.4 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:26 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 2.62 | ug/L | J | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.180 | ug/L | J | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:26 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.45 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741003**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133360**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 55.3 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741004**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133362**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:43 | 061517W1-7 | 1673857 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741005**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAWA-17-133290**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:48 | 061517W1-7 | 1673857 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741006**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAWA-17-133318**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:50 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741006

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAWA-17-133318

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 157 | ug/L | J | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 2.72 | ug/L | J | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 144 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 918 | ug/L | | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 24400 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 99.3 | ug/L | J | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:29 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 5400 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 10 | ug/L | U | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 2.63 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2910 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 52900 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 34600 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 121 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:29 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 2.68 | ug/L | J | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 1.14 | ug/L | | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:29 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 4.15 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741006**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAWA-17-133318**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 83.1 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741007**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133357**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:51 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741007

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133357

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 1470 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 43.2 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9770 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 769 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 0.510 | ug/L | J | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:33 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 3060 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 5.96 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.580 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.35 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2700 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-22-4 | Silver | 0.348 | ug/L | J | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 11900 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 74.3 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:33 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 2.92 | ug/L | J | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:33 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.58 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741007**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133357**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 37 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741008**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133358**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:53 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741008

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133358

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 774 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 38.8 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9390 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 398 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:36 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 2890 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 2.35 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.641 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.08 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2540 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 33600 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 11700 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 69.3 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:36 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:36 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.32 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741008**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133358**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 35.4 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741009**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133359**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:55 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741009

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133359

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 967 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 39.8 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9550 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 481 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:39 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 2930 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 2.77 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.555 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.03 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2600 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 34700 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 12000 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 70.6 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:39 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:39 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.31 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741009**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133359**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 35.9 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741010**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133361**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:56 | 061517W1-7 | 1673857 |

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741010

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133361

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 1490 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 2.02 | ug/L | J | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 42.8 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9760 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 786 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 0.538 | ug/L | J | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:42 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 3050 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 5.94 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.678 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.58 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2740 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-22-4 | Silver | 0.377 | ug/L | J | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 12000 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 74.5 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:42 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:42 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.74 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741010**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133361**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 36.9 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

Quality Control Summary

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 2017-1644

Contract: ESHL00114

Matrix: W

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>Acceptance Window</u> | <u>Conc Qual</u> | <u>M*</u> | <u>MDL</u> | <u>RDL</u> |
|------------------|----------------|---------------|--------------|--------------------------|------------------|-----------|------------|------------|
| 1203805071 | Potassium | 50 | ug/L | +/-150 | U | P | 50 | 150 |
| | Silica | 53 | ug/L | +/-213 | U | P | 53 | 213 |
| | Sodium | 100 | ug/L | +/-300 | U | P | 100 | 300 |
| | Strontium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Tin | 2.5 | ug/L | +/-10 | U | P | 2.5 | 10 |
| | Barium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Boron | 15 | ug/L | +/-50 | U | P | 15 | 50 |
| | Cobalt | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Iron | 30 | ug/L | +/-100 | U | P | 30 | 100 |
| | Manganese | 2 | ug/L | +/-10 | U | P | 2 | 10 |
| | Magnesium | 110 | ug/L | +/-300 | U | P | 110 | 300 |
| | Copper | 3 | ug/L | +/-10 | U | P | 3 | 10 |
| | Calcium | 50 | ug/L | +/-200 | U | P | 50 | 200 |
| | Beryllium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Aluminum | 68 | ug/L | +/-200 | U | P | 68 | 200 |
| | Vanadium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Zinc | -4.22 | ug/L | +/-10 | J | P | 3.3 | 10 |
| 1203805126 | Antimony | 1 | ug/L | +/-3 | U | MS | 1 | 3 |
| | Arsenic | 2 | ug/L | +/-5 | U | MS | 2 | 5 |
| | Cadmium | 0.3 | ug/L | +/-1 | U | MS | 0.3 | 1 |
| | Chromium | 3 | ug/L | +/-10 | U | MS | 3 | 10 |
| | Lead | 0.5 | ug/L | +/-2 | U | MS | 0.5 | 2 |
| | Molybdenum | 0.2 | ug/L | +/-0.5 | U | MS | 0.2 | 0.5 |
| | Nickel | 0.6 | ug/L | +/-2 | U | MS | 0.6 | 2 |
| | Selenium | 2 | ug/L | +/-5 | U | MS | 2 | 5 |
| | Silver | 0.3 | ug/L | +/-1 | U | MS | 0.3 | 1 |
| | Thallium | 0.6 | ug/L | +/-2 | U | MS | 0.6 | 2 |
| | Uranium | 0.067 | ug/L | +/-0.2 | U | MS | 0.067 | 0.2 |
| 1203811029 | Mercury | 0.067 | ug/L | +/-0.2 | U | AV | 0.067 | 0.2 |

*Analytical Methods:

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.1/245.2

METALS

-5a-

Matrix Spike Summary

SDG NO. 2017-1644

Client ID: CAPA-17-133353S

Contract: ESHL00114

Level: Low

Matrix: WATER

% Solids:

Sample ID: 424741001

Spike ID: 1203805074

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance Limit</u> | <u>Spiked Result</u> | <u>C</u> | <u>Sample Result</u> | <u>C</u> | <u>Spike Added</u> | <u>% Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Aluminum | ug/L | 75-125 | 5750 | | 664 | | 5000 | 102 | | P |
| Barium | ug/L | 75-125 | 548 | | 56.6 | | 500 | 98.3 | | P |
| Beryllium | ug/L | 75-125 | 498 | | 1 | U | 500 | 99.6 | | P |
| Boron | ug/L | 75-125 | 531 | | 17.3 | J | 500 | 103 | | P |
| Calcium | ug/L | 75-125 | 20700 | | 15700 | | 5000 | 99.5 | | P |
| Cobalt | ug/L | 75-125 | 491 | | 1 | U | 500 | 98.3 | | P |
| Copper | ug/L | 75-125 | 520 | | 3 | U | 500 | 104 | | P |
| Iron | ug/L | 75-125 | 5370 | | 325 | | 5000 | 101 | | P |
| Magnesium | ug/L | 75-125 | 9090 | | 4110 | | 5000 | 99.4 | | P |
| Manganese | ug/L | 75-125 | 493 | | 2 | U | 500 | 98.3 | | P |
| Potassium | ug/L | 75-125 | 8010 | | 2930 | | 5000 | 102 | | P |
| Silica | ug/L | 75-125 | 51700 | | 40500 | | 10700 | 105 | | P |
| Sodium | ug/L | 75-125 | 25600 | | 19600 | | 5000 | 119 | | P |
| Strontium | ug/L | 75-125 | 601 | | 95.7 | | 500 | 101 | | P |
| Tin | ug/L | 75-125 | 496 | | 2.5 | U | 500 | 98.8 | | P |
| Vanadium | ug/L | 75-125 | 511 | | 3.28 | J | 500 | 101 | | P |
| Zinc | ug/L | 75-125 | 469 | | 3.3 | U | 500 | 93.8 | | P |

*Analytical Methods:

P SW846 3005A/6010C

METALS

-5a-

Matrix Spike Summary

SDG NO. 2017-1644 Client ID: CAPA-17-133353S

Contract: ESHL00114 Level: Low

Matrix: WATER % Solids:

Sample ID: 424741001 Spike ID: 1203805129

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance Limit</u> | <u>Spiked Result</u> | <u>C</u> | <u>Sample Result</u> | <u>C</u> | <u>Spike Added</u> | <u>% Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Antimony | ug/L | 75-125 | 50.1 | | 1 | U | 50 | 99.8 | | MS |
| Arsenic | ug/L | 75-125 | 52 | | 2 | U | 50 | 100 | | MS |
| Cadmium | ug/L | 75-125 | 49.9 | | 0.3 | U | 50 | 99.9 | | MS |
| Chromium | ug/L | 75-125 | 49.6 | | 3 | U | 50 | 97.4 | | MS |
| Lead | ug/L | 75-125 | 47.4 | | 0.5 | U | 50 | 94.5 | | MS |
| Nickel | ug/L | 75-125 | 49.1 | | 0.812 | J | 50 | 96.5 | | MS |
| Selenium | ug/L | 75-125 | 47 | | 2 | U | 50 | 92 | | MS |
| Silver | ug/L | 75-125 | 50.2 | | 0.3 | U | 50 | 100 | | MS |
| Thallium | ug/L | 75-125 | 43.9 | | 0.6 | U | 50 | 87.8 | | MS |
| Uranium | ug/L | 75-125 | 46.6 | | 0.184 | J | 50 | 92.8 | | MS |
| Molybdenum | ug/L | 75-125 | 51.9 | | 0.948 | | 50 | 102 | | MS |

*Analytical Methods:

MS SW846 3005A/6020A

METALS

-5a-

Matrix Spike Summary

SDG NO. 2017-1644 **Client ID:** CAPA-17-133353S**Contract:** ESHL00114 **Level:** Low**Matrix:** WATER **% Solids:****Sample ID:** 424741001 **Spike ID:** 1203811033

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance Limit</u> | <u>Spiked Result</u> | <u>C</u> | <u>Sample Result</u> | <u>C</u> | <u>Spike Added</u> | <u>% Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Mercury | ug/L | 75-125 | 2.08 | | 0.067 | U | 2 | 104 | | AV |

*Analytical Methods:

AV EPA 245.1/245.2

Metals
–6–
Duplicate Sample Summary

SDG No.: 2017–1644

Lab Code: GEL

Contract: ESHL00114

Client ID: CAPA–17–133353D

Matrix: WATER

Level: Low

Sample ID: 424741001

Duplicate ID: 1203805073

Percent Solids for Dup: N/A

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M* |
|-----------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Aluminum | ug/L | +/-200 | 664 | | 647 | | 2.55 | | P |
| Barium | ug/L | +/-20% | 56.6 | | 56 | | 1.16 | | P |
| Beryllium | ug/L | | 1 U | | 1 U | | | | P |
| Boron | ug/L | +/-50 | 17.3 J | | 16.2 J | | 6.54 | | P |
| Calcium | ug/L | +/-20% | 15700 | | 15500 | | 1.48 | | P |
| Cobalt | ug/L | | 1 U | | 1 U | | | | P |
| Copper | ug/L | | 3 U | | 3 U | | | | P |
| Iron | ug/L | +/-100 | 325 | | 324 | | .401 | | P |
| Magnesium | ug/L | +/-20% | 4110 | | 4050 | | 1.64 | | P |
| Manganese | ug/L | | 2 U | | 2 U | | | | P |
| Potassium | ug/L | +/-20% | 2930 | | 2870 | | 2.21 | | P |
| Silica | ug/L | +/-20% | 40500 | | 39700 | | 2.01 | | P |
| Sodium | ug/L | +/-20% | 19600 | | 20000 | | 1.78 | | P |
| Strontium | ug/L | +/-20% | 95.7 | | 94.9 | | .858 | | P |
| Tin | ug/L | | 2.5 U | | 2.5 U | | | | P |
| Vanadium | ug/L | +/-5 | 3.28 J | | 2.3 J | | 34.9 | | P |
| Zinc | ug/L | | 3.3 U | | 3.3 U | | | | P |

*Analytical Methods:

P SW846 3005A/6010C

Metals
-6-
Duplicate Sample Summary

SDG No.: 2017-1644

Lab Code: GEL

Contract: ESHL00114

Client ID: CAPA-17-133353D

Matrix: WATER

Level: Low

Sample ID: 424741001

Duplicate ID: 1203805128

Percent Solids for Dup: N/A

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M* |
|------------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Antimony | ug/L | | 1 U | | 1 U | | | | MS |
| Arsenic | ug/L | | 2 U | | 2 U | | | | MS |
| Cadmium | ug/L | | 0.3 U | | 0.3 U | | | | MS |
| Chromium | ug/L | | 3 U | | 3 U | | | | MS |
| Lead | ug/L | | 0.5 U | | 0.5 U | | | | MS |
| Molybdenum | ug/L | +/- .5 | 0.948 | | 0.933 | | 1.59 | | MS |
| Nickel | ug/L | | 0.812 J | | 0.6 U | | 200 | | MS |
| Selenium | ug/L | | 2 U | | 2 U | | | | MS |
| Silver | ug/L | | 0.3 U | | 0.3 U | | | | MS |
| Thallium | ug/L | | 0.6 U | | 0.6 U | | | | MS |
| Uranium | ug/L | +/- .2 | 0.184 J | | 0.177 J | | 3.88 | | MS |

*Analytical Methods:

MS SW846 3005A/6020A

Metals
–6–
Duplicate Sample Summary

SDG No.: 2017–1644**Lab Code:** GEL**Contract:** ESHL00114**Client ID:** CAPA–17–133353D**Matrix:** WATER**Level:** Low**Sample ID:** 424741001**Duplicate ID:** 1203811031**Percent Solids for Dup:** N/A

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M* |
|----------------|--------------|-----------------------------|--------------------------|----------|-----------------------------|----------|------------|-------------|-----------|
| Mercury | ug/L | | 0.067 | U | 0.067 | U | | | AV |

*Analytical Methods:

AV EPA 245.1/245.2

METALS

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Laboratory Control Sample Summary

SDG NO. 2017-1644

Contract: ESHL00114

Aqueous LCS Source:OS2I

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203805072 | | | | | | | | |
| | Aluminum | ug/L | 5000 | 5130 | | 103 | 80-120 | P |
| | Barium | ug/L | 500 | 505 | | 101 | 80-120 | P |
| | Beryllium | ug/L | 500 | 503 | | 101 | 80-120 | P |
| | Boron | ug/L | 500 | 514 | | 103 | 80-120 | P |
| | Calcium | ug/L | 5000 | 5070 | | 101 | 80-120 | P |
| | Cobalt | ug/L | 500 | 511 | | 102 | 80-120 | P |
| | Copper | ug/L | 500 | 520 | | 104 | 80-120 | P |
| | Iron | ug/L | 5000 | 5120 | | 102 | 80-120 | P |
| | Magnesium | ug/L | 5000 | 5170 | | 103 | 80-120 | P |
| | Manganese | ug/L | 500 | 510 | | 102 | 80-120 | P |
| | Potassium | ug/L | 5000 | 5150 | | 103 | 80-120 | P |
| | Silica | ug/L | 10700 | 10600 | | 99.1 | 80-120 | P |
| | Sodium | ug/L | 5000 | 5490 | | 110 | 80-120 | P |
| | Strontium | ug/L | 500 | 515 | | 103 | 80-120 | P |
| | Tin | ug/L | 500 | 499 | | 99.9 | 80-120 | P |
| | Vanadium | ug/L | 500 | 512 | | 102 | 80-120 | P |
| | Zinc | ug/L | 500 | 479 | | 95.8 | 80-120 | P |

*Analytical Methods:

P SW846 3005A/6010C

METALS

-7-

Laboratory Control Sample Summary

SDG NO. 2017-1644

Contract: ESHL00114

Aqueous LCS Source:O2Si

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203805127 | | | | | | | | |
| | Antimony | ug/L | 50 | 50.4 | | 101 | 80-120 | MS |
| | Arsenic | ug/L | 50 | 53.3 | | 107 | 80-120 | MS |
| | Cadmium | ug/L | 50 | 50.5 | | 101 | 80-120 | MS |
| | Chromium | ug/L | 50 | 51.8 | | 104 | 80-120 | MS |
| | Lead | ug/L | 50 | 49.5 | | 99 | 80-120 | MS |
| | Molybdenum | ug/L | 50 | 49.8 | | 99.6 | 80-120 | MS |
| | Nickel | ug/L | 50 | 51.9 | | 104 | 80-120 | MS |
| | Silver | ug/L | 50 | 50.7 | | 101 | 80-120 | MS |
| | Thallium | ug/L | 50 | 45.1 | | 90.3 | 80-120 | MS |
| | Uranium | ug/L | 50 | 47.2 | | 94.5 | 80-120 | MS |
| | Selenium | ug/L | 50 | 51.2 | | 102 | 80-120 | MS |

*Analytical Methods:

MS SW846 3005A/6020A

METALS

-7-

Laboratory Control Sample Summary

SDG NO. 2017-1644

Contract: ESHL00114

Aqueous LCS Source: GEL

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203811030 | Mercury | ug/L | 2 | 2.08 | | 104 | 85-115 | AV |

*Analytical Methods:

AV EPA 245.1/245.2

METALS

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Serial Dilution Sample Summary

SDG NO. 2017-1644

Client ID: CAPA-17-133353L

Contract: ESHL00114

Matrix: LIQUID

Level: Low

Sample ID: 424741001

Serial Dilution ID: 1203805075

| <u>Analyte</u> | <u>Initial Value ug/L</u> | <u>C</u> | <u>Serial Value ug/L</u> | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Aluminum | 664 | | 679 | J | 2.358 | | | P |
| Barium | 56.6 | | 57.7 | | 1.911 | | 10 | P |
| Beryllium | 1 | U | 5 | U | | | | P |
| Boron | 17.3 | J | 75 | U | 52.718 | | | P |
| Calcium | 15700 | | 16100 | | 2.573 | | 10 | P |
| Cobalt | 1 | U | 5 | U | | | | P |
| Copper | 3 | U | 15 | U | | | | P |
| Iron | 325 | | 339 | J | 4.313 | | | P |
| Magnesium | 4110 | | 4070 | | 1.058 | | | P |
| Manganese | 2 | U | 10 | U | | | | P |
| Potassium | 2930 | | 3030 | | 3.494 | | 10 | P |
| Silica | 40500 | | 40100 | | .913 | | 10 | P |
| Sodium | 19600 | | 20700 | | 5.351 | | 10 | P |
| Strontium | 95.7 | | 98.4 | | 2.825 | | 10 | P |
| Tin | 2.5 | U | 12.5 | U | | | | P |
| Vanadium | 3.28 | J | 5 | U | 135.167 | | | P |
| Zinc | 3.3 | U | 16.5 | U | | | | P |

*Analytical Methods:

P SW846 3005A/6010C

METALS

-9-

Serial Dilution Sample Summary

SDG NO. 2017-1644 Client ID: CAPA-17-133353L

Contract: ESHL00114

Matrix: LIQUID Level: Low

Sample ID: 424741001 Serial Dilution ID: 1203805130

| <u>Analyte</u> | <u>Initial Value ug/L</u> | <u>C</u> | <u>Serial Value ug/L</u> | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Antimony | 1 | U | 5 | U | | | | MS |
| Arsenic | 2 | U | 10 | U | | | | MS |
| Cadmium | .3 | U | 1.5 | U | | | | MS |
| Chromium | 3 | U | 15 | U | | | | MS |
| Lead | .5 | U | 2.5 | U | | | | MS |
| Molybdenum | .948 | | 1.15 | J | 20.781 | | | MS |
| Nickel | .812 | J | 5.81 | J | 614.901 | | | MS |
| Selenium | 2 | U | 10 | U | | | | MS |
| Silver | .3 | U | 1.5 | U | | | | MS |
| Thallium | .6 | U | 3 | U | | | | MS |
| Uranium | .184 | J | .335 | U | 2.174 | | | MS |

*Analytical Methods:

MS SW846 3005A/6020A

METALS

-9-

Serial Dilution Sample Summary

SDG NO. 2017-1644 **Client ID:** CAPA-17-133353L**Contract:** ESHL00114**Matrix:** LIQUID **Level:** Low**Sample ID:** 424741001 **Serial Dilution ID:** 1203811035

| <u>Analyte</u> | <u>Initial Value ug/L</u> | <u>C</u> | <u>Serial Value ug/L</u> | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Mercury | .067 | U | .335 | U | | | | AV |

*Analytical Methods:

AV EPA 245.1/245.2

General Chem Analysis

Case Narrative

**General Chemistry
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741**

Method/Analysis Information

Product: Carbon and Total Organic

Analytical Batch: 1670679 and 1671529 **Method:** SW 9060 Total Organic Carbon

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW-846:9060:

| Sample ID | Client ID |
|------------------|--|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203803827 | Method Blank (MB) |
| 1203805981 | Method Blank (MB) |
| 1203803828 | Laboratory Control Sample (LCS) |
| 1203805982 | Laboratory Control Sample (LCS) |
| 1203803830 | 424596007(CAWA-17-134191) Sample Duplicate (DUP) |
| 1203805984 | 424739002(CAPA-17133356) Sample Duplicate (DUP) |
| 1203803832 | 424596007(CAWA-17-134191) Post Spike (PS) |
| 1203805986 | 424739002(CAPA-17133356) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-093 REV# 15.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Carbon analysis was performed on a O-I Analytical 1030W Carbon Analyzer.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Quality Control (QC) Information

Method Blank (MB) Statement

The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Designation

Samples 424596007 (CAWA-17-134191) and 424739002 (CAPA-17133356) were selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced

SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

| | | | |
|--------------------------|--------------------------|----------------|-----------|
| Product: | Cyanide and Total | | |
| Analytical Batch: | 1671534 | Method: | WSP-CN(T) |
| Prep Batch : | 1671533 | Method: | EPA 335.4 |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 335.4 1993:

| Sample ID | Client ID |
|------------------|---|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203805008 | Method Blank (MB) |
| 1203805009 | Laboratory Control Sample (LCS) |
| 1203805010 | 424739002(CAPA-17133356) Sample Duplicate (DUP) |
| 1203805012 | 424739002(CAPA-17133356) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-095 REV# 19.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Flow Injection analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424739002 (CAPA-17133356) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an

effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Ion Chromatography

Analytical Batch: 1671680

Method: WSP-ANIONS

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:300.0:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805353 | Method Blank (MB) |
| 1203805354 | Laboratory Control Sample (LCS) |
| 1203805355 | 424735002(CAWA-17-134176) Sample Duplicate (DUP) |
| 1203805356 | 424735002(CAWA-17-134176) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-086 REV# 25.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Ion Chromatography analysis was performed on a Dionex ICS-5000 Ion Chromatograph.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424735002 (CAWA-17-134176) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The following samples 1203805355 (CAWA-17-134176DUP), 1203805356 (CAWA-17-134176PS), 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360) and 424741006 (CAWA-17-133318) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

| Analyte | 424741 | | |
|----------|--------|-----|-----|
| | 001 | 003 | 006 |
| Chloride | 2X | 2X | 5X |

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations

Samples 1203805355 (CAWA-17-134176DUP), 1203805356 (CAWA-17-134176PS), 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360), 424741006 (CAWA-17-133318), 424741008 (CAPA-17-133358) and 424741009 (CAPA-17-133359) were manually integrated to correctly position the baseline as set in the calibration standards.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

| | | | |
|--------------------------|-------------------------|----------------|----------------|
| Product: | Ammonia Nitrogen | | |
| Analytical Batch: | 1671935 | Method: | NH3 |
| Prep Batch : | 1671933 | Method: | EPA 350.1 Prep |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:350.1:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806101 | Method Blank (MB) |
| 1203806102 | Laboratory Control Sample (LCS) |
| 1203806103 | 424741001(CAPA-17-133353) Sample Duplicate (DUP) |
| 1203806104 | 424741001(CAPA-17-133353) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-106 REV# 9.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424741001 (CAPA-17-133353) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

| | | | |
|--------------------------|--------------------------------|----------------|----------------|
| Product: | Total Kjeldahl Nitrogen | | |
| Analytical Batch: | 1671942 | Method: | TKN |
| Prep Batch : | 1671941 | Method: | EPA 351.2 Prep |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:351.2:

| Sample ID | Client ID |
|------------------|--|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203806126 | Method Blank (MB) |
| 1203806127 | Laboratory Control Sample (LCS) |
| 1203806128 | 424741002(CAPA-17-133355) Sample Duplicate (DUP) |
| 1203806129 | 424741002(CAPA-17-133355) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-104 REV# 14.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424741002 (CAPA-17-133355) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

Samples 1203806126 (MB) and 1203806127 (LCS) were re-analyzed due to instrument failure. The results from the reanalysis are reported.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced

SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Nitrate Nitrite by Cadmium Reduction

Analytical Batch: 1671832

Method: NO3NO2

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:353.2:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805863 | Method Blank (MB) |
| 1203805864 | Laboratory Control Sample (LCS) |
| 1203805866 | 424735002(CAWA-17-134176) Sample Duplicate (DUP) |
| 1203805867 | 424853003(NonSDG) Sample Duplicate (DUP) |
| 1203805871 | 424735002(CAWA-17-134176) Post Spike (PS) |
| 1203805872 | 424853003(NonSDG) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-128 REV# 8.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8500 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Samples 424735002 (CAWA-17-134176) and 424853003 (NonSDG) were selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The following sample 424741006 (CAWA-17-133318) was diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

| | |
|---------------------------|--------|
| Analyte | 424741 |
| | 006 |
| Nitrogen, Nitrate/Nitrite | 5X |

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

| | | | |
|--------------------------|-------------------------|----------------|----------------|
| Product: | Total Phosphorus | | |
| Analytical Batch: | 1671937 | Method: | PO4 |
| Prep Batch : | 1671936 | Method: | EPA 365.4 Prep |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 365.4 1974:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806112 | Method Blank (MB) |
| 1203806113 | Laboratory Control Sample (LCS) |
| 1203806120 | 424735002(CAWA-17-134176) Sample Duplicate (DUP) |
| 1203806121 | 424735002(CAWA-17-134176) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-103 REV# 10.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424735002 (CAWA-17-134176) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Solids and Total Dissolved

Analytical Batch: 1671665

Method: TDS

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:160.1:

| Sample ID | Client ID |
|------------------|---|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805322 | Method Blank (MB) |
| 1203805323 | Laboratory Control Sample (LCS) |
| 1203805324 | 424739001(CAPA-17133354) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-001 REV# 15.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Solids analysis was performed on a Sartorius Balance BAL216. Solids lab

Initial Calibration

All initial calibration requirements have been met for this SDG.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Consecutive Weight Checks

All consecutive weight checks were met.

Quality Control (QC) Designation

Sample 424739001 (CAPA-17133354) was selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

| Analyte | Sample | Value |
|------------------------|-------------------------------|---------------|
| Total Dissolved Solids | 1203805324 (CAPA-17133354DUP) | 13.3* (0%-5%) |

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

A data exception report (DER) 1640819 was generated for sample 1203805324 (CAPA-17133354DUP) in this SDG/batch.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Specific Conductivity

Analytical Batch: 1671823

Method: EPA120.1 Specific Conductivity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:120.1:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805834 | Laboratory Control Sample (LCS) |
| 1203805835 | 424596002(CAWA-17-133306) Sample Duplicate (DUP) |
| 1203805836 | 424747001(CAWA-17-133332) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-009 REV# 14.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Orion 160 Conductivity Meter.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Initial Standardization

The titrant was properly standardized

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Samples 424596002 (CAWA-17-133306) and 424747001 (CAWA-17-133332) were selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: pH

Analytical Batch: 1671988 **Method:** PH

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 150.1 1982:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806295 | Laboratory Control Sample (LCS) |
| 1203806296 | 424596002(CAWA-17-133306) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-008 REV# 22.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Thermo Orion Star A111. Immediates

Initial Calibration

All initial calibration requirements have been met for this SDG.

Initial Standardization

The titrant was properly standardized

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424596002 (CAWA-17-133306) was selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

| Sample | Analyte | Value |
|--------------------------------|---------|--|
| 1203806296 (CAWA-17-133306DUP) | pH | Received 02-JUN-17, out of holding 31-MAY-17 |
| 424741001 (CAPA-17-133353) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741003 (CAPA-17-133360) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741006 (CAWA-17-133318) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741008 (CAPA-17-133358) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741009 (CAPA-17-133359) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

A data exception report (DER) 1640886 was generated for samples 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360), 424741006 (CAWA-17-133318), 424741008 (CAPA-17-133358), 424741009 (CAPA-17-133359) and 1203806296 (CAWA-17-133306DUP) in this SDG/batch.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are

present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Alkalinity

Analytical Batch: 1671987 **Method:** EPA 310.1 Total Alkalinity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:310.1:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806283 | Laboratory Control Sample (LCS) |
| 1203806285 | 424747001(CAWA-17-133332) Sample Duplicate (DUP) |
| 1203806287 | 424747001(CAWA-17-133332) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-033 REV# 13.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Electronic bottle-top buret.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Initial Standardization

The titrant was properly standardized

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424747001 (CAWA-17-133332) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:



Name: Kristen Mizzell

Date: 22 JUN 2017

Title: Analyst I

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133353
Sample ID: 424741001
Matrix: W
Collect Date: 01-JUN-17 11:45
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/06/17 | 2239 | 1671680 | 1 |
| Fluoride | | 0.238 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 11.3 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Chloride | | 16.7 | 0.134 | 0.400 | mg/L | | 2 | MXL2 | 06/08/17 | 0550 | 1671680 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.0858 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1012 | 1671935 | 3 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.810 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1010 | 1671832 | 4 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0776 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1323 | 1671937 | 5 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 137 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 6 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 66.0 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1345 | 1671987 | 7 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 258 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1100 | 1671823 | 8 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 10.5C | H | 7.69 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1343 | 1671988 | 9 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133353
Sample ID: 424741001

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|----|----|-------|------------------|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | | | | Analyst Comments | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:300.0 | | | | | | | | | | | |
| 3 | EPA:350.1 | | | | | | | | | | | |
| 4 | EPA:353.2 | | | | | | | | | | | |
| 5 | EPA 365.4 1974 | | | | | | | | | | | |
| 6 | EPA:160.1 | | | | | | | | | | | |
| 7 | EPA:310.1 | | | | | | | | | | | |
| 8 | EPA:120.1 | | | | | | | | | | | |
| 9 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Contact: Mr. Keith Greene

Client SDG: 2017-1644

Project: LANL- WQH Water Samples

Client Sample ID: CAPA-17-133355

Project: ESHL00114

Sample ID: 424741002

Client ID: ARSL004

Matrix: W

Collect Date: 01-JUN-17 11:45

Receive Date: 06-JUN-17

Collector: Client

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 2.49 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/10/17 | 0653 | 1670679 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1003 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.336 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1506 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133360
Sample ID: 424741003
Matrix: W
Collect Date: 01-JUN-17 11:45
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/06/17 | 2308 | 1671680 | 1 |
| Fluoride | | 0.243 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 11.3 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Chloride | | 16.6 | 0.134 | 0.400 | mg/L | | 2 | MXL2 | 06/08/17 | 0618 | 1671680 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.111 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1014 | 1671935 | 3 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.733 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1011 | 1671832 | 4 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0625 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1324 | 1671937 | 5 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 141 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 6 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 62.8 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1345 | 1671987 | 7 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 235 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1101 | 1671823 | 8 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 11.3C | H | 7.67 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1347 | 1671988 | 9 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133360
Sample ID: 424741003

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|----|----|-------|------------------|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | | | | Analyst Comments | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:300.0 | | | | | | | | | | | |
| 3 | EPA:350.1 | | | | | | | | | | | |
| 4 | EPA:353.2 | | | | | | | | | | | |
| 5 | EPA 365.4 1974 | | | | | | | | | | | |
| 6 | EPA:160.1 | | | | | | | | | | | |
| 7 | EPA:310.1 | | | | | | | | | | | |
| 8 | EPA:120.1 | | | | | | | | | | | |
| 9 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Contact: Mr. Keith Greene

Client SDG: 2017-1644

Project: LANL- WQH Water Samples

Client Sample ID: CAPA-17-133362

Project: ESHL00114

Sample ID: 424741004

Client ID: ARSL004

Matrix: W

Collect Date: 01-JUN-17 11:45

Receive Date: 06-JUN-17

Collector: Client

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 2.44 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0554 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1004 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.286 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1508 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAWA-17-133290
Sample ID: 424741005
Matrix: W
Collect Date: 01-JUN-17 13:37
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 1.87 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0641 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1009 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.320 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1515 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAWA-17-133318
Sample ID: 424741006
Matrix: W
Collect Date: 01-JUN-17 13:37
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | J | 0.102 | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/06/17 | 2337 | 1671680 | 1 |
| Fluoride | | 0.435 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 16.2 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Chloride | | 20.8 | 0.335 | 1.00 | mg/L | | 5 | MXL2 | 06/08/17 | 0647 | 1671680 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.0983 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1015 | 1671935 | 3 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 2.69 | 0.085 | 0.250 | mg/L | | 5 | AXH3 | 06/09/17 | 1013 | 1671832 | 4 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.101 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1325 | 1671937 | 5 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 216 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 6 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 102 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1349 | 1671987 | 7 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 397 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1101 | 1671823 | 8 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 10.9C | H | 7.39 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1348 | 1671988 | 9 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAWA-17-133318
Sample ID: 424741006

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|----|----|-------|------------------|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | | | | Analyst Comments | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:300.0 | | | | | | | | | | | |
| 3 | EPA:350.1 | | | | | | | | | | | |
| 4 | EPA:353.2 | | | | | | | | | | | |
| 5 | EPA 365.4 1974 | | | | | | | | | | | |
| 6 | EPA:160.1 | | | | | | | | | | | |
| 7 | EPA:310.1 | | | | | | | | | | | |
| 8 | EPA:120.1 | | | | | | | | | | | |
| 9 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133357
Sample ID: 424741007
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 3.28 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0728 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1010 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.268 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1516 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133358
Sample ID: 424741008
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/07/17 | 0104 | 1671680 | 1 |
| Chloride | | 7.33 | 0.067 | 0.200 | mg/L | | 1 | | | | | |
| Fluoride | | 0.103 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 7.03 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.190 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1016 | 1671935 | 2 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.0535 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1014 | 1671832 | 3 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0745 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1325 | 1671937 | 4 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 110 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 5 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 44.8 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1354 | 1671987 | 6 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 156 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1102 | 1671823 | 7 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 11.6C | H | 7.79 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1350 | 1671988 | 8 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133358
Sample ID: 424741008

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|------------------|----|-------|----|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | Analyst Comments | | | | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:350.1 | | | | | | | | | | | |
| 3 | EPA:353.2 | | | | | | | | | | | |
| 4 | EPA 365.4 1974 | | | | | | | | | | | |
| 5 | EPA:160.1 | | | | | | | | | | | |
| 6 | EPA:310.1 | | | | | | | | | | | |
| 7 | EPA:120.1 | | | | | | | | | | | |
| 8 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133359
Sample ID: 424741009
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/07/17 | 0132 | 1671680 | 1 |
| Chloride | | 7.34 | 0.067 | 0.200 | mg/L | | 1 | | | | | |
| Fluoride | | 0.106 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 6.98 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.120 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1017 | 1671935 | 2 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.0954 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1015 | 1671832 | 3 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0785 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1326 | 1671937 | 4 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 106 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 5 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 45.2 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1356 | 1671987 | 6 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 127 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1102 | 1671823 | 7 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 12.8C | H | 7.76 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1356 | 1671988 | 8 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133359
Sample ID: 424741009

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|------------------|----|-------|----|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | Analyst Comments | | | | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:350.1 | | | | | | | | | | | |
| 3 | EPA:353.2 | | | | | | | | | | | |
| 4 | EPA 365.4 1974 | | | | | | | | | | | |
| 5 | EPA:160.1 | | | | | | | | | | | |
| 6 | EPA:310.1 | | | | | | | | | | | |
| 7 | EPA:120.1 | | | | | | | | | | | |
| 8 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133361
Sample ID: 424741010
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 3.32 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0815 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1011 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.263 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1517 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 22, 2017

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Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico

Contact: Mr. Keith Greene

Workorder: 424741

| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|--------------------------------|-----------|--------|-------|----|-------|------|--------|----------------|-------|----------|-------|
| Carbon Analysis | | | | | | | | | | | |
| Batch | 1670679 | | | | | | | | | | |
| QC1203803830 | 424596007 | DUP | | | | | | | | | |
| Total Organic Carbon Average | | U | ND | U | ND | mg/L | N/A | | TSM | 06/10/17 | 04:09 |
| QC1203803828 | LCS | | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | | | | 10.4 | mg/L | | 104 (80%-120%) | | 06/09/17 | 17:24 |
| QC1203803827 | MB | | | | | | | | | | |
| Total Organic Carbon Average | | | U | | ND | mg/L | | | | 06/09/17 | 17:12 |
| QC1203803832 | 424596007 | PS | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | U | ND | | 10.7 | mg/L | | 106 (75%-125%) | | 06/10/17 | 04:56 |
| Batch | 1671529 | | | | | | | | | | |
| QC1203805984 | 424739002 | DUP | | | | | | | | | |
| Total Organic Carbon Average | | J | 0.455 | J | 0.416 | mg/L | 8.96 ^ | (+/-1.00) | TSM | 06/09/17 | 03:57 |
| QC1203805982 | LCS | | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | | | | 10.6 | mg/L | | 106 (80%-120%) | | 06/09/17 | 00:26 |
| QC1203805981 | MB | | | | | | | | | | |
| Total Organic Carbon Average | | | U | | ND | mg/L | | | | 06/09/17 | 00:15 |
| QC1203805986 | 424739002 | PS | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | J | 0.455 | | 11.6 | mg/L | | 111 (75%-125%) | | 06/09/17 | 04:44 |
| Flow Injection Analysis | | | | | | | | | | | |
| Batch | 1671534 | | | | | | | | | | |
| QC1203805010 | 424739002 | DUP | | | | | | | | | |
| Cyanide, Total | | U | ND | U | ND | ug/L | N/A | | AXH3 | 06/07/17 | 10:01 |

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QC Summary

Workorder: 424741

Page 2 of 7

| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|--------------------------------|-----------|--------|-------|------|-------|------|--------|------------|-------|----------|-------|
| Flow Injection Analysis | | | | | | | | | | | |
| Batch | 1671534 | | | | | | | | | | |
| QC1203805009 | LCS | | | | | | | | | | |
| Cyanide, Total | 50.0 | | | 51.6 | ug/L | | 103 | (90%-110%) | AXH3 | 06/07/17 | 09:48 |
| QC1203805008 | MB | | | | | | | | | | |
| Cyanide, Total | | | U | ND | ug/L | | | | | 06/07/17 | 09:47 |
| QC1203805012 | 424739002 | MS | | | | | | | | | |
| Cyanide, Total | 100 | U | ND | 106 | ug/L | | 106 | (90%-110%) | | 06/07/17 | 10:02 |
| Ion Chromatography | | | | | | | | | | | |
| Batch | 1671680 | | | | | | | | | | |
| QC1203805355 | 424735002 | DUP | | | | | | | | | |
| Bromide | | U | ND | U | ND | mg/L | N/A | | MXL2 | 06/06/17 | 20:43 |
| Chloride | | | 15.2 | | 15.2 | mg/L | 0.0289 | (0%-20%) | | 06/08/17 | 04:23 |
| Fluoride | | | 0.161 | | 0.160 | mg/L | 1.06 ^ | (+/-0.100) | | 06/06/17 | 20:43 |
| Sulfate | | | 7.13 | | 6.96 | mg/L | 2.31 | (0%-20%) | | | |
| QC1203805354 | LCS | | | | | | | | | | |
| Bromide | 1.25 | | | 1.23 | mg/L | | 98.5 | (80%-120%) | | 06/06/17 | 19:45 |
| Chloride | 5.00 | | | 4.61 | mg/L | | 92.3 | (80%-120%) | | | |
| Fluoride | 2.50 | | | 2.37 | mg/L | | 94.9 | (80%-120%) | | | |
| Sulfate | 10.0 | | | 9.58 | mg/L | | 95.8 | (80%-120%) | | | |
| QC1203805353 | MB | | | | | | | | | | |
| Bromide | | | U | ND | mg/L | | | | | 06/06/17 | 19:17 |
| Chloride | | | U | ND | mg/L | | | | | | |

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QC Summary

Workorder: 424741

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|----------------------------|---------|--------|--------|-------|--------|------|-------|------------|------------|----------|----------------|
| Ion Chromatography | | | | | | | | | | | |
| Batch | 1671680 | | | | | | | | | | |
| Fluoride | | | U | ND | mg/L | | | | MXL2 | 06/06/17 | 19:17 |
| Sulfate | | | U | ND | mg/L | | | | | | |
| QC1203805356 424735002 PS | | | | | | | | | | | |
| Bromide | 1.25 | U | ND | 1.23 | mg/L | | 98.8 | (75%-125%) | | 06/06/17 | 21:12 |
| Chloride | 5.00 | | 7.60 | 13.1 | mg/L | | 111 | (75%-125%) | | 06/08/17 | 04:52 |
| Fluoride | 2.50 | | 0.161 | 2.50 | mg/L | | 93.4 | (75%-125%) | | 06/06/17 | 21:12 |
| Sulfate | 10.0 | | 7.13 | 17.2 | mg/L | | 101 | (75%-125%) | | | |
| Nutrient Analysis | | | | | | | | | | | |
| Batch | 1671832 | | | | | | | | | | |
| QC1203805866 424735002 DUP | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | J | 0.0222 | J | 0.0219 | mg/L | 1.36 | ^ | (+/-0.050) | AXH3 | 06/09/17 10:00 |
| QC1203805867 424853003 DUP | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | | 1.12 | | 1.11 | mg/L | 0.897 | | (0%-20%) | | 06/09/17 10:28 |
| QC1203805864 LCS | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | 1.00 | | | 0.997 | mg/L | | 99.7 | (90%-110%) | | 06/09/17 | 09:52 |
| QC1203805863 MB | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | | U | ND | mg/L | | | | | 06/09/17 | 09:51 |
| QC1203805871 424735002 PS | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | 1.00 | J | 0.0222 | 1.02 | mg/L | | 99.8 | (90%-110%) | | 06/09/17 | 10:01 |
| QC1203805872 424853003 PS | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | 1.00 | | 1.12 | 2.04 | mg/L | | 92 | (90%-110%) | | 06/09/17 | 10:29 |

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QC Summary

Workorder: 424741

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|--------------------------|-----------|--------|------|--------|-------|------|------|------------|------------|----------|----------------|
| Nutrient Analysis | | | | | | | | | | | |
| Batch | 1671935 | | | | | | | | | | |
| QC1203806103 | 424741001 | DUP | | | | | | | | | |
| Nitrogen, Ammonia | | 0.0858 | | 0.0733 | mg/L | 15.7 | ^ | (+/-0.050) | KLP1 | 06/09/17 | 10:13 |
| QC1203806102 | LCS | | | | | | | | | | |
| Nitrogen, Ammonia | 1.00 | | | 1.01 | mg/L | | | 101 | (90%-110%) | | 06/09/17 10:02 |
| QC1203806101 | MB | | | | | | | | | | |
| Nitrogen, Ammonia | | | J | 0.0385 | mg/L | | | | | | 06/09/17 10:01 |
| QC1203806104 | 424741001 | MS | | | | | | | | | |
| Nitrogen, Ammonia | 1.00 | 0.0858 | | 1.03 | mg/L | | | 94.4 | (90%-110%) | | 06/09/17 10:14 |
| Batch | 1671937 | | | | | | | | | | |
| QC1203806120 | 424735002 | DUP | | | | | | | | | |
| Phosphorus, Total as P | | 0.0744 | | 0.0757 | mg/L | 1.73 | ^ | (+/-0.050) | KLP1 | 06/09/17 | 13:20 |
| QC1203806113 | LCS | | | | | | | | | | |
| Phosphorus, Total as P | 1.00 | | | 0.848 | mg/L | | | 84.8 | (80%-124%) | | 06/09/17 13:07 |
| QC1203806112 | MB | | | | | | | | | | |
| Phosphorus, Total as P | | | U | ND | mg/L | | | | | | 06/09/17 13:06 |
| QC1203806121 | 424735002 | MS | | | | | | | | | |
| Phosphorus, Total as P | 1.00 | 0.0744 | | 1.03 | mg/L | | | 95.6 | (63%-139%) | | 06/09/17 13:21 |
| Batch | 1671942 | | | | | | | | | | |
| QC1203806128 | 424741002 | DUP | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.336 | | 0.308 | mg/L | 8.7 | ^ | (+/-0.100) | KLP1 | 06/09/17 | 15:06 |
| QC1203806127 | LCS | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | 1.00 | | | 0.953 | mg/L | | | 95.3 | (90%-110%) | | 06/09/17 15:14 |
| QC1203806126 | MB | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | | J | 0.0715 | mg/L | | | | | | 06/09/17 15:13 |

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QC Summary

Workorder: 424741

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|-----------------------------------|-----------|--------|------|------|----------|-------|------|------------|-------|----------|-------|
| Nutrient Analysis | | | | | | | | | | | |
| Batch | 1671942 | | | | | | | | | | |
| QC1203806129 | 424741002 | MS | | | | | | | | | |
| Nitrogen, Total Kjeldahl | 1.00 | 0.336 | | 1.35 | mg/L | | 101 | (90%-110%) | KLP1 | 06/09/17 | 15:07 |
| Solids Analysis | | | | | | | | | | | |
| Batch | 1671665 | | | | | | | | | | |
| QC1203805324 | 424739001 | DUP | | | | | | | | | |
| Total Dissolved Solids | | 149 | | 130 | mg/L | 13.3* | | (0%-5%) | KLP1 | 06/08/17 | 16:27 |
| QC1203805323 | LCS | | | | | | | | | | |
| Total Dissolved Solids | 300 | | | 297 | mg/L | | 99 | (95%-105%) | | 06/08/17 | 16:27 |
| QC1203805322 | MB | | | | | | | | | | |
| Total Dissolved Solids | | | U | ND | mg/L | | | | | 06/08/17 | 16:27 |
| Titration and Ion Analysis | | | | | | | | | | | |
| Batch | 1671823 | | | | | | | | | | |
| QC1203805835 | 424596002 | DUP | | | | | | | | | |
| Conductivity | | 236 | | 233 | umhos/cm | 1.28 | | (0%-10%) | VH1 | 06/08/17 | 10:57 |
| QC1203805836 | 424747001 | DUP | | | | | | | | | |
| Conductivity | | 157 | | 156 | umhos/cm | 0.639 | | (0%-10%) | | 06/08/17 | 11:04 |
| QC1203805834 | LCS | | | | | | | | | | |
| Conductivity | 1410 | | | 1400 | umhos/cm | | 99.2 | (95%-105%) | | 06/08/17 | 10:45 |
| Batch | 1671987 | | | | | | | | | | |
| QC1203806285 | 424747001 | DUP | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 58.6 | | 59.0 | mg/L | 0.68 | | (0%-20%) | RXB5 | 06/09/17 | 13:58 |
| Carbonate alkalinity (CaCO3) | U | ND | U | ND | mg/L | N/A | | | | | |
| QC1203806283 | LCS | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | 100 | | | 108 | mg/L | | 108 | (90%-110%) | | 06/09/17 | 13:09 |

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QC Summary

Workorder: 424741

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|-----------------------------------|-----------|--------|------|------|-------|-------|------|------------|-------|----------|-------|
| Titration and Ion Analysis | | | | | | | | | | | |
| Batch | 1671987 | | | | | | | | | | |
| QC1203806287 | 424747001 | MS | | | | | | | | | |
| Alkalinity, Total as CaCO3 | 100 | 58.6 | | 165 | mg/L | | 107 | (80%-120%) | RXB5 | 06/09/17 | 13:59 |
| | | | | | | | | | | | |
| Batch | 1671988 | | | | | | | | | | |
| QC1203806296 | 424596002 | DUP | | | | | | | | | |
| pH | H | 7.26 | H | 7.27 | SU | 0.138 | | (0%-5%) | RXB5 | 06/09/17 | 13:23 |
| | | | | | | | | | | | |
| QC1203806295 | LCS | | | | | | | | | | |
| pH | 7.00 | | | 7.01 | SU | | 100 | (99%-101%) | | 06/09/17 | 13:08 |

Notes:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

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QC Summary

Workorder: 424741

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|----------|-----|--------|------|----|-------|------|------|-------|-------|------|------|
|----------|-----|--------|------|----|-------|------|------|-------|-------|------|------|

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

DATA EXCEPTION REPORT

| | | | |
|---|-------------------------------------|--|-----------------------------|
| Mo.Day Yr. 09-JUN-17 | Division: Industrial | Quality Criteria: Specifications | Type: Process |
| Instrument Type: BALANCE ANALYTICAL | Test / Method: EPA 160.1 | Matrix Type: Liquid | Client Code: ESHL |
| Batch ID: 1671665 | Sample Numbers: See Below | | |
| Potentially affected work order(s)(SDG): 424739(2017-1645),424741(2017-1644) Application Issues: Failed RPD for DUP | | | |
| Specification and Requirements Exception Description: | | DER Disposition: | |
| 1. Failed RPD for DUP: QC 1203805324DUP | | 1. The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample: Total Dissolved Solids 1203805324 (CAPA-17133354DUP) [13.3* (0%-5%)]. | |

Originator's Name:

Kristen Mizzell 09-JUN-17

Data Validator/Group Leader:

Aubrey Kingsbury 12-JUN-17

DATA EXCEPTION REPORT

| | | | |
|---|---|---|-----------------------------------|
| Mo.Day Yr. 10-JUN-17 | Division: Industrial | Quality Criteria: Specifications | Type: Process |
| Instrument Type: ELECTRODE | Test / Method: EPA 150.1, SW846 9040C | Matrix Type: Liquid | Client Code: ESHL, GELC |
| Batch ID: 1671988 | Sample Numbers: See Below | | |
| Potentially affected work order(s)(SDG): 424296,424297,424596(2017-1633),424735(2017-1647),424739(2017-1645),424741(2017-1644),424747(2017-1649) Application Issues: Sample received out of holding Sample Logged out of Holding | | | |
| Specification and Requirements Exception Description: | | DER Disposition: | |
| 1. Sample Logged out of Holding: 424296 001 2. Sample received out of holding: 424297 001 424596 002,003,007,010 424735 002,004 424739 001 424741 001,003,006,008,009 424747 001 QC 1203806296DUP,1203806297DUP | | 1. Sample (See Below) was logged in for this analysis outside of the method specified holding time. The data is qualified. 424296001 (Rad Pyridine 7647) [Logged 30-MAY-17, out of holding 30-MAY-17]. 2. Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified. 1203806296 (CAWA-17-133306DUP) [Received 02-JUN-17, out of holding 31-MAY-17]. 1203806297 (CAWA-17-13332DUP) [Received 06-JUN-17, out of holding 02-JUN-17]. 424297001 (Non-Rad Pyridine 7856) [Received 30-MAY-17, out of holding 30-MAY-17]. 424596002 (CAWA-17-133306) [Received 02-JUN-17, out of holding 31-MAY-17]. 424596003 (CAWA-17-133334) [Received 02-JUN-17, out of holding 31-MAY-17]. 424596007 (CAWA-17-134191) [Received 02-JUN-17, out of holding 31-MAY-17]. 424596010 (CAWA-17-133316) [Received 02-JUN-17, out of holding 31-MAY-17]. 424735002 (CAWA-17-134176) [Received 06-JUN-17, out of holding 02-JUN-17]. 424735004 (CAWA-17-133309) [Received 06-JUN-17, out of holding 02-JUN-17]. 424739001 (CAPA-17133354) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741001 (CAPA-17-133353) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741003 (CAPA-17-133360) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741006 (CAWA-17-133318) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741008 (CAPA-17-133358) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741009 (CAPA-17-133359) [Received 06-JUN-17, out of holding 01-JUN-17]. 424747001 (CAWA-17-133332) [Received 06-JUN-17, out of holding 02-JUN-17]. | |

Originator's Name:

Rachael Bell 10-JUN-17

Data Validator/Group Leader:

Elzbieta Szulc 12-JUN-17

Originator's Name:

Rachael Bell 10-JUN-17

Data Validator/Group Leader:

Elzbieta Szulc 12-JUN-17

July 19, 2017

Mr. Keith Greene
Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico 87545

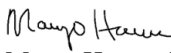
Re: LANL- WQH Water Samples
Work Order: 424741
SDG: 2017-1644

Dear Mr. Greene:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on June 06, 2017, and analyzed for Explosives by LCMSMS, General Chemistry, Metals and Perchlorates by LCMSMS. This revised data report has been prepared and reviewed in accordance with GEL's standard operating procedures. This package has been revised to include the results for HMX, DNX, and TNX on the HE Form 1s.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4485.

Sincerely,


Margo Herron for
Valerie Davis
Project Manager

Chain of Custody: 2017-1644
Enclosures



ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Work Order #: 424741
SDG: 2017-1644

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Case Narrative

**Case Narrative for
ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)
LANL- WQH Water Samples
Workorder #: 424741
SDG # : 2017-1644**

June 26, 2017

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on June 06, 2017 for analysis. The samples were delivered with proper chain of custody documentation and signatures. The samples were screened according to GEL Standard Operating Procedure. All sample containers arrived without any visible signs of tampering or breakage. Containers were checked for pH, where appropriate, and matched the preservative as documented on the accompanying chain of custody. Shipping container temperature was within specification (0 - 6C). Shipping container temperatures were checked, documented, and within specifications. There are no additional comments concerning sample receipt.

Sample Identification The laboratory received the following samples:

| <u>Laboratory ID</u> | <u>Client ID</u> |
|-----------------------------|-------------------------|
| 424741001 | CAPA-17-133353 |
| 424741002 | CAPA-17-133355 |
| 424741003 | CAPA-17-133360 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741006 | CAWA-17-133318 |
| 424741007 | CAPA-17-133357 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 424741010 | CAPA-17-133361 |

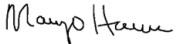
Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Explosives by LCMSMS, General Chemistry, Metals and Perchlorates by LCMSMS.

I certify that this data report is in compliance with the terms and conditions of the subcontract and task order, both technically and for completeness, for other than the conditions detailed in the attached case narrative.


Margo Herron for
Valerie Davis
Project Manager

List of current GEL Certifications as of 26 June 2017

| State | Certification |
|--------------------------|------------------------------|
| Alaska | UST-0110 |
| Arkansas | 88-0651 |
| CLIA | 42D0904046 |
| California | 2940 |
| Colorado | SC00012 |
| Connecticut | PH-0169 |
| Delaware | SC00012 |
| DoD ELAP/ ISO17025 A2LA | 2567.01 |
| Florida NELAP | E87156 |
| Foreign Soils Permit | P330-15-00283, P330-15-00253 |
| Georgia | SC00012 |
| Georgia SDWA | 967 |
| Hawaii | SC00012 |
| Idaho Chemistry | SC00012 |
| Idaho Radiochemistry | SC00012 |
| Illinois NELAP | 200029 |
| Indiana | C-SC-01 |
| Kansas NELAP | E-10332 |
| Kentucky SDWA | 90129 |
| Kentucky Wastewater | 90129 |
| Louisiana NELAP | 03046 (AI33904) |
| Louisiana SDWA | LA170010 |
| Maryland | 270 |
| Massachusetts | M-SC012 |
| Michigan | 9976 |
| Mississippi | SC00012 |
| Nebraska | NE-OS-26-13 |
| Nevada | SC000122017-1 |
| New Hampshire NELAP | 205415 |
| New Jersey NELAP | SC002 |
| New Mexico | SC00012 |
| New York NELAP | 11501 |
| North Carolina | 233 |
| North Carolina SDWA | 45709 |
| North Dakota | R-158 |
| Oklahoma | 9904 |
| Pennsylvania NELAP | 68-00485 |
| S.Carolina Radchem | 10120002 |
| South Carolina Chemistry | 10120001 |
| Tennessee | TN 02934 |
| Texas NELAP | T104704235-17-12 |
| Utah NELAP | SC000122017-22 |
| Vermont | VT87156 |
| Virginia NELAP | 460202 |
| Washington | C780 |
| West Virginia | 997404 |

Chain of Custody and Supporting Documentation



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

| | | | |
|--|---|---|--|
| Client: <u>ESHL</u> | | SDG/AR/COC/Work Order: <u>424741</u> | |
| Received By: <u>ZKW</u> | | Date Received: <u>6/6/17</u> | |
| Carrier and Tracking Number | | Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <u>5908 1782 1083 - 4°C</u> <u>5908 1782 1050 - 3°C</u> <u>5908 1782 1709 - 5°C</u> <u>5908 1782 1061 - 5°C</u> <u>5908 1782 1672 - 4°C</u> <u>5908 1782 1694 - 4°C</u> <u>5908 1782 1040 - 5°C</u> | |
| Suspected Hazard Information | Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> | *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation. | |
| Shipped as a DOT Hazardous? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Hazard Class Shipped: _____ UN#: _____ | |
| COC/Samples marked or classified as radioactive? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0</u> <input checked="" type="checkbox"/> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3 | |
| Is package, COC, and/or Samples marked HAZ? | Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> | If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other: _____ | |

| Sample Receipt Criteria | Yes | NA | No | Comments/Qualifiers (Required for Non-Conforming Items) |
|---|-------------------------------------|--------------------------|-------------------------------------|--|
| 1 Shipping containers received intact and sealed? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) |
| 2 Chain of custody documents included with shipment? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?* | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Preservation Method: Wet Ice <input checked="" type="checkbox"/> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius <u>See TEMP: Above</u> |
| 4 Daily check performed and passed on IR temperature gun? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Temperature Device Serial #: <u>IR3-16</u> Secondary Temperature Device Serial # (If Applicable): _____ |
| 5 Sample containers intact and sealed? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Circle Applicable: Seals broken Damaged container Leaking container Other (describe) |
| 6 Samples requiring chemical preservation at proper pH? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's and Containers Affected: If Preservation added, Lot#: |
| 7 Do any samples require Volatile Analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | If Yes, Are Encores or Soil Kits present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> N/A (If unknown, select No) VOA vials free of headspace? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> N/A Sample ID's and containers affected: <u>Both Vials for 136836 and 1 vial for 17133364</u> <u>recheck headspace</u> |
| 8 Samples received within holding time? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ID's and tests affected: |
| 9 Sample ID's on COC match ID's on bottles? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's and containers affected: |
| 10 Date & time on COC match date & time on bottles? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Sample ID's affected: |
| 11 Number of containers received match number indicated on COC? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | Sample ID's affected: <u>We received sample CAWA-17-134191 5/31/17 08:54</u> |
| 12 Are sample containers identifiable as GEL provided? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 13 COC form is properly signed in relinquished/received sections? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | |

Comments (Use Continuation Form if needed):

* We also rec'd 2 VOA vials for CAWA-17-13394 not indicated on the COC.
 * We only rec'd 1 VOA vial for WSTMD-17-136839

PM (or PMA) review: Initials

MESH

Date

6/7/17

Page

1

of

1

GL-CHL-SR-001 Rev 5

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
ACTWGT: 51.0 LB MAN
CAD: 0014178/CAFE2915

BILL SENDER

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

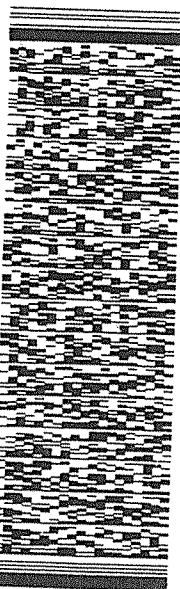
CHARLESTON SC 29407

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REF: 21PD0ASRGW04BAGWEO



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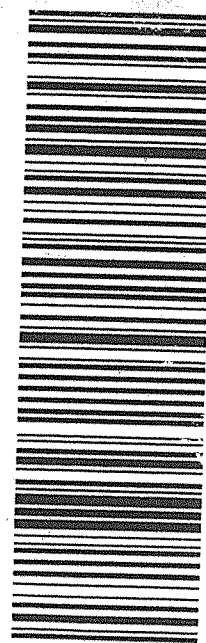
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Mstr# 5908 1782 1640

TUE - 06 JUN 10:30A
PRIORITY OVERNIGHT

0201

X7 RBWA

29407
SC-US CHS



Part # 156148V-434 RIT2 06/15 99

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
ACTWGT: 50.0 LB MAN
CAD: 0014178/CAFE2916

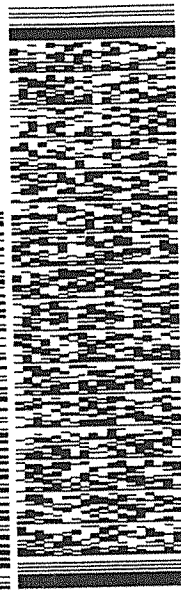
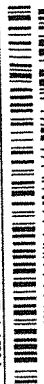
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GENERAL ENGINEERING LAB
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REF: 21PD0ASRGW04BAGWEO



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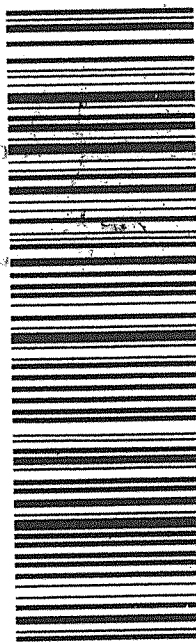
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MASTER

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PRIORITY OVERNIGHT

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Part # 156148V-434 RIT2 06/15 99

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J161315081301BY

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
ACTWGT: 52.0 LB MAN
CAD: 0014176/CAFE2916
BILL SENDER

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

SHIP DATE: 05JUN17
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CAD: 0014176/CAFE2916

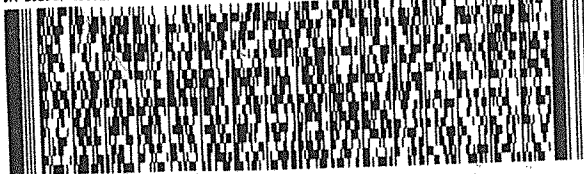
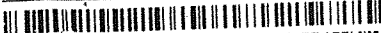
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2040 SAVAGE RD

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REF: 21PD0ASRGW04BAGWE0



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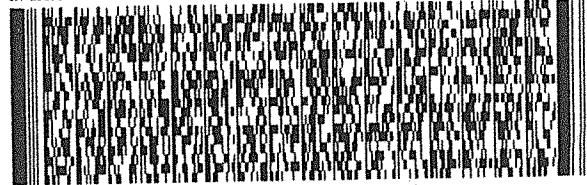
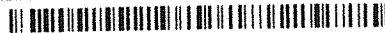


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REF: 21PD0ASRGW04BAGWE0



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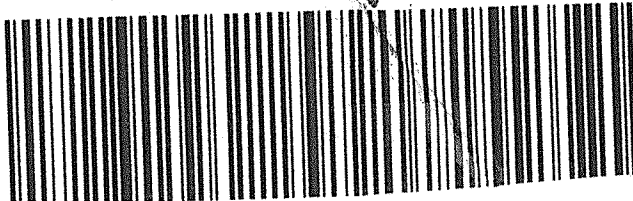


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PRIORITY OVERNIGHT

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SC-US CH



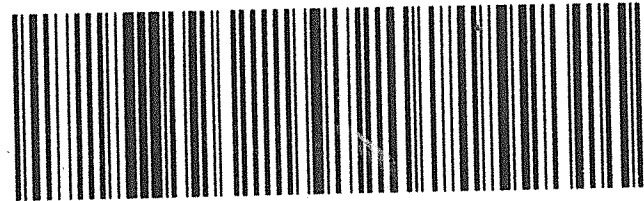
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TUE - 06 JUN 10:30
PRIORITY OVERNIGHT

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Part # 156148V-434 R1T2 06/15



SHIP DATE: 05JUN17
ACTWGT: 62.0 LB MAN
CAD: 0014176/CAFE2916

BILL SENDER

ORIGIN ID:SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

TO VALERIE DAVIS
GENERAL ENGINEERING LAB
2040 SAVAGE RD

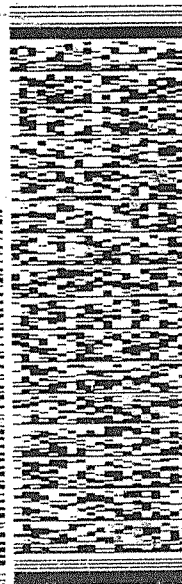
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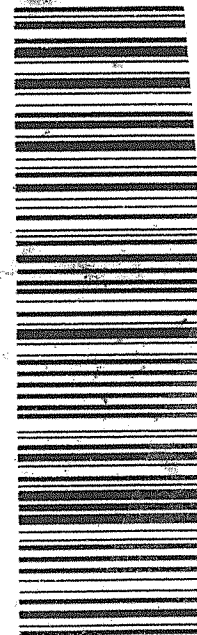


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2 of 2
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X7 RBWA

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Part # 156148V-434 R1T2 06/15

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
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UNITED STATES US

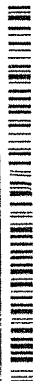
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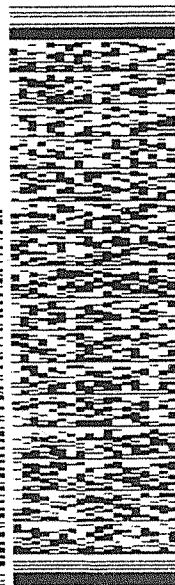
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(843) 566-8171
REF: 21PD0ASRGW04BAGWE0



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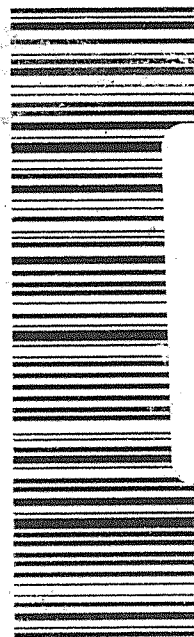


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Part # 156148V-434 RIT2 06/15 39

ORIGIN ID: SAFA (505) 665-9966
KEITH GREENE
LOS ALAMOS NATL LAB.
TA00 BLDG 1237 DPU 03
LOS ALAMOS, NM 87545
UNITED STATES US

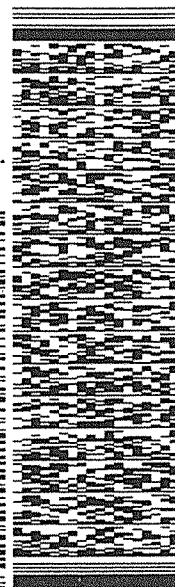
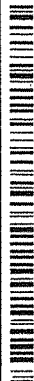
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BILL SENDER

TO VALERIE DAVIS
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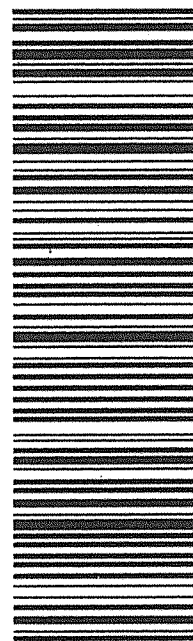
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PRIORITY OVERNIGHT

1 of 2
TRK# 5908 1782 1661

MASTER

X7 RBWA

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SC-US CHS



Part # 156148V-434 RIT2 06/15 39

Data Review Qualifier Flag Definition Sheet

Data Review Qualifier Definitions

| Qualifier | Explanation |
|-----------|-------------|
|-----------|-------------|

| | |
|-----|---|
| * | A quality control analyte recovery is outside of specified acceptance criteria |
| ** | Analyte is a surrogate compound |
| < | Result is less than value reported |
| > | Result is greater than value reported |
| ^ | RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL |
| A | The TIC is a suspected aldol-condensation product |
| B | Target analyte was detected in the associated blank |
| B | Metals-Either presence of analyte detected in the associated blank, or MDL/IDL < sample value < PQL |
| BD | Results are either below the MDC or tracer recovery is low |
| C | Analyte has been confirmed by GC/MS analysis |
| D | Results are reported from a diluted aliquot of the sample |
| d | 5-day BOD-The 2:1 depletion requirement was not met for this sample |
| E | Organics-Concentration of the target analyte exceeds the instrument calibration range |
| E | Metals-%difference of sample and SD is >10%. Sample concentration must meet flagging criteria |
| H | Analytical holding time was exceeded |
| h | Preparation or preservation holding time was exceeded |
| J | Value is estimated |
| N | Metals-The Matrix spike sample recovery is not within specified control limits |
| N | Organics-Presumptive evidence based on mass spectral library search to make a tentative identification of the analyte (TIC). Quantitation is based on nearest internal standard response factor |
| N/A | Spike recovery limits do not apply. Sample concentration exceeds spike concentration by 4X or more |
| ND | Analyte concentration is not detected above the reporting limit |
| UI | Gamma Spectroscopy-Uncertain identification |
| X | Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier |
| Y | QC Samples were not spiked with this compound |
| Z | Paint Filter Test-Particulates passed through the filter, however no free liquids were observed. |

P Organics-The concentrations between the primary and confirmation columns/detectors is >40% difference.
For HPLC, the difference is >70%.

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

Perchlorates by LCMSMS Analysis

Case Narrative

**Perchlorates by LCMSMS
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741**

Method/Analysis Information

Procedure: **Definitive Low Level Perchlorate Analysis Utilizing Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS) by EPA Method 6850 Modified (6850M)**

Analytical Method: SW-846:6850

Prep Method: SW-846:6850

Analytical Batch Number: 1671834

Prep Batch Number: 1671833

Sample Analysis

| Sample ID | Client ID |
|------------------|--|
| 424741001 | 424741001 (CAPA-17-133353) |
| 424741003 | 424741003 (CAPA-17-133360) |
| 424741006 | 424741006 (CAWA-17-133318) |
| 424741008 | 424741008 (CAPA-17-133358) |
| 424741009 | 424741009 (CAPA-17-133359) |
| 1203805879 | Interference Check Sample (ICS) |
| 1203805875 | Method Blank (MB) |
| 1203805876 | Laboratory Control Sample (LCS) |
| 1203805877 | 424741001(CAPA-17-133353) Matrix Spike (MS) |
| 1203805878 | 424741001(CAPA-17-133353) Matrix Spike Duplicate (MSD) |

The samples in this SDG were analyzed on an "as received" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as

Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-067 REV# 14.

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this SDG. Due to software constraints, all Initial Calibration Blanks must be designated as IPB001.

ICV Requirements

All associated initial calibration verification standard(s) (ICV) met the acceptance criteria.

CCB Requirements

All continuing calibration blanks (CCB) bracketing the analyses associated with this batch were within acceptance criteria.

CCV Requirements

All continuing calibration checks (CCV) requirements were met by all bracketing CCV standards.

Low Level Standard (CRI) Requirements

All low level calibration verification (CRI) requirements were met by all bracketing CRI standards.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Interference Check Sample (ICS)

The ICS spike recoveries met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Client sample 424741001 (CAPA-17-133353) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPDs between the MS and MSD met the acceptance limits.

Internal Standard Area Acceptance

The internal standard areas were within the required acceptance criteria for all samples and QC.

Retention Time

During the analysis of Perchlorate by LC/MS/MS, retention time shifts are commonly observed. These retention time shifts, which are caused by fouling of the column by the sample matrices, are problematic when the retention time is used as one of the criterion for confirmation. To overcome this problem, a known amount of O(18) labeled Perchlorate was added to each sample as a retention time standard. The presence of Perchlorate was confirmed by the relative retention time (RRT) of the Perchlorate peak and the O(18) standard. A RRT window of 0.98 to 1.02, as required by DOD QSM 5.0, has been used. In addition to the isotopic ratio, the presence of Perchlorate in the samples associated with this data package have been confirmed using the relative retention criteria stated above, not the absolute retention time.

Technical Information

Holding Time Specifications

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations

Manual integrations were not required for any data file associated with this SDG.

Method Comments

The samples in this SDG were not originally analyzed using EPA Method 314.0.

Additional Comments

The Perchlorate Isotope Ratio on the Form I may differ slightly from the ratio on the corresponding raw data due to rounding rules and/or significant figures or due to software limitations when there are manual integrations, dilutions or other factors. The ratio value of the Form I is the correct value. The retention time marker, Perchlorate-O (18), is added to all samples, instrument blanks, and standards prior to injection. It is used to verify the retention time of Perchlorate and Perchlorate-101 and to insure an accurate injection occurred. Due to various anions affecting the recovery of Perchlorate-O (18) and not Perchlorate and Perchlorate-101, the calibration curves of Perchlorate and Perchlorate-101 are internally corrected for using Perchlorate-O (18).

Perchlorate Isotope Ratio

The Perchlorate isotope ratio met acceptance criteria for all samples and QC samples. Please see the isotope ratio criteria in the Miscellaneous Section.

System Configuration

The laboratory utilizes a Waters LC 2795 liquid chromatography instrument for Perchlorate analysis. It is coupled with a Micromass Quattro Ultima Mass Spectrometer/Mass Spectrometer. It is designated as LCMSMS #2. It is fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis. The laboratory may also utilize an Agilent 1100 liquid chromatography instrument for Perchlorate analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/Mass Spectrometer, designated as LCMSMS #3 or LCMSMS #4. It is also fitted with an electrospray probe that is operated in the negative electrospray ionization mode for Perchlorate analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In

an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The LC-MS/MS Perchlorate analysis was performed on a Quatro Ultima LC/MS/MS.

Chromatographic separation of Perchlorate is accomplished through analysis on the following anion column:

Dionex: IonPac AG-16 2 x 50 mm.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Michael Penny

Date: 14 JUN 2017

Title: Group Leader

Sample Data Summary

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133353Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741001Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.634 | ug/L | | 1 | 07-JUN-17 18:50 | per0607019a |
| | Perchlorate Isotope Ratio | | | 3 | | | 1 | 07-JUN-17 18:50 | per0607019a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.597 | ug/L | | 1 | 07-JUN-17 18:50 | per0607019a |
| | Perchlorate-O(18) | | | 0.453 | ug/L | | 1 | 07-JUN-17 18:50 | per0607019a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133360Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741003Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.644 | ug/L | | 1 | 07-JUN-17 19:17 | per0607022a |
| | Perchlorate Isotope Ratio | | | 2.82 | | | 1 | 07-JUN-17 19:17 | per0607022a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.644 | ug/L | | 1 | 07-JUN-17 19:17 | per0607022a |
| | Perchlorate-O(18) | | | 0.431 | ug/L | | 1 | 07-JUN-17 19:17 | per0607022a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAWA-17-133318Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741006Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.470 | ug/L | | 1 | 07-JUN-17 19:53 | per0607026a |
| | Perchlorate Isotope Ratio | | | 2.86 | | | 1 | 07-JUN-17 19:53 | per0607026a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.465 | ug/L | | 1 | 07-JUN-17 19:53 | per0607026a |
| | Perchlorate-O(18) | | | 0.458 | ug/L | | 1 | 07-JUN-17 19:53 | per0607026a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133358Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741008Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.231 | ug/L | | 1 | 07-JUN-17 20:02 | per0607027a |
| | Perchlorate Isotope Ratio | | | 3 | | | 1 | 07-JUN-17 20:02 | per0607027a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.217 | ug/L | | 1 | 07-JUN-17 20:02 | per0607027a |
| | Perchlorate-O(18) | | | 0.438 | ug/L | | 1 | 07-JUN-17 20:02 | per0607027a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133359Date Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 424741009Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.231 | ug/L | | 1 | 07-JUN-17 20:11 | per0607028a |
| | Perchlorate Isotope Ratio | | | 3.02 | | | 1 | 07-JUN-17 20:11 | per0607028a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.216 | ug/L | | 1 | 07-JUN-17 20:11 | per0607028a |
| | Perchlorate-O(18) | | | 0.435 | ug/L | | 1 | 07-JUN-17 20:11 | per0607028a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Quality Control Summary

Perchlorate Laboratory Control Sample

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No. (SDG): 2017-1644

Extract Batch Code: 1671833

Date Filtered: 07-JUN-17

Matrix: WATER

Sample ID: 1203805876

| Analyte^ | True | Found | Units | %Rec | Q | Control Limits |
|---------------------------|-------|-------|-------|------|---|----------------|
| Perchlorate | 0.200 | .209 | ug/L | 104 | | 85 - 115 |
| Perchlorate Isotope Ratio | | 2.99 | | | | - |
| Perchlorate-101 | 0.200 | .197 | ug/L | 99 | | 85 - 115 |
| Perchlorate-O(18) | | .47 | ug/L | | | - |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Perchlorate Spike/Spike Duplicate Summary

Lab Name: General Engineering Laboratories

Lab Code: GEL

GEL Job No (SDG): 2017-1644

Extract Batch Code: 1671833

Date Extracted: 07-JUN-17

GEL MS/PS ID: 1203805877

Client ID: CAPA-17-133353

GEL MSD/PSD ID: 1203805878

QC Type: MS

| Compound^ | Spike Added | Sample Conc | Units | MS Conc | MS Rec # | MSD Conc | MSD Rec # | RPD # | RPD Limit | Recovery Limit |
|---------------------------|-------------|-------------|-------|---------|----------|----------|-----------|-------|-----------|----------------|
| Perchlorate | 0.200 | 0.634 | ug/L | 0.874 | 120 | .806 | 86 | 8 | 30 | 75 - 125 |
| Perchlorate Isotope Ratio | 0 | 3.00 | | 3.08 | | 2.97 | | 3 | | - |
| Perchlorate-101 | 0.200 | 0.597 | ug/L | 0.801 | 102 | .766 | 85 | 5 | 30 | 75 - 125 |
| Perchlorate-O(18) | 0 | 0.453 | ug/L | 0.435 | | .446 | | 3 | | - |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

Quality Control Data

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: EPA 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

MBDate Received: 07-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805875Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.200 | ug/L | U | 1 | 07-JUN-17 17:56 | per0607013a |
| | Perchlorate Isotope Ratio | | | | | | 1 | 07-JUN-17 17:56 | per0607013a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.200 | ug/L | U | 1 | 07-JUN-17 17:56 | per0607013a |
| | Perchlorate-O(18) | | | 0.465 | ug/L | | 1 | 07-JUN-17 17:56 | per0607013a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: EPA 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

LCSDate Received: 07-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805876Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.209 | ug/L | | 1 | 07-JUN-17 18:05 | per0607014a |
| | Perchlorate Isotope Ratio | | | 2.99 | | | 1 | 07-JUN-17 18:05 | per0607014a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.197 | ug/L | J | 1 | 07-JUN-17 18:05 | per0607014a |
| | Perchlorate-O(18) | | | 0.470 | ug/L | | 1 | 07-JUN-17 18:05 | per0607014a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

ICS

Date Received:

GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805879Date Filtered: 07-JUN-17Injection Volume (uL): 20

%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.199 | ug/L | J | 1 | 07-JUN-17 18:14 | per0607015a |
| | Perchlorate Isotope Ratio | | | 2.89 | | | 1 | 07-JUN-17 18:14 | per0607015a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.194 | ug/L | J | 1 | 07-JUN-17 18:14 | per0607015a |
| | Perchlorate-O(18) | | | 0.504 | ug/L | | 1 | 07-JUN-17 18:14 | per0607015a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133353MSDate Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805877Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.874 | ug/L | | 1 | 07-JUN-17 18:59 | per0607020a |
| | Perchlorate Isotope Ratio | | | 3.08 | | | 1 | 07-JUN-17 18:59 | per0607020a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.801 | ug/L | | 1 | 07-JUN-17 18:59 | per0607020a |
| | Perchlorate-O(18) | | | 0.435 | ug/L | | 1 | 07-JUN-17 18:59 | per0607020a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Perchlorate Analysis Data Sheet

Lab Name: GEL Laboratories LLCLab Code: GELInstrument: LCMSMSMethod: SW846 6850 ModifiedMatrix: WATERExtraction Batch ID: 1671833Extraction Type: Filter/DAISample Volume/Weight: 10.0 mLConcentrated Extract Volume: 10.0

Client Sample No.

CAPA-17-133353MSDDate Received: 06-JUN-17GEL Job No (SDG): 2017-1644GEL Sample ID: 1203805878Date Filtered: 07-JUN-17Injection Volume (uL): 20%Solids:

| CAS No. | Analyte^ | MDL | RL | Conc* | Units | Q | Dilution Factor | Date Analyzed | GEL File ID |
|------------|---------------------------|-----|----|-------|-------|---|-----------------|-----------------|-------------|
| 14797-73-0 | Perchlorate | .05 | .2 | 0.806 | ug/L | | 1 | 07-JUN-17 19:08 | per0607021a |
| | Perchlorate Isotope Ratio | | | 2.97 | | | 1 | 07-JUN-17 19:08 | per0607021a |
| 14797-73-0 | Perchlorate-101 | .05 | .2 | 0.766 | ug/L | | 1 | 07-JUN-17 19:08 | per0607021a |
| | Perchlorate-O(18) | | | 0.446 | ug/L | | 1 | 07-JUN-17 19:08 | per0607021a |

^ When the analyte name is Perchlorate Isotope Ratio the concentration is a unitless value calculated from the ratio of Perchlorate peak area to Perchlorate-101 peak area. The Perchlorate-101 and isotopic ratio results are provided for qualitative purposes only. The results are used to verify the presence and quantitation of Perchlorate.

*Concentration =

$$\text{Instrument Value} \times \frac{\text{Concentrated Extract Volume}}{\text{Aliquot}} \times \frac{1}{\% \text{Solids}}$$

Explosives by LCMSMS Analysis

Case Narrative

**Explosives by LCMSMS
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741**

Method/Analysis Information

Procedure: The Processing, Extraction, and Analysis of Nitroaromatics, Nitroamines, and Nitrate Esters by SW-846 8330B

Analytical Method: SW846 3535A/8330B

Prep Method: SW846 3535A

Analytical Batch Number: 1671746

Prep Batch Number: 1671745

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3535A/8330B:

| Sample ID | Client ID |
|------------------|--|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203805555 | Method Blank (MB) |
| 1203805556 | Laboratory Control Sample (LCS) |
| 1203805559 | 424596009(CAWA-17-133288) Matrix Spike (MS) |
| 1203805560 | 424596009(CAWA-17-133288) Matrix Spike Duplicate (MSD) |

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-068 REV# 7.

Calibration Information

Initial Calibration

All initial calibration requirements for this analysis have been met for this SDG.

Calibration Verification Standard Requirements

All calibration verification standards (ICV or CCV) have not met requirements of 80-120% for samples 1203805555 (MB), 424741002 (CAPA-17-133355), 424741004 (CAPA-17-133362), 424741005 (CAWA-17-133290), 424741007 (CAPA-17-133357) and 424741010 (CAPA-17-133361) in this SDG. Please

refer to Form 7 of the data package for a list of recoveries. The data are Q qualified and reported as stated in the SOP.

Calibration Blank Requirements

All initial and continuing calibration blanks (ICB and CCB) bracketing the analyses associated with this batch for this analysis were within acceptance criteria. Due to software limitations, the CCBs and/or the ICBs may have a concentration for target analytes in the Found column. These values should be zero.

CRI Requirements

The Low Level Calibration Verification Standard (IRA) did not meet requirements of 70-130% for samples 424741005 (CAWA-17-133290) and 424741007 (CAPA-17-133357) in this SDG. Please refer to Form 7 of the data package for a list of recoveries. The data are Q qualified and reported as stated in the SOP.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG for this analysis met the acceptance criteria.

Surrogate Recoveries

All the surrogate recoveries were within the established acceptance criteria in this SDG in this analytical batch for this analysis.

Laboratory Control Sample (LCS) Recovery

One or more of the required spiking analytes were not within the acceptance limits in the laboratory control sample (See Below). While the LCS exhibited a high bias, the analyte was/were not detected in the associated samples, the data are reported.

| Sample | Analyte | Value |
|------------------|--------------------|-----------------|
| 1203805556 (LCS) | 2,6-Dinitrotoluene | 106* (72%-105%) |
| | TATB | 150* (47%-135%) |

QC Sample Designation

Client sample 424596009 (CAWA-17-133288) was chosen for matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. Because the recoveries were biased high and target analytes were not detected in the associated samples above the reporting limit, the data were reported.

| Sample | Analyte | Value |
|--------------------------------|---------|-----------------|
| 1203805560 (CAWA-17-133288MSD) | TATB | 152* (38%-149%) |

MS/MSD Relative Percent Difference (RPD) Statement

The RPDs between the MS and MSD met the acceptance limits for this analysis.

Internal Standard (ISTD) Acceptance

The internal standard responses were within the required acceptance criteria for all samples and QC in this SDG.

Technical Information

Holding Time Specifications

All samples in this SDG in this analytical batch met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

In accordance with GEL SOP GL-OA-056, all sample and QC extracts are diluted 1:1 v/v with LC reagent grade Water. Sample 424741005 (CAWA-17-133290) was further diluted to bring the over range concentration within the calibration range. The final dilution in each case takes the 1:1 v/v dilution into account.

| | |
|---------|---------------|
| Analyte | 424741 |
| | 005 |
| HMX | 4X |
| RDX | 50X |

Sample Re-extraction/Re-analysis

Sample 424741007 (CAPA-17-133357) was re-analyzed to confirm potential carryover from the previous sample analysis. The re-analysis data are reported. 1203805556 (LCS), 1203805559 (CAWA-17-133288MS) and 1203805560 (CAWA-17-133288MSD) were re-analyzed due to the bracketing CCV failing to meet the required acceptance criteria. The second analysis was bracketed by passing acceptance criteria.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception report (DER) 1641799 was generated for samples 1203805556 (LCS) and 1203805560 (CAWA-17-133288MSD) in this SDG/batch.

Manual Integrations

Manual integrations were not required for any data file associated with this SDG.

Additional Comments

Due to software limitations, all initial calibration blanks must be designated as XIB001 in order for the forms to be correct. Due to software limitations, file extensions such as DL, RE, etc. may not appear on the generated forms and/or raw data. Relative Retention Time (RRT) is used by the laboratory to establish peak identity. The RRT of each target analyte is calculated using the retention time of the corresponding internal standard. The RRT of each analyte in a sample must be within 0.1 of the analyte's calculated RRT in the ICV.

System Configuration

The laboratory utilizes an Agilent 1100 liquid chromatography instrument for either Primary or Secondary analyte analysis. It is coupled with an Applied Biosystems 4000 Mass Spectrometer/ Mass Spectrometer, designated as either LC/MS/MS #3 or LC/MS/MS #4. The laboratory also utilizes a Shimadzu Nexera XC liquid chromatography instrument for Primary and/or Secondary analyte analysis. It is coupled with an Applied Biosystems 5500 Mass Spectrometer/ Mass Spectrometer, designated as LC/MS/MS #5. All are fitted with an APCI (Atmospheric Pressure Chemical Ionization) probe that is operated in the negative ionization mode for both the Primary and Secondary analyte analysis.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Chromatographic Columns

The LC-MS/MS Explosives analysis was performed on a ABSciex 5500 Qtrap LC/MS/MS.

The detection of the Primary and Secondary Nitroaromatic and Nitramine analytes is accomplished through analysis on the following reversed phase column:

Phenomenex: Ultracarb 5u ODS (20), 250 x 4.60 mm ID.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a surrogate compound
- J Value is estimated
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- DL Indicates that sample is diluted.
- RA Indicates that sample is re-analyzed without re-extraction.
- RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Michael Penny

Date: 21 JUN 2017

Title: Group Leader

Sample Data Summary

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133355

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741002

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608044.wiff

Date Analyzed: 09-JUN-17 18:21

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .0993 | J | 0.086 | 0.269 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 13980-04-6 | TNX | .269 | U | 0.086 | 0.269 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 5755-27-1 | MNX | .269 | U | 0.086 | 0.269 |
| <i>5755-27-1</i> | <i>MNX</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 80251-29-2 | DNX | .269 | U | 0.086 | 0.269 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .269 | U | 0.0882 | 0.269 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133355

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741002

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|---------------------------------|---|----------------|----|-------|-------|
| 479-45-8 <i>479-45-8</i> | Tetryl <i>Tetryl</i> | .538 | U | 0.086 | 0.538 |
| 78-11-5 <i>78-11-5</i> | PETN <i>PETN</i> | .538 | U | 0.108 | 0.538 |
| 99-99-0 <i>99-99-0</i> | p-Nitrotoluene <i>p-Nitrotoluene</i> | .538 | U | 0.161 | 0.538 |
| 3058-38-6 <i>3058-38-6</i> | TATB <i>TATB</i> | 1.08 | U | 0.323 | 1.08 |
| 618-87-1 <i>618-87-1</i> | 3,5-Dinitroaniline <i>3,5-Dinitroaniline</i> | 1.08 | QU | 0.323 | 1.08 |
| 78-30-8 <i>78-30-8</i> | tris(o-cresyl) phosphate <i>tris(o-cresyl) phosphate</i> | 1.08 | U | 0.323 | 1.08 |
| 2691-41-0 <i>2691-41-0</i> | HMX <i>HMX</i> | 1.71 | | 0.086 | 0.269 |
| 59229-75-3 <i>59229-75-3</i> | 2,6-Diamino-4-nitrotoluene <i>2,6-Diamino-4-nitrotoluene</i> | 2.69 | U | 0.538 | 2.69 |
| 6629-29-4 <i>6629-29-4</i> | 2,4-Diamino-6-nitrotoluene <i>2,4-Diamino-6-nitrotoluene</i> | 2.69 | U | 0.538 | 2.69 |
| 121-82-4 <i>121-82-4</i> | RDX <i>RDX</i> | 2.91 | | 0.086 | 0.269 |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133362

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741004

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608045.wiff

Date Analyzed: 09-JUN-17 18:56

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .0891 | J | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 13980-04-6 | TNX | .26 | U | 0.0833 | 0.260 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 5755-27-1 | MNX | .26 | U | 0.0833 | 0.260 |
| <i>5755-27-1</i> | <i>MNX</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 80251-29-2 | DNX | .26 | U | 0.0833 | 0.260 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .26 | U | 0.0854 | 0.260 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133362

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741004

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|---------------------------------|---|----------------|----|--------|-------|
| 479-45-8 <i>479-45-8</i> | Tetryl <i>Tetryl</i> | .521 | U | 0.0833 | 0.521 |
| 78-11-5 <i>78-11-5</i> | PETN <i>PETN</i> | .521 | U | 0.104 | 0.521 |
| 99-99-0 <i>99-99-0</i> | p-Nitrotoluene <i>p-Nitrotoluene</i> | .521 | U | 0.156 | 0.521 |
| 3058-38-6 <i>3058-38-6</i> | TATB <i>TATB</i> | 1.04 | U | 0.313 | 1.04 |
| 618-87-1 <i>618-87-1</i> | 3,5-Dinitroaniline <i>3,5-Dinitroaniline</i> | 1.04 | QU | 0.313 | 1.04 |
| 78-30-8 <i>78-30-8</i> | tris(o-cresyl) phosphate <i>tris(o-cresyl) phosphate</i> | 1.04 | U | 0.313 | 1.04 |
| 2691-41-0 <i>2691-41-0</i> | HMX <i>HMX</i> | 1.67 | | 0.0833 | 0.260 |
| 59229-75-3 <i>59229-75-3</i> | 2,6-Diamino-4-nitrotoluene <i>2,6-Diamino-4-nitrotoluene</i> | 2.6 | U | 0.521 | 2.60 |
| 6629-29-4 <i>6629-29-4</i> | 2,4-Diamino-6-nitrotoluene <i>2,4-Diamino-6-nitrotoluene</i> | 2.6 | U | 0.521 | 2.60 |
| 121-82-4 <i>121-82-4</i> | RDX <i>RDX</i> | 2.91 | | 0.0833 | 0.260 |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613022.wiff

Date Analyzed: 14-JUN-17 04:42

Dilution Factor: 50

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|----------|----------|----------------|---|------|------|
| 121-82-4 | RDX | 74 | | 2.15 | 6.72 |
| 121-82-4 | RDX | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613023.wiff

Date Analyzed: 14-JUN-17 05:17

Dilution Factor: 4

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-----------|----------|----------------|---|-------|-------|
| 2691-41-0 | HMX | 11.3 | | 0.172 | 0.538 |
| 2691-41-0 | HMX | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613024.wiff

Date Analyzed: 14-JUN-17 05:52

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|---------------------------------|---|----------------|----|--------|-------|
| 13980-04-6 <i>13980-04-6</i> | TNX <i>TNX</i> | .152 | J | 0.086 | 0.269 |
| 118-96-7 <i>118-96-7</i> | 2,4,6-Trinitrotoluene <i>2,4,6-Trinitrotoluene</i> | .269 | U | 0.086 | 0.269 |
| 121-14-2 <i>121-14-2</i> | 2,4-Dinitrotoluene <i>2,4-Dinitrotoluene</i> | .269 | U | 0.086 | 0.269 |
| 606-20-2 <i>606-20-2</i> | 2,6-Dinitrotoluene <i>2,6-Dinitrotoluene</i> | .269 | U | 0.086 | 0.269 |
| 80251-29-2 <i>80251-29-2</i> | DNX <i>DNX</i> | .269 | U | 0.086 | 0.269 |
| 88-72-2 <i>88-72-2</i> | o-Nitrotoluene <i>o-Nitrotoluene</i> | .269 | QU | 0.0882 | 0.269 |
| 98-95-3 <i>98-95-3</i> | Nitrobenzene <i>Nitrobenzene</i> | .269 | U | 0.086 | 0.269 |
| 99-08-1 <i>99-08-1</i> | m-Nitrotoluene <i>m-Nitrotoluene</i> | .269 | U | 0.086 | 0.269 |
| 99-65-0 <i>99-65-0</i> | m-Dinitrobenzene <i>m-Dinitrobenzene</i> | .269 | U | 0.086 | 0.269 |
| 5755-27-1 <i>5755-27-1</i> | MNX <i>MNX</i> | .354 | | 0.086 | 0.269 |
| 99-35-4 <i>99-35-4</i> | 1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i> | .395 | | 0.086 | 0.269 |
| 479-45-8 <i>479-45-8</i> | Tetryl <i>Tetryl</i> | .538 | U | 0.086 | 0.538 |
| 78-11-5 <i>78-11-5</i> | PETN <i>PETN</i> | .538 | QU | 0.108 | 0.538 |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133290

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741005

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|-------|-------|
| 99-99-0 | p-Nitrotoluene | .538 | QU | 0.161 | 0.538 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | .561 | J | 0.323 | 1.08 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .604 | | 0.086 | 0.269 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .813 | | 0.086 | 0.269 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 3058-38-6 | TATB | 1.08 | U | 0.323 | 1.08 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.08 | U | 0.323 | 1.08 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.69 | QU | 0.538 | 2.69 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.69 | QU | 0.538 | 2.69 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133357

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741007

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0613021.wiff

Date Analyzed: 14-JUN-17 04:07

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|----|--------|-------|
| 121-82-4 | RDX | .129 | J | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |
| 2691-41-0 | HMX | .13 | J | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 13980-04-6 | TNX | .26 | U | 0.0833 | 0.260 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 5755-27-1 | MXN | .26 | U | 0.0833 | 0.260 |
| <i>5755-27-1</i> | <i>MXN</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 80251-29-2 | DNX | .26 | U | 0.0833 | 0.260 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .26 | QU | 0.0854 | 0.260 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .26 | U | 0.0833 | 0.260 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .26 | U | 0.0833 | 0.260 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133357

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741007

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|----|--------|-------|
| 99-35-4 | 1,3,5-Trinitrobenzene | .26 | U | 0.0833 | 0.260 |
| 99-35-4 | 1,3,5-Trinitrobenzene | | | | |
| 99-65-0 | m-Dinitrobenzene | .26 | U | 0.0833 | 0.260 |
| 99-65-0 | m-Dinitrobenzene | | | | |
| 479-45-8 | Tetryl | .521 | U | 0.0833 | 0.521 |
| 479-45-8 | Tetryl | | | | |
| 78-11-5 | PETN | .521 | QU | 0.104 | 0.521 |
| 78-11-5 | PETN | | | | |
| 99-99-0 | p-Nitrotoluene | .521 | QU | 0.156 | 0.521 |
| 99-99-0 | p-Nitrotoluene | | | | |
| 3058-38-6 | TATB | 1.04 | U | 0.313 | 1.04 |
| 3058-38-6 | TATB | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1.04 | U | 0.313 | 1.04 |
| 618-87-1 | 3,5-Dinitroaniline | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.04 | U | 0.313 | 1.04 |
| 78-30-8 | tris(o-cresyl) phosphate | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.6 | QU | 0.521 | 2.60 |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.6 | QU | 0.521 | 2.60 |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133361

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741010

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608048.wiff

Date Analyzed: 09-JUN-17 20:41

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 2691-41-0 | HMX | .118 | J | 0.086 | 0.269 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 121-82-4 | RDX | .119 | J | 0.086 | 0.269 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 13980-04-6 | TNX | .269 | U | 0.086 | 0.269 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 5755-27-1 | MXN | .269 | U | 0.086 | 0.269 |
| <i>5755-27-1</i> | <i>MXN</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 80251-29-2 | DNX | .269 | U | 0.086 | 0.269 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .269 | U | 0.0882 | 0.269 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .269 | U | 0.086 | 0.269 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .269 | U | 0.086 | 0.269 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAPA-17-133361

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 424741010

Sample Amount 930 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|----|-------|-------|
| 99-35-4 | 1,3,5-Trinitrobenzene | .269 | U | 0.086 | 0.269 |
| 99-35-4 | 1,3,5-Trinitrobenzene | | | | |
| 99-65-0 | m-Dinitrobenzene | .269 | U | 0.086 | 0.269 |
| 99-65-0 | m-Dinitrobenzene | | | | |
| 479-45-8 | Tetryl | .538 | U | 0.086 | 0.538 |
| 479-45-8 | Tetryl | | | | |
| 78-11-5 | PETN | .538 | U | 0.108 | 0.538 |
| 78-11-5 | PETN | | | | |
| 99-99-0 | p-Nitrotoluene | .538 | U | 0.161 | 0.538 |
| 99-99-0 | p-Nitrotoluene | | | | |
| 3058-38-6 | TATB | 1.08 | U | 0.323 | 1.08 |
| 3058-38-6 | TATB | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1.08 | QU | 0.323 | 1.08 |
| 618-87-1 | 3,5-Dinitroaniline | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1.08 | U | 0.323 | 1.08 |
| 78-30-8 | tris(o-cresyl) phosphate | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.69 | U | 0.538 | 2.69 |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.69 | U | 0.538 | 2.69 |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | | | | |

Quality Control Summary

High Explosives Surrogate Recovery Summary

Lab Name: GEL Laboratories LLCGEL Job No (SDG): 2017-1644Lab Code: GEL

HPLC Column: Ultracarb Phenomenex 5u ODS (20)

| Lab Sample ID | Client Sample ID | DNT | QC Limits | Flg |
|---------------|-----------------------|-----|-----------|-----|
| 424741002 | CAPA-17-133355 | 97 | 55 - 115 | |
| 424741004 | CAPA-17-133362 | 90 | 55 - 115 | |
| 424741005 | CAWA-17-133290DL2 | 89 | 55 - 115 | |
| 424741005 | CAWA-17-133290DL | 101 | 55 - 115 | |
| 424741005 | CAWA-17-133290 | 84 | 55 - 115 | |
| 424741007 | CAPA-17-133357 | 90 | 55 - 115 | |
| 424741010 | CAPA-17-133361 | 98 | 55 - 115 | |
| 1203805555 | MB for batch 1671745 | 102 | 55 - 115 | |
| 1203805556 | LCS for batch 1671745 | 105 | 55 - 115 | |
| 1203805559 | CAWA-17-133288MS | 81 | 55 - 115 | |
| 1203805560 | CAWA-17-133288MSD | 93 | 55 - 115 | |

DNT = 3,4-Dinitrotoluene

3B
High Explosives LCS/LCS Duplicate Summary

Lab Name: GEL Laboratories LLC

Client ID: LCS

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Extract Batch Code: 1671745

Date Extracted: 07-JUN-17

GEL LCS ID: 1203805556

GEL LCSDUP ID: .

Analysis Date/Time: 09-JUN-17 23:37

DUP Analysis Date/Time:

Reporting Units: ug/L

QC Type: LCS/LCSD

| Compound | Spike Added | LCS Conc | LCS Rec # | LCSD Conc | LCSD Rec # | RPD # | RPD | Recovery Limits |
|----------------------------|-------------|----------|-----------|-----------|------------|-------|-----|-----------------|
| 1,3,5-Trinitrobenzene | 5 | 4.19 | 84 | | | | | 70 - 110 |
| 2,4,6-Trinitrotoluene | 5 | 4.89 | 98 | | | | | 69 - 113 |
| 2,4-Diamino-6-nitrotoluene | 5 | 3.93 | 79 | | | | | 50 - 121 |
| 2,4-Dinitrotoluene | 5 | 4.41 | 88 | | | | | 71 - 110 |
| 2,6-Diamino-4-nitrotoluene | 5 | 4.21 | 84 | | | | | 53 - 127 |
| 2,6-Dinitrotoluene | 5 | 5.31 | 106 * | | | | | 72 - 105 |
| 2-Amino-4,6-dinitrotoluene | 5 | 4.52 | 90 | | | | | 70 - 112 |
| 3,5-Dinitroaniline | 5 | 6.02 | 120 | | | | | 70 - 121 |
| 4-Amino-2,6-dinitrotoluene | 5 | 4.76 | 95 | | | | | 74 - 116 |
| HMX | 5 | 3.92 | 78 | | | | | 58 - 113 |
| Nitrobenzene | 5 | 4.52 | 90 | | | | | 64 - 115 |
| PETN | 5 | 4.8 | 96 | | | | | 57 - 126 |
| RDX | 5 | 4 | 80 | | | | | 64 - 117 |
| TATB | 2.5 | 3.76 | 150 * | | | | | 47 - 135 |
| Tetryl | 5 | 4.01 | 80 | | | | | 55 - 122 |
| m-Dinitrobenzene | 5 | 4.66 | 93 | | | | | 74 - 117 |
| m-Nitrotoluene | 5 | 4.63 | 93 | | | | | 66 - 114 |
| o-Nitrotoluene | 5 | 4.49 | 90 | | | | | 64 - 115 |
| p-Nitrotoluene | 5 | 4.84 | 97 | | | | | 66 - 127 |
| tris(o-cresyl) phosphate | 5 | 3.64 | 73 | | | | | 43 - 104 |

Column to be used to flag recovery and RPD values with an asterisk

* Values outside of QC limits

3
High Explosives MS/MSD Summary

Lab Name: GEL Laboratories LLC

Client ID: CAWA-17-133288

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Extract Batch Code: 1671745

Date Extracted: 07-JUN-17

GEL Spike ID: 1203805559

GEL SpikeDup ID: 1203805560

Analysis Date/Time: 10-JUN-17 02:32

MSD Analysis Date/Time: 10-JUN-17 03:07

Reporting Units: ug/L

QC Type: MS/MSD

| Compound | Spike Added | Sample Conc | MS Conc | MS Rec # | MSD Conc | MSD Rec # | RPD # | RPD Limit | Rec Limits |
|----------------------------|-------------|-------------|---------|----------|----------|-----------|-------|-----------|------------|
| TATB | 2.60417 | 0 | 3.88 | 149 | 3.97 | 152 * | 2 | 30 | 38 - 149 |
| Tetryl | 5.20833 | 0 | 3.82 | 73 | 3.79 | 73 | 1 | 30 | 50 - 126 |
| m-Dinitrobenzene | 5.20833 | 0 | 4.93 | 95 | 4.53 | 87 | 8 | 30 | 74 - 117 |
| m-Nitrotoluene | 5.20833 | 0 | 4.09 | 78 | 3.95 | 76 | 3 | 30 | 59 - 120 |
| o-Nitrotoluene | 5.20833 | 0 | 4.64 | 89 | 4.01 | 77 | 15 | 30 | 56 - 119 |
| p-Nitrotoluene | 5.20833 | 0 | 4.8 | 92 | 4.24 | 81 | 12 | 30 | 61 - 129 |
| tris(o-cresyl) phosphate | 5.20833 | 0 | 3.68 | 71 | 3.71 | 71 | 1 | 30 | 38 - 105 |
| 1,3,5-Trinitrobenzene | 5.20833 | 0 | 4.34 | 83 | 4.11 | 79 | 5 | 30 | 67 - 111 |
| 2,4,6-Trinitrotoluene | 5.20833 | .0975 | 4.56 | 86 | 4.59 | 86 | 0 | 30 | 66 - 112 |
| 2,4-Diamino-6-nitrotoluene | 5.20833 | 0 | 5.74 | 110 | 6.16 | 118 | 7 | 30 | 50 - 121 |
| 2,4-Dinitrotoluene | 5.20833 | .0404 | 4.61 | 88 | 5.19 | 99 | 12 | 30 | 69 - 113 |
| 2,6-Diamino-4-nitrotoluene | 5.20833 | 0 | 5.42 | 104 | 5.58 | 107 | 3 | 30 | 53 - 127 |
| 2,6-Dinitrotoluene | 5.20833 | 0 | 4.49 | 86 | 4.26 | 82 | 5 | 30 | 70 - 106 |
| 2-Amino-4,6-dinitrotoluene | 5.20833 | .342 | 4.46 | 79 | 4.7 | 84 | 5 | 30 | 67 - 115 |
| 3,5-Dinitroaniline | 5.20833 | .103 | 5.81 | 110 | 5.72 | 108 | 2 | 30 | 70 - 121 |
| 4-Amino-2,6-dinitrotoluene | 5.20833 | .446 | 4.76 | 83 | 5.32 | 94 | 11 | 30 | 65 - 120 |
| HMX | 5.20833 | 1.69 | 6.44 | 91 | 6.47 | 92 | 1 | 30 | 44 - 128 |
| Nitrobenzene | 5.20833 | 0 | 4.27 | 82 | 4 | 77 | 6 | 30 | 62 - 116 |
| PETN | 5.20833 | 0 | 4.52 | 87 | 4.21 | 81 | 7 | 30 | 51 - 131 |
| RDX | 5.20833 | 21.2 | 26.4 | 100 | 22.2 | 20 * | 17 | 30 | 57 - 125 |

#Column to be used to flag recovery and RPD values with an asterisk

Quality Control Data

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805555

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608029.wiff

Date Analyzed: 09-JUN-17 09:35

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|-------|-------|
| 118-96-7 | 2,4,6-Trinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 121-82-4 | RDX | .25 | U | 0.080 | 0.250 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |
| 13980-04-6 | TNX | .25 | U | 0.080 | 0.250 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 2691-41-0 | HMX | .25 | U | 0.080 | 0.250 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 5755-27-1 | MNX | .25 | U | 0.080 | 0.250 |
| <i>5755-27-1</i> | <i>MNX</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 80251-29-2 | DNX | .25 | U | 0.080 | 0.250 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 88-72-2 | o-Nitrotoluene | .25 | U | 0.082 | 0.250 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | .25 | U | 0.080 | 0.250 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-08-1 | m-Nitrotoluene | .25 | U | 0.080 | 0.250 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: MB for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805555

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|----|-------|-------|
| 99-35-4 | 1,3,5-Trinitrobenzene | .25 | U | 0.080 | 0.250 |
| 99-35-4 | 1,3,5-Trinitrobenzene | | | | |
| 99-65-0 | m-Dinitrobenzene | .25 | U | 0.080 | 0.250 |
| 99-65-0 | m-Dinitrobenzene | | | | |
| 479-45-8 | Tetryl | .5 | U | 0.080 | 0.500 |
| 479-45-8 | Tetryl | | | | |
| 78-11-5 | PETN | .5 | U | 0.100 | 0.500 |
| 78-11-5 | PETN | | | | |
| 99-99-0 | p-Nitrotoluene | .5 | U | 0.150 | 0.500 |
| 99-99-0 | p-Nitrotoluene | | | | |
| 3058-38-6 | TATB | 1 | U | 0.300 | 1.00 |
| 3058-38-6 | TATB | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 1 | QU | 0.300 | 1.00 |
| 618-87-1 | 3,5-Dinitroaniline | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 1 | U | 0.300 | 1.00 |
| 78-30-8 | tris(o-cresyl) phosphate | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 2.5 | U | 0.500 | 2.50 |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 2.5 | U | 0.500 | 2.50 |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805556

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608053.wiff

Date Analyzed: 09-JUN-17 23:37

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|---------------------------------|---|----------------|---|-------|-------|
| 13980-04-6 <i>13980-04-6</i> | TNX <i>TNX</i> | .25 | U | 0.080 | 0.250 |
| 5755-27-1 <i>5755-27-1</i> | MNX <i>MNX</i> | .25 | U | 0.080 | 0.250 |
| 80251-29-2 <i>80251-29-2</i> | DNX <i>DNX</i> | .25 | U | 0.080 | 0.250 |
| 78-30-8 <i>78-30-8</i> | tris(o-cresyl) phosphate <i>tris(o-cresyl) phosphate</i> | 3.64 | | 0.300 | 1.00 |
| 3058-38-6 <i>3058-38-6</i> | TATB <i>TATB</i> | 3.76 | | 0.300 | 1.00 |
| 2691-41-0 <i>2691-41-0</i> | HMX <i>HMX</i> | 3.92 | | 0.080 | 0.250 |
| 6629-29-4 <i>6629-29-4</i> | 2,4-Diamino-6-nitrotoluene <i>2,4-Diamino-6-nitrotoluene</i> | 3.93 | | 0.500 | 2.50 |
| 121-82-4 <i>121-82-4</i> | RDX <i>RDX</i> | 4 | | 0.080 | 0.250 |
| 479-45-8 <i>479-45-8</i> | Tetryl <i>Tetryl</i> | 4.01 | | 0.080 | 0.500 |
| 99-35-4 <i>99-35-4</i> | 1,3,5-Trinitrobenzene <i>1,3,5-Trinitrobenzene</i> | 4.19 | | 0.080 | 0.250 |
| 59229-75-3 <i>59229-75-3</i> | 2,6-Diamino-4-nitrotoluene <i>2,6-Diamino-4-nitrotoluene</i> | 4.21 | | 0.500 | 2.50 |
| 121-14-2 <i>121-14-2</i> | 2,4-Dinitrotoluene <i>2,4-Dinitrotoluene</i> | 4.41 | | 0.080 | 0.250 |
| 88-72-2 <i>88-72-2</i> | o-Nitrotoluene <i>o-Nitrotoluene</i> | 4.49 | | 0.082 | 0.250 |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: LCS for batch 1671745

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805556

Sample Amount 1000 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|------------|----------------------------|----------------|---|-------|-------|
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | 4.52 | | 0.080 | 0.250 |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | | | | |
| 98-95-3 | Nitrobenzene | 4.52 | | 0.080 | 0.250 |
| 98-95-3 | Nitrobenzene | | | | |
| 99-08-1 | m-Nitrotoluene | 4.63 | | 0.080 | 0.250 |
| 99-08-1 | m-Nitrotoluene | | | | |
| 99-65-0 | m-Dinitrobenzene | 4.66 | | 0.080 | 0.250 |
| 99-65-0 | m-Dinitrobenzene | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | 4.76 | | 0.080 | 0.250 |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | | | | |
| 78-11-5 | PETN | 4.8 | | 0.100 | 0.500 |
| 78-11-5 | PETN | | | | |
| 99-99-0 | p-Nitrotoluene | 4.84 | | 0.150 | 0.500 |
| 99-99-0 | p-Nitrotoluene | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | 4.89 | | 0.080 | 0.250 |
| 118-96-7 | 2,4,6-Trinitrotoluene | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | 5.31 | | 0.080 | 0.250 |
| 606-20-2 | 2,6-Dinitrotoluene | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 6.02 | | 0.300 | 1.00 |
| 618-87-1 | 3,5-Dinitroaniline | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MS)MS

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805559

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608058.wiff

Date Analyzed: 10-JUN-17 02:32

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 13980-04-6 | TNX | .0885 | J | 0.0833 | 0.260 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 5755-27-1 | MNX | .175 | J | 0.0833 | 0.260 |
| <i>5755-27-1</i> | <i>MNX</i> | | | | |
| 80251-29-2 | DNX | .26 | U | 0.0833 | 0.260 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 3.68 | | 0.313 | 1.04 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 479-45-8 | Tetryl | 3.82 | | 0.0833 | 0.521 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |
| 3058-38-6 | TATB | 3.88 | | 0.313 | 1.04 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 99-08-1 | m-Nitrotoluene | 4.09 | | 0.0833 | 0.260 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 98-95-3 | Nitrobenzene | 4.27 | | 0.0833 | 0.260 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | 4.34 | | 0.0833 | 0.260 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | 4.46 | | 0.0833 | 0.260 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | 4.49 | | 0.0833 | 0.260 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |
| 78-11-5 | PETN | 4.52 | | 0.104 | 0.521 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | 4.56 | | 0.0833 | 0.260 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MS)MS

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805559

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 121-14-2 | 2,4-Dinitrotoluene | 4.61 | | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | 4.64 | | 0.0854 | 0.260 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | 4.76 | | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 99-99-0 | p-Nitrotoluene | 4.8 | | 0.156 | 0.521 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 99-65-0 | m-Dinitrobenzene | 4.93 | | 0.0833 | 0.260 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 5.42 | | 0.521 | 2.60 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 5.74 | | 0.521 | 2.60 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 5.81 | | 0.313 | 1.04 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 2691-41-0 | HMX | 6.44 | | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 121-82-4 | RDX | 26.4 | | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805560

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

GEL data file: EXP0608059.wiff

Date Analyzed: 10-JUN-17 03:07

Dilution Factor: 2

Concentration Units: ug/L

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|---------------------------------|----------------|---|--------|-------|
| 5755-27-1 | MNX | .164 | J | 0.0833 | 0.260 |
| <i>5755-27-1</i> | <i>MNX</i> | | | | |
| 13980-04-6 | TNX | .26 | U | 0.0833 | 0.260 |
| <i>13980-04-6</i> | <i>TNX</i> | | | | |
| 80251-29-2 | DNX | .26 | U | 0.0833 | 0.260 |
| <i>80251-29-2</i> | <i>DNX</i> | | | | |
| 78-30-8 | tris(o-cresyl) phosphate | 3.71 | | 0.313 | 1.04 |
| <i>78-30-8</i> | <i>tris(o-cresyl) phosphate</i> | | | | |
| 479-45-8 | Tetryl | 3.79 | | 0.0833 | 0.521 |
| <i>479-45-8</i> | <i>Tetryl</i> | | | | |
| 99-08-1 | m-Nitrotoluene | 3.95 | | 0.0833 | 0.260 |
| <i>99-08-1</i> | <i>m-Nitrotoluene</i> | | | | |
| 3058-38-6 | TATB | 3.97 | | 0.313 | 1.04 |
| <i>3058-38-6</i> | <i>TATB</i> | | | | |
| 98-95-3 | Nitrobenzene | 4 | | 0.0833 | 0.260 |
| <i>98-95-3</i> | <i>Nitrobenzene</i> | | | | |
| 88-72-2 | o-Nitrotoluene | 4.01 | | 0.0854 | 0.260 |
| <i>88-72-2</i> | <i>o-Nitrotoluene</i> | | | | |
| 99-35-4 | 1,3,5-Trinitrobenzene | 4.11 | | 0.0833 | 0.260 |
| <i>99-35-4</i> | <i>1,3,5-Trinitrobenzene</i> | | | | |
| 78-11-5 | PETN | 4.21 | | 0.104 | 0.521 |
| <i>78-11-5</i> | <i>PETN</i> | | | | |
| 99-99-0 | p-Nitrotoluene | 4.24 | | 0.156 | 0.521 |
| <i>99-99-0</i> | <i>p-Nitrotoluene</i> | | | | |
| 606-20-2 | 2,6-Dinitrotoluene | 4.26 | | 0.0833 | 0.260 |
| <i>606-20-2</i> | <i>2,6-Dinitrotoluene</i> | | | | |

1
High Explosives Analysis Data Sheet

Lab Name: GEL Laboratories LLC

Client Sample ID: CAWA-17-133288(424596009MSD)MSD

Lab Code: GEL

GEL Job No (SDG) 2017-1644

Matrix: WATER

GEL Sample ID: 1203805560

Sample Amount 960 mL

Date Received: 06-JUN-17

Moisture: .

Extraction Batch ID: 1671745

Extraction Type Sol Exchange

Date Extracted: 07-JUN-17

Concentrated Extract Volume (mL) 5

Injection Volume (uL):50

| Cas No. | Compound | Concentration* | Q | MDL | PQL |
|-------------------|-----------------------------------|----------------|---|--------|-------|
| 99-65-0 | m-Dinitrobenzene | 4.53 | | 0.0833 | 0.260 |
| <i>99-65-0</i> | <i>m-Dinitrobenzene</i> | | | | |
| 118-96-7 | 2,4,6-Trinitrotoluene | 4.59 | | 0.0833 | 0.260 |
| <i>118-96-7</i> | <i>2,4,6-Trinitrotoluene</i> | | | | |
| 35572-78-2 | 2-Amino-4,6-dinitrotoluene | 4.7 | | 0.0833 | 0.260 |
| <i>35572-78-2</i> | <i>2-Amino-4,6-dinitrotoluene</i> | | | | |
| 121-14-2 | 2,4-Dinitrotoluene | 5.19 | | 0.0833 | 0.260 |
| <i>121-14-2</i> | <i>2,4-Dinitrotoluene</i> | | | | |
| 19406-51-0 | 4-Amino-2,6-dinitrotoluene | 5.32 | | 0.0833 | 0.260 |
| <i>19406-51-0</i> | <i>4-Amino-2,6-dinitrotoluene</i> | | | | |
| 59229-75-3 | 2,6-Diamino-4-nitrotoluene | 5.58 | | 0.521 | 2.60 |
| <i>59229-75-3</i> | <i>2,6-Diamino-4-nitrotoluene</i> | | | | |
| 618-87-1 | 3,5-Dinitroaniline | 5.72 | | 0.313 | 1.04 |
| <i>618-87-1</i> | <i>3,5-Dinitroaniline</i> | | | | |
| 6629-29-4 | 2,4-Diamino-6-nitrotoluene | 6.16 | | 0.521 | 2.60 |
| <i>6629-29-4</i> | <i>2,4-Diamino-6-nitrotoluene</i> | | | | |
| 2691-41-0 | HMX | 6.47 | | 0.0833 | 0.260 |
| <i>2691-41-0</i> | <i>HMX</i> | | | | |
| 121-82-4 | RDX | 22.2 | | 0.0833 | 0.260 |
| <i>121-82-4</i> | <i>RDX</i> | | | | |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 08-JUN-17 17:13GEL Data File: EXP0608001.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MXN | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 08-JUN-17 17:48GEL Data File: EXP0608002.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 13-JUN-17 16:25GEL Data File: EXP0613001.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 26.23 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |

Explosives Initial Calibration Blank

Lab Name: GEL Laboratories LLCGEL Job No(SDG): 2017-1644Lab Code: GELLab Sample ID: XIBLK01Analysis Date: 13-JUN-17 17:00GEL Data File: EXP0613002.wiffInstrument ID: LCMSMS5Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 08-JUN-17 22:28

GEL Data File: EXP0608010.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2-Amino-4,6-dinitrotoluene | 0 | 3.41 |
| 4-Amino-2,6-dinitrotoluene | 0 | 3.74 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 1.42 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 7.06 |
| 3,4-Dinitrotoluene | 0 | 3.64 |
| tris(o-cresyl) phosphate | 0 | 4.72 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 3.86 |
| 2,4-Diamino-6-nitrotoluene | 0 | 4.19 |
| 2,6-Diamino-4-nitrotoluene | 0 | 4.27 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 3.53 |
| 1,3,5-Trinitrobenzene | 0 | 3.75 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 4 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 09-JUN-17 00:49

GEL Data File: EXP0608014.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 3.17 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 09-JUN-17 04:54

GEL Data File: EXP0608021.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 09-JUN-17 07:15

GEL Data File: EXP0608025.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 09-JUN-17 08:25

GEL Data File: EXP0608027.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK07

Analysis Date: 09-JUN-17 14:51

GEL Data File: EXP0608038.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 2.44 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK08

Analysis Date: 09-JUN-17 16:01

GEL Data File: EXP0608040.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK09

Analysis Date: 09-JUN-17 21:16

GEL Data File: EXP0608049.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK10

Analysis Date: 09-JUN-17 22:27

GEL Data File: EXP0608051.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK11

Analysis Date: 10-JUN-17 03:42

GEL Data File: EXP0608060.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 2.54 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK12

Analysis Date: 10-JUN-17 05:28

GEL Data File: EXP0608063.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| Nitroglycerin | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK02

Analysis Date: 13-JUN-17 21:41

GEL Data File: EXP0613010.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 2.28 |
| tris(o-cresyl) phosphate | 0 | 2.63 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 2.41 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 2.98 |
| 4-Amino-2,6-dinitrotoluene | 0 | 2.62 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK03

Analysis Date: 14-JUN-17 00:01

GEL Data File: EXP0613014.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK04

Analysis Date: 14-JUN-17 03:31

GEL Data File: EXP0613020.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 0 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK05

Analysis Date: 14-JUN-17 06:27

GEL Data File: EXP0613025.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |
| PETN | 0 | 0 |
| RDX | 0 | 15.29 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |

4A
Explosives Continuing Calibration Blank

Lab Name: GEL Laboratories LLC

GEL Job No(SDG): 2017-1644

Lab Code: GEL

Lab Sample ID: XIBLK06

Analysis Date: 14-JUN-17 07:37

GEL Data File: EXP0613027.wiff

Instrument ID: LCMSMS5

Column: Ultracarb Phenomenex 5u ODS (20)

| Compound | True | Found (ug/L) |
|----------------------------|------|--------------|
| PETN | 0 | 0 |
| RDX | 0 | 2.56 |
| Tetryl | 0 | 0 |
| m-Dinitrobenzene | 0 | 0 |
| m-Nitrotoluene | 0 | 0 |
| o-Nitrotoluene | 0 | 0 |
| p-Nitrotoluene | 0 | 0 |
| 3,4-Dinitrotoluene | 0 | 0 |
| tris(o-cresyl) phosphate | 0 | 0 |
| TATB | 0 | 0 |
| 3,5-Dinitroaniline | 0 | 0 |
| 2,4-Diamino-6-nitrotoluene | 0 | 0 |
| 2,6-Diamino-4-nitrotoluene | 0 | 0 |
| DNX | 0 | 0 |
| MNX | 0 | 0 |
| TNX | 0 | 0 |
| 1,3,5-Trinitrobenzene | 0 | 0 |
| 2,4,6-Trinitrotoluene | 0 | 0 |
| 2,4-Dinitrotoluene | 0 | 0 |
| 2,6-Dinitrotoluene | 0 | 0 |
| 2-Amino-4,6-dinitrotoluene | 0 | 0 |
| 4-Amino-2,6-dinitrotoluene | 0 | 0 |
| HMX | 0 | 0 |
| Nitrobenzene | 0 | 0 |

Miscellaneous

| DATA EXCEPTION REPORT | | | |
|--|--|---|-----------------------------|
| Mo.Day Yr. 14-JUN-17 | Division: Industrial | Quality Criteria: Specifications | Type: Process |
| Instrument Type: LC-MS/MS | Test / Method: SW846 3535A/8330B | Matrix Type: Liquid | Client Code: ESHL |
| Batch ID: 1671746 | Sample Numbers: See Below | | |
| Potentially affected work order(s)(SDG): 424596(2017-1633),424732(2017-1648),424735(2017-1647),424739(2017-1645),424741(2017-1644) Application Issues: Failed Recovery for MS/MSD, or PS/PSD Failed Recovery for LCS/LCSD | | | |
| Specification and Requirements | | DER Disposition: | |
| Exception Description: | | | |
| 1. Two high recoveries were observed for 1203805556 (LCS). The recovery for 2,6-Dinitrotoluene was 106% (72%-105%) and for TATB, the recovery was 150% (47-135%). 2. A high recovery was observed for 1203805559 (MS). The recovery for TATB was 152% (38%-149%). | | 1. The high recoveries may be the result of vagaries in the extraction process and would suggest bias high detections. No reportable detections were observed in the associated samples. 2. The high recovery may be the result of vagaries in the extraction process. The high recovery was also observed in the batch LCS. No reportable detections were observed in the associated samples. | |

Originator's Name:

Charles Wilson 14-JUN-17

Data Validator/Group Leader:

Michael Penny 14-JUN-17

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741

| Sample ID | Client ID |
|------------------|---|
| 424741001 | CAPA-17-133353 |
| 424741002 | CAPA-17-133355 |
| 424741003 | CAPA-17-133360 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741006 | CAWA-17-133318 |
| 424741007 | CAPA-17-133357 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 424741010 | CAPA-17-133361 |
| 1203805071 | Method Blank (MB) ICP |
| 1203805072 | Laboratory Control Sample (LCS) |
| 1203805075 | 424741001(CAPA-17-133353L) Serial Dilution (SD) |
| 1203805073 | 424741001(CAPA-17-133353D) Sample Duplicate (DUP) |
| 1203805074 | 424741001(CAPA-17-133353S) Matrix Spike (MS) |
| 1203805126 | Method Blank (MB) ICP-MS |
| 1203805127 | Laboratory Control Sample (LCS) |
| 1203805130 | 424741001(CAPA-17-133353L) Serial Dilution (SD) |
| 1203805128 | 424741001(CAPA-17-133353D) Sample Duplicate (DUP) |
| 1203805129 | 424741001(CAPA-17-133353S) Matrix Spike (MS) |
| 1203811029 | Method Blank (MB) CVAA |
| 1203811030 | Laboratory Control Sample (LCS) |
| 1203811035 | 424741001(CAPA-17-133353L) Serial Dilution (SD) |
| 1203811031 | 424741001(CAPA-17-133353D) Sample Duplicate (DUP) |
| 1203811033 | 424741001(CAPA-17-133353S) Matrix Spike (MS) |

Sample Analysis

Samples 424741001,002,003,004,005,006,007,008,009 and 010 in this SDG were analyzed for metals and mercury on an "as received" basis.

Method/Analysis Information

| | |
|---------------------------------------|--|
| Analytical Batch: | 1671565, 1671589, 1673857 and 1677435 |
| Prep Batch : | 1671563, 1671587 and 1673856 |
| Standard Operating Procedures: | GL-MA-E-013 REV# 28, GL-MA-E-006 REV# 13, GL-MA-E-014 REV# 29, GL-MA-E-010 REV# 34 and GL-GC-E-107 REV# 10 |
| Analytical Method: | SW846 3005A/6010C, SW846 3005A/6020A, EPA 245.2 1974 and SM:A2340B |
| Prep Method : | SW846 3005A and EPA 245.1/245.2 Prep |

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Hardness as CaCO₃ is calculated from Calcium and Magnesium results.

The Metals analysis-ICP was performed on a P E 5300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm.

The Metals analysis - ICPMS was performed on a PerkinElmer NexION 300X ICPMS. The instrument is equipped with a ESI PFA-ST nebulizer, quadrupole mass spectrometer, dual mode electron multiplier detector, and Kinetic Energy Discrimination (KED) technology. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum.

Calibration Information

Instrument Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of potassium, sodium and zinc. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360), 424741006 (CAWA-17-133318), 424741007 (CAPA-17-133357), 424741008 (CAPA-17-133358), 424741009 (CAPA-17-133359) and 424741010 (CAPA-17-133361)-ICP.

ICSA/ICSAB Statement

All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria. For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Continuing Calibration Blanks (CCB) Requirements

All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements

All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement

The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement

The following samples were selected as the quality control (QC) samples for this SDG: 424741001 (CAPA-17-133353)-ICP, ICP-MS and CVAA.

Matrix Spike (MS/MSD) Recovery Statement

The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The matrix spike met the recommended quality control acceptance criteria for percent recoveries for all applicable analytes.

Duplicate Relative Percent Difference (RPD) Statement

The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. The relative percent differences (RPD) between the sample and its duplicate (DUP) were within acceptable limits for all applicable analytes.

Serial Dilution % Difference Statement

All applicable analytes in the serial dilution (SDILT) demonstrated acceptable correlation to its associated sample and met the established acceptance percent difference criteria.

Technical Information**Holding Time Specifications**

GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP.

Sample Dilutions

The samples in this SDG did not require dilutions.

Preparation Information

The samples in this SDG were not diluted and were prepared according to the cited SOP.

Miscellaneous Information**Electronic Packaging Comment**

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

A data exception report was not required for this SDG.

Additional Comments

Total Hardness by Calculation is determined using the results of Total Calcium (Ca) and Total Magnesium (Mg) determined by ICP or ICP-MS.

Hardness = 2.497 (Ca) + 4.118 (Mg)

Please refer to the Total Ca and Total Mg data to validate results appearing on the Hardness Summary sheet. Both results are in the Inorganic/metals section of the package. There is no Batch QC for calculated results, and thus no QC Summary for the Hardness by Calculation Batch. The MDLs and PQLs are calculated using the higher of the two calculated values of Ca or Mg.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741

The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:



Name: Nik-Cole Elmore

Date: 26 JUN 2017

Title: Data Validator

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741001**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133353**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:31 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741001

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133353

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 664 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 56.6 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 17.3 | ug/L | J | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 15700 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 325 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:01 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 4110 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 10 | ug/L | U | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.948 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 0.812 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2930 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 17:52 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 40500 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 18:50 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 19600 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 95.7 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:01 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.184 | ug/L | J | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:01 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 3.28 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 17:40 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741001**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133353**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 56.2 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741002**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133355**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:39 | 061517W1-7 | 1673857 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741003**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133360**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:41 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741003

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133360

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 701 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 55.4 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 15.9 | ug/L | J | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 15400 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 337 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:26 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 4050 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 10 | ug/L | U | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.931 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2860 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:09 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 39700 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:16 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 19900 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 94.4 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:26 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 2.62 | ug/L | J | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.180 | ug/L | J | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:26 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.45 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:12 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741003**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133360**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 55.3 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741004**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133362**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:43 | 061517W1-7 | 1673857 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741005**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAWA-17-133290**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:48 | 061517W1-7 | 1673857 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

AV EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741006**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAWA-17-133318**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:50 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741006

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAWA-17-133318

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 157 | ug/L | J | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 2.72 | ug/L | J | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 144 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 918 | ug/L | | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 24400 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 99.3 | ug/L | J | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:29 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 5400 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 10 | ug/L | U | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 2.63 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2910 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:11 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 52900 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:19 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 34600 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 121 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:29 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 2.68 | ug/L | J | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 1.14 | ug/L | | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:29 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 4.15 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:15 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741006**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAWA-17-133318**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 83.1 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741007**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133357**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:51 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741007

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133357

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 1470 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 43.2 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9770 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 769 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 0.510 | ug/L | J | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:33 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 3060 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 5.96 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.580 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.35 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2700 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:13 | 170609-6 | 1671589 |
| 7440-22-4 | Silver | 0.348 | ug/L | J | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:22 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 11900 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 74.3 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:33 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 2.92 | ug/L | J | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:33 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.58 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:18 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741007**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133357**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 37 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741008**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133358**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:53 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741008

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133358

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 774 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 38.8 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9390 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 398 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:36 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 2890 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 2.35 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.641 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.08 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2540 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:15 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 33600 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:25 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 11700 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 69.3 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:36 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:36 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.32 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:21 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741008**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133358**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 35.4 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741009**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133359**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:55 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741009

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133359

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 967 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 39.8 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9550 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 481 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 2 | ug/L | U | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:39 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 2930 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 2.77 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.555 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.03 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2600 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:17 | 170609-6 | 1671589 |
| 7631-86-9 | Silica | 34700 | ug/L | | 53 | 213 | 213 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-22-4 | Silver | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:28 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 12000 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 70.6 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:39 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:39 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.31 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:24 | 061417A-1 | 1671565 |

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741009**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133359**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 35.9 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

Analytical Methods:*P** SW846 3005A/6010C**MS** SW846 3005A/6020A**AV** EPA 245.2 1974

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:** EPA**SAMPLE ID:** 424741010**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133361**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|---------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7439-97-6 | Mercury | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | AV | MTM1 | 06/15/17 11:56 | 061517W1-7 | 1673857 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644

CONTRACT: ESHL00114

METHOD TYPE: SW846

SAMPLE ID: 424741010

BASIS: As Received

DATE COLLECTED 01-JUN-17

CLIENT ID: CAPA-17-133361

LEVEL: Low

DATE RECEIVED 06-JUN-17

MATRIX: W

%SOLIDS: 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|-----------|------------|--------|-------|------|-------|-----|------|----|----|---------|----------------|----------------|------------------|
| 7429-90-5 | Aluminum | 1490 | ug/L | | 68 | 200 | 200 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-36-0 | Antimony | 3 | ug/L | U | 1 | 3 | 3 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-38-2 | Arsenic | 2.02 | ug/L | J | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-39-3 | Barium | 42.8 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-41-7 | Beryllium | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-42-8 | Boron | 50 | ug/L | U | 15 | 50 | 50 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-43-9 | Cadmium | 1 | ug/L | U | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-70-2 | Calcium | 9760 | ug/L | | 50 | 200 | 200 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-47-3 | Chromium | 10 | ug/L | U | 3 | 10 | 10 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-48-4 | Cobalt | 5 | ug/L | U | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-50-8 | Copper | 10 | ug/L | U | 3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-89-6 | Iron | 786 | ug/L | | 30 | 100 | 100 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-92-1 | Lead | 0.538 | ug/L | J | 0.5 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:42 | 170608-5 | 1671589 |
| 7439-95-4 | Magnesium | 3050 | ug/L | | 110 | 300 | 300 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-96-5 | Manganese | 5.94 | ug/L | J | 2 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7439-98-7 | Molybdenum | 0.678 | ug/L | | 0.2 | 0.5 | 0.5 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-02-0 | Nickel | 1.58 | ug/L | J | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-09-7 | Potassium | 2740 | ug/L | | 50 | 150 | 150 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7782-49-2 | Selenium | 5 | ug/L | U | 2 | 5 | 5 | 1 | MS | PRB | 06/09/17 18:19 | 170609-6 | 1671589 |
| 7440-22-4 | Silver | 0.377 | ug/L | J | 0.3 | 1 | 1 | 1 | MS | PRB | 06/08/17 19:32 | 170608-2 | 1671589 |
| 7440-23-5 | Sodium | 12000 | ug/L | | 100 | 300 | 300 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-24-6 | Strontium | 74.5 | ug/L | | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-28-0 | Thallium | 2 | ug/L | U | 0.6 | 2 | 2 | 1 | MS | PRB | 06/09/17 01:42 | 170608-5 | 1671589 |
| 7440-31-5 | Tin | 10 | ug/L | U | 2.5 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-61-1 | Uranium | 0.20 | ug/L | U | 0.067 | 0.2 | 0.2 | 1 | MS | PRB | 06/09/17 01:42 | 170608-5 | 1671589 |
| 7440-62-2 | Vanadium | 2.74 | ug/L | J | 1 | 5 | 5 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |
| 7440-66-6 | Zinc | 10 | ug/L | U | 3.3 | 10 | 10 | 1 | P | HSC | 06/14/17 18:27 | 061417A-1 | 1671565 |

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: 2017-1644**CONTRACT:** ESHL00114**METHOD TYPE:****SAMPLE ID:** 424741010**BASIS:** As Received**DATE COLLECTED** 01-JUN-17**CLIENT ID:** CAPA-17-133361**LEVEL:** Low**DATE RECEIVED** 06-JUN-17**MATRIX:** W**%SOLIDS:** 0

| CAS No. | Analyte | Result | Units | Qual | MDL | PQL | CRDL | DF | M* | Analyst | Run Date | Analytical Run | Analytical Batch |
|---------|-------------------|--------|-------|------|-------|------|------|----|----|---------|----------------|----------------|------------------|
| | Hardness as CaCO3 | 36.9 | mg/L | | 0.453 | 1.24 | 1.24 | 1 | | TXT1 | 06/26/17 14:05 | | 1677435 |

Prep Information:

| Analytical Batch | Prep Batch | Prep Method | Initial wt./vol. | Units | Final wt./vol. | Units | Date | Analyst |
|------------------|------------|----------------------|------------------|-------|----------------|-------|----------|---------|
| 1671565 | 1671563 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1671589 | 1671587 | SW846 3005A | 50 | mL | 50 | mL | 06/06/17 | CXW4 |
| 1673857 | 1673856 | EPA 245.1/245.2 Prep | 20 | mL | 20 | mL | 06/14/17 | AXS5 |

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.2 1974

Quality Control Summary

METALS
-3b-
PREPARATION BLANK SUMMARY

SDG NO. 2017-1644

Contract: ESHL00114

Matrix: W

| <u>Sample ID</u> | <u>Analyte</u> | <u>Result</u> | <u>Units</u> | <u>Acceptance Window</u> | <u>Conc Qual</u> | <u>M*</u> | <u>MDL</u> | <u>RDL</u> |
|------------------|----------------|---------------|--------------|--------------------------|------------------|-----------|------------|------------|
| 1203805071 | Potassium | 50 | ug/L | +/-150 | U | P | 50 | 150 |
| | Silica | 53 | ug/L | +/-213 | U | P | 53 | 213 |
| | Sodium | 100 | ug/L | +/-300 | U | P | 100 | 300 |
| | Strontium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Tin | 2.5 | ug/L | +/-10 | U | P | 2.5 | 10 |
| | Barium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Boron | 15 | ug/L | +/-50 | U | P | 15 | 50 |
| | Cobalt | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Iron | 30 | ug/L | +/-100 | U | P | 30 | 100 |
| | Manganese | 2 | ug/L | +/-10 | U | P | 2 | 10 |
| | Magnesium | 110 | ug/L | +/-300 | U | P | 110 | 300 |
| | Copper | 3 | ug/L | +/-10 | U | P | 3 | 10 |
| | Calcium | 50 | ug/L | +/-200 | U | P | 50 | 200 |
| | Beryllium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Aluminum | 68 | ug/L | +/-200 | U | P | 68 | 200 |
| | Vanadium | 1 | ug/L | +/-5 | U | P | 1 | 5 |
| | Zinc | -4.22 | ug/L | +/-10 | J | P | 3.3 | 10 |
| 1203805126 | Antimony | 1 | ug/L | +/-3 | U | MS | 1 | 3 |
| | Arsenic | 2 | ug/L | +/-5 | U | MS | 2 | 5 |
| | Cadmium | 0.3 | ug/L | +/-1 | U | MS | 0.3 | 1 |
| | Chromium | 3 | ug/L | +/-10 | U | MS | 3 | 10 |
| | Lead | 0.5 | ug/L | +/-2 | U | MS | 0.5 | 2 |
| | Molybdenum | 0.2 | ug/L | +/-0.5 | U | MS | 0.2 | 0.5 |
| | Nickel | 0.6 | ug/L | +/-2 | U | MS | 0.6 | 2 |
| | Selenium | 2 | ug/L | +/-5 | U | MS | 2 | 5 |
| | Silver | 0.3 | ug/L | +/-1 | U | MS | 0.3 | 1 |
| | Thallium | 0.6 | ug/L | +/-2 | U | MS | 0.6 | 2 |
| | Uranium | 0.067 | ug/L | +/-0.2 | U | MS | 0.067 | 0.2 |
| 1203811029 | Mercury | 0.067 | ug/L | +/-0.2 | U | AV | 0.067 | 0.2 |

*Analytical Methods:

P SW846 3005A/6010C
MS SW846 3005A/6020A
AV EPA 245.1/245.2

METALS

-5a-

Matrix Spike Summary

SDG NO. 2017-1644 Client ID: CAPA-17-133353S

Contract: ESHL00114 Level: Low

Matrix: WATER % Solids:

Sample ID: 424741001 Spike ID: 1203805074

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance Limit</u> | <u>Spiked Result</u> | <u>C</u> | <u>Sample Result</u> | <u>C</u> | <u>Spike Added</u> | <u>% Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Aluminum | ug/L | 75-125 | 5750 | | 664 | | 5000 | 102 | | P |
| Barium | ug/L | 75-125 | 548 | | 56.6 | | 500 | 98.3 | | P |
| Beryllium | ug/L | 75-125 | 498 | | 1 | U | 500 | 99.6 | | P |
| Boron | ug/L | 75-125 | 531 | | 17.3 | J | 500 | 103 | | P |
| Calcium | ug/L | 75-125 | 20700 | | 15700 | | 5000 | 99.5 | | P |
| Cobalt | ug/L | 75-125 | 491 | | 1 | U | 500 | 98.3 | | P |
| Copper | ug/L | 75-125 | 520 | | 3 | U | 500 | 104 | | P |
| Iron | ug/L | 75-125 | 5370 | | 325 | | 5000 | 101 | | P |
| Magnesium | ug/L | 75-125 | 9090 | | 4110 | | 5000 | 99.4 | | P |
| Manganese | ug/L | 75-125 | 493 | | 2 | U | 500 | 98.3 | | P |
| Potassium | ug/L | 75-125 | 8010 | | 2930 | | 5000 | 102 | | P |
| Silica | ug/L | 75-125 | 51700 | | 40500 | | 10700 | 105 | | P |
| Sodium | ug/L | 75-125 | 25600 | | 19600 | | 5000 | 119 | | P |
| Strontium | ug/L | 75-125 | 601 | | 95.7 | | 500 | 101 | | P |
| Tin | ug/L | 75-125 | 496 | | 2.5 | U | 500 | 98.8 | | P |
| Vanadium | ug/L | 75-125 | 511 | | 3.28 | J | 500 | 101 | | P |
| Zinc | ug/L | 75-125 | 469 | | 3.3 | U | 500 | 93.8 | | P |

*Analytical Methods:

P SW846 3005A/6010C

METALS

-5a-

Matrix Spike Summary

SDG NO. 2017-1644 Client ID: CAPA-17-133353S

Contract: ESHL00114 Level: Low

Matrix: WATER % Solids:

Sample ID: 424741001 Spike ID: 1203805129

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance Limit</u> | <u>Spiked Result</u> | <u>C</u> | <u>Sample Result</u> | <u>C</u> | <u>Spike Added</u> | <u>% Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Antimony | ug/L | 75-125 | 50.1 | | 1 | U | 50 | 99.8 | | MS |
| Arsenic | ug/L | 75-125 | 52 | | 2 | U | 50 | 100 | | MS |
| Cadmium | ug/L | 75-125 | 49.9 | | 0.3 | U | 50 | 99.9 | | MS |
| Chromium | ug/L | 75-125 | 49.6 | | 3 | U | 50 | 97.4 | | MS |
| Lead | ug/L | 75-125 | 47.4 | | 0.5 | U | 50 | 94.5 | | MS |
| Nickel | ug/L | 75-125 | 49.1 | | 0.812 | J | 50 | 96.5 | | MS |
| Selenium | ug/L | 75-125 | 47 | | 2 | U | 50 | 92 | | MS |
| Silver | ug/L | 75-125 | 50.2 | | 0.3 | U | 50 | 100 | | MS |
| Thallium | ug/L | 75-125 | 43.9 | | 0.6 | U | 50 | 87.8 | | MS |
| Uranium | ug/L | 75-125 | 46.6 | | 0.184 | J | 50 | 92.8 | | MS |
| Molybdenum | ug/L | 75-125 | 51.9 | | 0.948 | | 50 | 102 | | MS |

*Analytical Methods:

MS SW846 3005A/6020A

METALS

-5a-

Matrix Spike Summary

SDG NO. 2017-1644 Client ID: CAPA-17-133353S

Contract: ESHL00114 Level: Low

Matrix: WATER % Solids:

Sample ID: 424741001 Spike ID: 1203811033

| <u>Analyte</u> | <u>Units</u> | <u>Acceptance Limit</u> | <u>Spiked Result</u> | <u>C</u> | <u>Sample Result</u> | <u>C</u> | <u>Spike Added</u> | <u>% Recovery</u> | <u>Qual</u> | <u>M*</u> |
|----------------|--------------|-----------------------------|--------------------------|----------|--------------------------|----------|------------------------|-----------------------|-------------|-----------|
| Mercury | ug/L | 75-125 | 2.08 | | 0.067 | U | 2 | 104 | | AV |

*Analytical Methods:

AV EPA 245.1/245.2

Metals
–6–
Duplicate Sample Summary

SDG No.: 2017–1644

Lab Code: GEL

Contract: ESHL00114

Client ID: CAPA–17–133353D

Matrix: WATER

Level: Low

Sample ID: 424741001

Duplicate ID: 1203805073

Percent Solids for Dup: N/A

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M* |
|-----------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Aluminum | ug/L | +/-200 | 664 | | 647 | | 2.55 | | P |
| Barium | ug/L | +/-20% | 56.6 | | 56 | | 1.16 | | P |
| Beryllium | ug/L | | 1 U | | 1 U | | | | P |
| Boron | ug/L | +/-50 | 17.3 J | | 16.2 J | | 6.54 | | P |
| Calcium | ug/L | +/-20% | 15700 | | 15500 | | 1.48 | | P |
| Cobalt | ug/L | | 1 U | | 1 U | | | | P |
| Copper | ug/L | | 3 U | | 3 U | | | | P |
| Iron | ug/L | +/-100 | 325 | | 324 | | .401 | | P |
| Magnesium | ug/L | +/-20% | 4110 | | 4050 | | 1.64 | | P |
| Manganese | ug/L | | 2 U | | 2 U | | | | P |
| Potassium | ug/L | +/-20% | 2930 | | 2870 | | 2.21 | | P |
| Silica | ug/L | +/-20% | 40500 | | 39700 | | 2.01 | | P |
| Sodium | ug/L | +/-20% | 19600 | | 20000 | | 1.78 | | P |
| Strontium | ug/L | +/-20% | 95.7 | | 94.9 | | .858 | | P |
| Tin | ug/L | | 2.5 U | | 2.5 U | | | | P |
| Vanadium | ug/L | +/-5 | 3.28 J | | 2.3 J | | 34.9 | | P |
| Zinc | ug/L | | 3.3 U | | 3.3 U | | | | P |

*Analytical Methods:

P SW846 3005A/6010C

Metals
-6-
Duplicate Sample Summary

SDG No.: 2017-1644

Lab Code: GEL

Contract: ESHL00114

Client ID: CAPA-17-133353D

Matrix: WATER

Level: Low

Sample ID: 424741001

Duplicate ID: 1203805128

Percent Solids for Dup: N/A

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M* |
|------------|-------|------------------|---------------|---|------------------|---|------|------|----|
| Antimony | ug/L | | 1 U | | 1 U | | | | MS |
| Arsenic | ug/L | | 2 U | | 2 U | | | | MS |
| Cadmium | ug/L | | 0.3 U | | 0.3 U | | | | MS |
| Chromium | ug/L | | 3 U | | 3 U | | | | MS |
| Lead | ug/L | | 0.5 U | | 0.5 U | | | | MS |
| Molybdenum | ug/L | +/- .5 | 0.948 | | 0.933 | | 1.59 | | MS |
| Nickel | ug/L | | 0.812 J | | 0.6 U | | 200 | | MS |
| Selenium | ug/L | | 2 U | | 2 U | | | | MS |
| Silver | ug/L | | 0.3 U | | 0.3 U | | | | MS |
| Thallium | ug/L | | 0.6 U | | 0.6 U | | | | MS |
| Uranium | ug/L | +/- .2 | 0.184 J | | 0.177 J | | 3.88 | | MS |

*Analytical Methods:

MS SW846 3005A/6020A

Metals
–6–
Duplicate Sample Summary

SDG No.: 2017–1644**Lab Code:** GEL**Contract:** ESHL00114**Client ID:** CAPA–17–133353D**Matrix:** WATER**Level:** Low**Sample ID:** 424741001**Duplicate ID:** 1203811031**Percent Solids for Dup:** N/A

| Analyte | Units | Acceptance Limit | Sample Result | C | Duplicate Result | C | RPD | Qual | M* |
|---------|-------|---------------------|------------------|---|---------------------|---|-----|------|----|
| Mercury | ug/L | | 0.067 | U | 0.067 | U | | | AV |

*Analytical Methods:
AV EPA 245.1/245.2

METALS

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Laboratory Control Sample Summary

SDG NO. 2017-1644

Contract: ESHL00114

Aqueous LCS Source:OS2I

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203805072 | | | | | | | | |
| | Aluminum | ug/L | 5000 | 5130 | | 103 | 80-120 | P |
| | Barium | ug/L | 500 | 505 | | 101 | 80-120 | P |
| | Beryllium | ug/L | 500 | 503 | | 101 | 80-120 | P |
| | Boron | ug/L | 500 | 514 | | 103 | 80-120 | P |
| | Calcium | ug/L | 5000 | 5070 | | 101 | 80-120 | P |
| | Cobalt | ug/L | 500 | 511 | | 102 | 80-120 | P |
| | Copper | ug/L | 500 | 520 | | 104 | 80-120 | P |
| | Iron | ug/L | 5000 | 5120 | | 102 | 80-120 | P |
| | Magnesium | ug/L | 5000 | 5170 | | 103 | 80-120 | P |
| | Manganese | ug/L | 500 | 510 | | 102 | 80-120 | P |
| | Potassium | ug/L | 5000 | 5150 | | 103 | 80-120 | P |
| | Silica | ug/L | 10700 | 10600 | | 99.1 | 80-120 | P |
| | Sodium | ug/L | 5000 | 5490 | | 110 | 80-120 | P |
| | Strontium | ug/L | 500 | 515 | | 103 | 80-120 | P |
| | Tin | ug/L | 500 | 499 | | 99.9 | 80-120 | P |
| | Vanadium | ug/L | 500 | 512 | | 102 | 80-120 | P |
| | Zinc | ug/L | 500 | 479 | | 95.8 | 80-120 | P |

*Analytical Methods:

P SW846 3005A/6010C

METALS

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Laboratory Control Sample Summary

SDG NO. 2017-1644

Contract: ESHL00114

Aqueous LCS Source:O2Si

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203805127 | | | | | | | | |
| | Antimony | ug/L | 50 | 50.4 | | 101 | 80-120 | MS |
| | Arsenic | ug/L | 50 | 53.3 | | 107 | 80-120 | MS |
| | Cadmium | ug/L | 50 | 50.5 | | 101 | 80-120 | MS |
| | Chromium | ug/L | 50 | 51.8 | | 104 | 80-120 | MS |
| | Lead | ug/L | 50 | 49.5 | | 99 | 80-120 | MS |
| | Molybdenum | ug/L | 50 | 49.8 | | 99.6 | 80-120 | MS |
| | Nickel | ug/L | 50 | 51.9 | | 104 | 80-120 | MS |
| | Silver | ug/L | 50 | 50.7 | | 101 | 80-120 | MS |
| | Thallium | ug/L | 50 | 45.1 | | 90.3 | 80-120 | MS |
| | Uranium | ug/L | 50 | 47.2 | | 94.5 | 80-120 | MS |
| | Selenium | ug/L | 50 | 51.2 | | 102 | 80-120 | MS |

*Analytical Methods:

MS SW846 3005A/6020A

METALS

-7-

Laboratory Control Sample Summary

SDG NO. 2017-1644

Contract: ESHL00114

Aqueous LCS Source: GEL

Solid LCS Source:

| <u>Sample ID</u> | <u>Analyte</u> | <u>Units</u> | <u>True Value</u> | <u>Result</u> | <u>C</u> | <u>% Recovery</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|------------------|----------------|--------------|-------------------|---------------|----------|-------------------|-------------------------|-----------|
| 1203811030 | Mercury | ug/L | 2 | 2.08 | | 104 | 85-115 | AV |

*Analytical Methods:

AV EPA 245.1/245.2

METALS

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Serial Dilution Sample Summary

SDG NO. 2017-1644

Client ID: CAPA-17-133353L

Contract: ESHL00114

Matrix: LIQUID

Level: Low

Sample ID: 424741001

Serial Dilution ID: 1203805075

| <u>Analyte</u> | <u>Initial Value ug/L</u> | <u>C</u> | <u>Serial Value ug/L</u> | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Aluminum | 664 | | 679 | J | 2.358 | | | P |
| Barium | 56.6 | | 57.7 | | 1.911 | | 10 | P |
| Beryllium | 1 | U | 5 | U | | | | P |
| Boron | 17.3 | J | 75 | U | 52.718 | | | P |
| Calcium | 15700 | | 16100 | | 2.573 | | 10 | P |
| Cobalt | 1 | U | 5 | U | | | | P |
| Copper | 3 | U | 15 | U | | | | P |
| Iron | 325 | | 339 | J | 4.313 | | | P |
| Magnesium | 4110 | | 4070 | | 1.058 | | | P |
| Manganese | 2 | U | 10 | U | | | | P |
| Potassium | 2930 | | 3030 | | 3.494 | | 10 | P |
| Silica | 40500 | | 40100 | | .913 | | 10 | P |
| Sodium | 19600 | | 20700 | | 5.351 | | 10 | P |
| Strontium | 95.7 | | 98.4 | | 2.825 | | 10 | P |
| Tin | 2.5 | U | 12.5 | U | | | | P |
| Vanadium | 3.28 | J | 5 | U | 135.167 | | | P |
| Zinc | 3.3 | U | 16.5 | U | | | | P |

*Analytical Methods:

P SW846 3005A/6010C

METALS

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Serial Dilution Sample Summary

SDG NO. 2017-1644

Client ID: CAPA-17-133353L

Contract: ESHL00114

Matrix: LIQUID

Level: Low

Sample ID: 424741001

Serial Dilution ID: 1203805130

| <u>Analyte</u> | <u>Initial Value ug/L</u> | <u>C</u> | <u>Serial Value ug/L</u> | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Antimony | 1 | U | 5 | U | | | | MS |
| Arsenic | 2 | U | 10 | U | | | | MS |
| Cadmium | .3 | U | 1.5 | U | | | | MS |
| Chromium | 3 | U | 15 | U | | | | MS |
| Lead | .5 | U | 2.5 | U | | | | MS |
| Molybdenum | .948 | | 1.15 | J | 20.781 | | | MS |
| Nickel | .812 | J | 5.81 | J | 614.901 | | | MS |
| Selenium | 2 | U | 10 | U | | | | MS |
| Silver | .3 | U | 1.5 | U | | | | MS |
| Thallium | .6 | U | 3 | U | | | | MS |
| Uranium | .184 | J | .335 | U | 2.174 | | | MS |

*Analytical Methods:

MS SW846 3005A/6020A

METALS

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Serial Dilution Sample Summary

SDG NO. 2017-1644 **Client ID:** CAPA-17-133353L**Contract:** ESHL00114**Matrix:** LIQUID **Level:** Low**Sample ID:** 424741001 **Serial Dilution ID:** 1203811035

| <u>Analyte</u> | <u>Initial Value ug/L</u> | <u>C</u> | <u>Serial Value ug/L</u> | <u>C</u> | <u>% Difference</u> | <u>Qual</u> | <u>Acceptance Limit</u> | <u>M*</u> |
|----------------|-----------------------------------|----------|----------------------------------|----------|-------------------------|-------------|-----------------------------|-----------|
| Mercury | .067 | U | .335 | U | | | | AV |

*Analytical Methods:

AV EPA 245.1/245.2

General Chem Analysis

Case Narrative

**General Chemistry
Technical Case Narrative
ARS International, LLC (ARSL)
SDG #: 2017-1644
Work Order #: 424741**

Method/Analysis Information

Product: Carbon and Total Organic

Analytical Batch: 1670679 and 1671529 **Method:** SW 9060 Total Organic Carbon

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW-846:9060:

| Sample ID | Client ID |
|------------------|--|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203803827 | Method Blank (MB) |
| 1203805981 | Method Blank (MB) |
| 1203803828 | Laboratory Control Sample (LCS) |
| 1203805982 | Laboratory Control Sample (LCS) |
| 1203803830 | 424596007(CAWA-17-134191) Sample Duplicate (DUP) |
| 1203805984 | 424739002(CAPA-17133356) Sample Duplicate (DUP) |
| 1203803832 | 424596007(CAWA-17-134191) Post Spike (PS) |
| 1203805986 | 424739002(CAPA-17133356) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-093 REV# 15.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Carbon analysis was performed on a O-I Analytical 1030W Carbon Analyzer.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Quality Control (QC) Information

Method Blank (MB) Statement

The MBs analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Designation

Samples 424596007 (CAWA-17-134191) and 424739002 (CAPA-17133356) were selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced

SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

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Method/Analysis Information

| | | | |
|--------------------------|--------------------------|----------------|-----------|
| Product: | Cyanide and Total | | |
| Analytical Batch: | 1671534 | Method: | WSP-CN(T) |
| Prep Batch : | 1671533 | Method: | EPA 335.4 |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 335.4 1993:

| Sample ID | Client ID |
|------------------|---|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203805008 | Method Blank (MB) |
| 1203805009 | Laboratory Control Sample (LCS) |
| 1203805010 | 424739002(CAPA-17133356) Sample Duplicate (DUP) |
| 1203805012 | 424739002(CAPA-17133356) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-095 REV# 19.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Flow Injection analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424739002 (CAPA-17133356) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an

effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Ion Chromatography
Analytical Batch: 1671680 **Method:** WSP-ANIONS

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:300.0:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805353 | Method Blank (MB) |
| 1203805354 | Laboratory Control Sample (LCS) |
| 1203805355 | 424735002(CAWA-17-134176) Sample Duplicate (DUP) |
| 1203805356 | 424735002(CAWA-17-134176) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-086 REV# 25.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Ion Chromatography analysis was performed on a Dionex ICS-5000 Ion Chromatograph.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424735002 (CAWA-17-134176) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The following samples 1203805355 (CAWA-17-134176DUP), 1203805356 (CAWA-17-134176PS), 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360) and 424741006 (CAWA-17-133318) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

| Analyte | 424741 | | |
|----------|--------|-----|-----|
| | 001 | 003 | 006 |
| Chloride | 2X | 2X | 5X |

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations

Samples 1203805355 (CAWA-17-134176DUP), 1203805356 (CAWA-17-134176PS), 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360), 424741006 (CAWA-17-133318), 424741008 (CAPA-17-133358) and 424741009 (CAPA-17-133359) were manually integrated to correctly position the baseline as set in the calibration standards.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

| | | | |
|--------------------------|-------------------------|----------------|----------------|
| Product: | Ammonia Nitrogen | | |
| Analytical Batch: | 1671935 | Method: | NH3 |
| Prep Batch : | 1671933 | Method: | EPA 350.1 Prep |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:350.1:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806101 | Method Blank (MB) |
| 1203806102 | Laboratory Control Sample (LCS) |
| 1203806103 | 424741001(CAPA-17-133353) Sample Duplicate (DUP) |
| 1203806104 | 424741001(CAPA-17-133353) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-106 REV# 9.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424741001 (CAPA-17-133353) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

| | | | |
|--------------------------|--------------------------------|----------------|----------------|
| Product: | Total Kjeldahl Nitrogen | | |
| Analytical Batch: | 1671942 | Method: | TKN |
| Prep Batch : | 1671941 | Method: | EPA 351.2 Prep |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:351.2:

| Sample ID | Client ID |
|------------------|--|
| 424741002 | CAPA-17-133355 |
| 424741004 | CAPA-17-133362 |
| 424741005 | CAWA-17-133290 |
| 424741007 | CAPA-17-133357 |
| 424741010 | CAPA-17-133361 |
| 1203806126 | Method Blank (MB) |
| 1203806127 | Laboratory Control Sample (LCS) |
| 1203806128 | 424741002(CAPA-17-133355) Sample Duplicate (DUP) |
| 1203806129 | 424741002(CAPA-17-133355) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-104 REV# 14.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424741002 (CAPA-17-133355) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

Samples 1203806126 (MB) and 1203806127 (LCS) were re-analyzed due to instrument failure. The results from the reanalysis are reported.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced

SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

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Method/Analysis Information

Product: Nitrate Nitrite by Cadmium Reduction

Analytical Batch: 1671832

Method: NO3NO2

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:353.2:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805863 | Method Blank (MB) |
| 1203805864 | Laboratory Control Sample (LCS) |
| 1203805866 | 424735002(CAWA-17-134176) Sample Duplicate (DUP) |
| 1203805867 | 424853003(NonSDG) Sample Duplicate (DUP) |
| 1203805871 | 424735002(CAWA-17-134176) Post Spike (PS) |
| 1203805872 | 424853003(NonSDG) Post Spike (PS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-128 REV# 8.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8500 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information**Method Blank (MB) Statement**

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Samples 424735002 (CAWA-17-134176) and 424853003 (NonSDG) were selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The following sample 424741006 (CAWA-17-133318) was diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

| | |
|---------------------------|--------|
| Analyte | 424741 |
| | 006 |
| Nitrogen, Nitrate/Nitrite | 5X |

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

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Method/Analysis Information

| | | | |
|--------------------------|-------------------------|----------------|----------------|
| Product: | Total Phosphorus | | |
| Analytical Batch: | 1671937 | Method: | PO4 |
| Prep Batch : | 1671936 | Method: | EPA 365.4 Prep |

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 365.4 1974:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806112 | Method Blank (MB) |
| 1203806113 | Laboratory Control Sample (LCS) |
| 1203806120 | 424735002(CAWA-17-134176) Sample Duplicate (DUP) |
| 1203806121 | 424735002(CAWA-17-134176) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-103 REV# 10.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)

All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule

The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424735002 (CAWA-17-134176) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Preservation/Integrity

All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Solids and Total Dissolved

Analytical Batch: 1671665

Method: TDS

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:160.1:

| Sample ID | Client ID |
|------------------|---|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805322 | Method Blank (MB) |
| 1203805323 | Laboratory Control Sample (LCS) |
| 1203805324 | 424739001(CAPA-17133354) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-001 REV# 15.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Solids analysis was performed on a Sartorius Balance BAL216. Solids lab

Initial Calibration

All initial calibration requirements have been met for this SDG.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Consecutive Weight Checks

All consecutive weight checks were met.

Quality Control (QC) Designation

Sample 424739001 (CAPA-17133354) was selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample:

| Analyte | Sample | Value |
|------------------------|-------------------------------|---------------|
| Total Dissolved Solids | 1203805324 (CAPA-17133354DUP) | 13.3* (0%-5%) |

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

A data exception report (DER) 1640819 was generated for sample 1203805324 (CAPA-17133354DUP) in this SDG/batch.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Specific Conductivity

Analytical Batch: 1671823

Method: EPA120.1 Specific Conductivity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:120.1:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203805834 | Laboratory Control Sample (LCS) |
| 1203805835 | 424596002(CAWA-17-133306) Sample Duplicate (DUP) |
| 1203805836 | 424747001(CAWA-17-133332) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-009 REV# 14.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Orion 160 Conductivity Meter.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Initial Standardization

The titrant was properly standardized

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Samples 424596002 (CAWA-17-133306) and 424747001 (CAWA-17-133332) were selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: pH

Analytical Batch: 1671988 **Method:** PH

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 150.1 1982:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806295 | Laboratory Control Sample (LCS) |
| 1203806296 | 424596002(CAWA-17-133306) Sample Duplicate (DUP) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-008 REV# 22.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Thermo Orion Star A111. Immediates

Initial Calibration

All initial calibration requirements have been met for this SDG.

Initial Standardization

The titrant was properly standardized

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424596002 (CAWA-17-133306) was selected for QC analysis.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified.

| Sample | Analyte | Value |
|--------------------------------|----------------|--|
| 1203806296 (CAWA-17-133306DUP) | pH | Received 02-JUN-17, out of holding 31-MAY-17 |
| 424741001 (CAPA-17-133353) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741003 (CAPA-17-133360) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741006 (CAWA-17-133318) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741008 (CAPA-17-133358) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |
| 424741009 (CAPA-17-133359) | pH | Received 06-JUN-17, out of holding 01-JUN-17 |

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

A data exception report (DER) 1640886 was generated for samples 424741001 (CAPA-17-133353), 424741003 (CAPA-17-133360), 424741006 (CAWA-17-133318), 424741008 (CAPA-17-133358), 424741009 (CAPA-17-133359) and 1203806296 (CAWA-17-133306DUP) in this SDG/batch.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are

present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product: Alkalinity

Analytical Batch: 1671987 **Method:** EPA 310.1 Total Alkalinity

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA:310.1:

| Sample ID | Client ID |
|------------------|--|
| 424741001 | CAPA-17-133353 |
| 424741003 | CAPA-17-133360 |
| 424741006 | CAWA-17-133318 |
| 424741008 | CAPA-17-133358 |
| 424741009 | CAPA-17-133359 |
| 1203806283 | Laboratory Control Sample (LCS) |
| 1203806285 | 424747001(CAWA-17-133332) Sample Duplicate (DUP) |
| 1203806287 | 424747001(CAWA-17-133332) Matrix Spike (MS) |

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-033 REV# 13.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Titration and Ion analysis was performed on a Electronic bottle-top buret.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Initial Standardization

The titrant was properly standardized

Quality Control (QC) Information

Laboratory Control Sample Duplicate (LCSD)

An LCSD was not used in place of matrix QC.

Laboratory Control Sample (LCS) Recovery

The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation

Sample 424747001 (CAWA-17-133332) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement

The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement

The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times

All samples in this SDG met the specified holding time.

Sample Dilutions

The samples in this SDG did not require dilutions.

Sample Re-analysis

The samples in this SDG did not require re-analysis.

Miscellaneous Information**Data Exception (DER) Documentation**

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report for

ARSL004 ARS International, LLC (ARS-LANS-MTOA6-25093-GEL)

Client SDG: 2017-1644 GEL Work Order: 424741


The Qualifiers in this report are defined as follows:

- * A quality control analyte recovery is outside of specified acceptance criteria
- H Analytical holding time was exceeded
- J Value is estimated
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Kristen Mizzell

Date: 22 JUN 2017

Title: Analyst I

Sample Data Summary

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133353
Sample ID: 424741001
Matrix: W
Collect Date: 01-JUN-17 11:45
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/06/17 | 2239 | 1671680 | 1 |
| Fluoride | | 0.238 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 11.3 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Chloride | | 16.7 | 0.134 | 0.400 | mg/L | | 2 | MXL2 | 06/08/17 | 0550 | 1671680 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.0858 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1012 | 1671935 | 3 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.810 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1010 | 1671832 | 4 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0776 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1323 | 1671937 | 5 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 137 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 6 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 66.0 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1345 | 1671987 | 7 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 258 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1100 | 1671823 | 8 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 10.5C | H | 7.69 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1343 | 1671988 | 9 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133353
Sample ID: 424741001

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|----|----|-------|------------------|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | | | | Analyst Comments | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:300.0 | | | | | | | | | | | |
| 3 | EPA:350.1 | | | | | | | | | | | |
| 4 | EPA:353.2 | | | | | | | | | | | |
| 5 | EPA 365.4 1974 | | | | | | | | | | | |
| 6 | EPA:160.1 | | | | | | | | | | | |
| 7 | EPA:310.1 | | | | | | | | | | | |
| 8 | EPA:120.1 | | | | | | | | | | | |
| 9 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133355
Sample ID: 424741002
Matrix: W
Collect Date: 01-JUN-17 11:45
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 2.49 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/10/17 | 0653 | 1670679 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1003 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.336 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1506 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133360
Sample ID: 424741003
Matrix: W
Collect Date: 01-JUN-17 11:45
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/06/17 | 2308 | 1671680 | 1 |
| Fluoride | | 0.243 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 11.3 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Chloride | | 16.6 | 0.134 | 0.400 | mg/L | | 2 | MXL2 | 06/08/17 | 0618 | 1671680 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.111 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1014 | 1671935 | 3 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.733 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1011 | 1671832 | 4 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0625 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1324 | 1671937 | 5 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 141 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 6 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 62.8 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1345 | 1671987 | 7 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 235 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1101 | 1671823 | 8 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 11.3C | H | 7.67 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1347 | 1671988 | 9 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133360
Sample ID: 424741003

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|------------------|----|-------|----|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | Analyst Comments | | | | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:300.0 | | | | | | | | | | | |
| 3 | EPA:350.1 | | | | | | | | | | | |
| 4 | EPA:353.2 | | | | | | | | | | | |
| 5 | EPA 365.4 1974 | | | | | | | | | | | |
| 6 | EPA:160.1 | | | | | | | | | | | |
| 7 | EPA:310.1 | | | | | | | | | | | |
| 8 | EPA:120.1 | | | | | | | | | | | |
| 9 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133362
Sample ID: 424741004
Matrix: W
Collect Date: 01-JUN-17 11:45
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 2.44 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0554 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1004 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.286 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1508 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545

Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAWA-17-133290
Sample ID: 424741005
Matrix: W
Collect Date: 01-JUN-17 13:37
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 1.87 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0641 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1009 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.320 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1515 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAWA-17-133318
Sample ID: 424741006
Matrix: W
Collect Date: 01-JUN-17 13:37
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | J | 0.102 | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/06/17 | 2337 | 1671680 | 1 |
| Fluoride | | 0.435 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 16.2 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Chloride | | 20.8 | 0.335 | 1.00 | mg/L | | 5 | MXL2 | 06/08/17 | 0647 | 1671680 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.0983 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1015 | 1671935 | 3 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 2.69 | 0.085 | 0.250 | mg/L | | 5 | AXH3 | 06/09/17 | 1013 | 1671832 | 4 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.101 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1325 | 1671937 | 5 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 216 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 6 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 102 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1349 | 1671987 | 7 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 397 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1101 | 1671823 | 8 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 10.9C | H | 7.39 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1348 | 1671988 | 9 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAWA-17-133318
Sample ID: 424741006

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|----|----|-------|------------------|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | | | | Analyst Comments | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:300.0 | | | | | | | | | | | |
| 3 | EPA:350.1 | | | | | | | | | | | |
| 4 | EPA:353.2 | | | | | | | | | | | |
| 5 | EPA 365.4 1974 | | | | | | | | | | | |
| 6 | EPA:160.1 | | | | | | | | | | | |
| 7 | EPA:310.1 | | | | | | | | | | | |
| 8 | EPA:120.1 | | | | | | | | | | | |
| 9 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Lc/LC: Critical Level

PF: Prep Factor

RL: Reporting Limit

SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133357
Sample ID: 424741007
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 3.28 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0728 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1010 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.268 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1516 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133358
Sample ID: 424741008
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/07/17 | 0104 | 1671680 | 1 |
| Chloride | | 7.33 | 0.067 | 0.200 | mg/L | | 1 | | | | | |
| Fluoride | | 0.103 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 7.03 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.190 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1016 | 1671935 | 2 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.0535 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1014 | 1671832 | 3 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0745 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1325 | 1671937 | 4 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 110 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 5 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 44.8 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1354 | 1671987 | 6 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 156 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1102 | 1671823 | 7 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 11.6C | H | 7.79 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1350 | 1671988 | 8 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133358
Sample ID: 424741008

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|------------------|----|-------|----|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | Analyst Comments | | | | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:350.1 | | | | | | | | | | | |
| 3 | EPA:353.2 | | | | | | | | | | | |
| 4 | EPA 365.4 1974 | | | | | | | | | | | |
| 5 | EPA:160.1 | | | | | | | | | | | |
| 6 | EPA:310.1 | | | | | | | | | | | |
| 7 | EPA:120.1 | | | | | | | | | | | |
| 8 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133359
Sample ID: 424741009
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|----------|------|----|---------|----------|------|---------|--------|
| Ion Chromatography | | | | | | | | | | | | |
| WSP-ANIONS "As Received" | | | | | | | | | | | | |
| Bromide | U | ND | 0.067 | 0.200 | mg/L | | 1 | MXL2 | 06/07/17 | 0132 | 1671680 | 1 |
| Chloride | | 7.34 | 0.067 | 0.200 | mg/L | | 1 | | | | | |
| Fluoride | | 0.106 | 0.033 | 0.100 | mg/L | | 1 | | | | | |
| Sulfate | | 6.98 | 0.133 | 0.400 | mg/L | | 1 | | | | | |
| Nutrient Analysis | | | | | | | | | | | | |
| NH3 "As Received" | | | | | | | | | | | | |
| Nitrogen, Ammonia | | 0.120 | 0.017 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1017 | 1671935 | 2 |
| NO3NO2 "As Received" | | | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | 0.0954 | 0.017 | 0.050 | mg/L | | 1 | AXH3 | 06/09/17 | 1015 | 1671832 | 3 |
| PO4 "As Received" | | | | | | | | | | | | |
| Phosphorus, Total as P | | 0.0785 | 0.020 | 0.050 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1326 | 1671937 | 4 |
| Solids Analysis | | | | | | | | | | | | |
| TDS "As Received" | | | | | | | | | | | | |
| Total Dissolved Solids | | 106 | 3.40 | 14.3 | mg/L | | | KLP1 | 06/08/17 | 1627 | 1671665 | 5 |
| Titration and Ion Analysis | | | | | | | | | | | | |
| EPA 310.1 Total Alkalinity "As Received" | | | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 45.2 | 1.45 | 4.00 | mg/L | | | RXB5 | 06/09/17 | 1356 | 1671987 | 6 |
| Carbonate alkalinity (CaCO3) | U | ND | 1.45 | 4.00 | mg/L | | | | | | | |
| EPA120.1 Specific Conductivity "As Received" | | | | | | | | | | | | |
| Conductivity | | 127 | 1.00 | 1.00 | umhos/cm | | 1 | VH1 | 06/08/17 | 1102 | 1671823 | 7 |
| PH "As Received" | | | | | | | | | | | | |
| pH at Temp 12.8C | H | 7.76 | 0.010 | 0.100 | SU | | 1 | RXB5 | 06/09/17 | 1356 | 1671988 | 8 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 350.1 Prep | EPA 350.1 Ammonia Nitrogen Prep | KLP1 | 06/08/17 | 1545 | 1671933 |
| EPA 365.4 Prep | EPA 365.4 Phosphorus, Total in liquid PR | KLP1 | 06/08/17 | 1700 | 1671936 |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133359
Sample ID: 424741009

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|----------------|--------|------------------|----|-------|----|----|---------|------|------|-------|--------|
| The following Analytical Methods were performed: | | | | | | | | | | | | |
| Method | Description | | Analyst Comments | | | | | | | | | |
| 1 | EPA:300.0 | | | | | | | | | | | |
| 2 | EPA:350.1 | | | | | | | | | | | |
| 3 | EPA:353.2 | | | | | | | | | | | |
| 4 | EPA 365.4 1974 | | | | | | | | | | | |
| 5 | EPA:160.1 | | | | | | | | | | | |
| 6 | EPA:310.1 | | | | | | | | | | | |
| 7 | EPA:120.1 | | | | | | | | | | | |
| 8 | EPA 150.1 1982 | | | | | | | | | | | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

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Certificate of Analysis

Report Date: June 22, 2017

Company : Los Alamos National Laboratory
Address : TA-03, SM271, Drop Pt. 02U, Rm111

Los Alamos, New Mexico 87545
Contact: Mr. Keith Greene
Project: LANL- WQH Water Samples

Client SDG: 2017-1644

Client Sample ID: CAPA-17-133361
Sample ID: 424741010
Matrix: W
Collect Date: 01-JUN-17 10:15
Receive Date: 06-JUN-17
Collector: Client

Project: ESHL00114
Client ID: ARSL004

| Parameter | Qualifier | Result | DL | RL | Units | PF | DF | Analyst | Date | Time | Batch | Method |
|--|-----------|--------|-------|-------|-------|------|----|---------|----------|------|---------|--------|
| Carbon Analysis | | | | | | | | | | | | |
| SW 9060 Total Organic Carbon "As Received" | | | | | | | | | | | | |
| Total Organic Carbon Average | | 3.32 | 0.330 | 1.00 | mg/L | | 1 | TSM | 06/09/17 | 0815 | 1671529 | 1 |
| Flow Injection Analysis | | | | | | | | | | | | |
| WSP-CN(T) "As Received" | | | | | | | | | | | | |
| Cyanide, Total | U | ND | 1.67 | 5.00 | ug/L | 1.00 | 1 | AXH3 | 06/07/17 | 1011 | 1671534 | 2 |
| Nutrient Analysis | | | | | | | | | | | | |
| TKN "As Received" | | | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.263 | 0.033 | 0.100 | mg/L | 1.00 | 1 | KLP1 | 06/09/17 | 1517 | 1671942 | 3 |

The following Prep Methods were performed:

| Method | Description | Analyst | Date | Time | Prep Batch |
|----------------|--|---------|----------|------|------------|
| EPA 335.4 | EPA 335.4 Total Cyanide | AXH3 | 06/07/17 | 0842 | 1671533 |
| EPA 351.2 Prep | EPA 351.2 Total Kjeldahl Nitrogen Prep | KLP1 | 06/08/17 | 1700 | 1671941 |

The following Analytical Methods were performed:

| Method | Description | Analyst Comments |
|--------|----------------|------------------|
| 1 | SW-846:9060 | |
| 2 | EPA 335.4 1993 | |
| 3 | EPA:351.2 | |

Notes:

Column headers are defined as follows:

| | |
|---------------------------------------|--------------------------------|
| DF: Dilution Factor | Lc/LC: Critical Level |
| DL: Detection Limit | PF: Prep Factor |
| MDA: Minimum Detectable Activity | RL: Reporting Limit |
| MDC: Minimum Detectable Concentration | SQL: Sample Quantitation Limit |

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: June 22, 2017

Page 1 of 7

Los Alamos National Laboratory
TA-03, SM271, Drop Pt. 02U, Rm111
Los Alamos, New Mexico

Contact: Mr. Keith Greene

Workorder: 424741

| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|--------------------------------|-----------|--------|-------|----|-------|------|--------|------------|-------|----------|-------|
| Carbon Analysis | | | | | | | | | | | |
| Batch | 1670679 | | | | | | | | | | |
| QC1203803830 | 424596007 | DUP | | | | | | | | | |
| Total Organic Carbon Average | | U | ND | U | ND | mg/L | N/A | | TSM | 06/10/17 | 04:09 |
| QC1203803828 | LCS | | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | | | | 10.4 | mg/L | 104 | (80%-120%) | | 06/09/17 | 17:24 |
| QC1203803827 | MB | | | | | | | | | | |
| Total Organic Carbon Average | | | U | ND | mg/L | | | | | 06/09/17 | 17:12 |
| QC1203803832 | 424596007 | PS | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | U | ND | | 10.7 | mg/L | 106 | (75%-125%) | | 06/10/17 | 04:56 |
| Batch | 1671529 | | | | | | | | | | |
| QC1203805984 | 424739002 | DUP | | | | | | | | | |
| Total Organic Carbon Average | | J | 0.455 | J | 0.416 | mg/L | 8.96 ^ | (+/-1.00) | TSM | 06/09/17 | 03:57 |
| QC1203805982 | LCS | | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | | | | 10.6 | mg/L | 106 | (80%-120%) | | 06/09/17 | 00:26 |
| QC1203805981 | MB | | | | | | | | | | |
| Total Organic Carbon Average | | | U | ND | mg/L | | | | | 06/09/17 | 00:15 |
| QC1203805986 | 424739002 | PS | | | | | | | | | |
| Total Organic Carbon Average | 10.0 | J | 0.455 | | 11.6 | mg/L | 111 | (75%-125%) | | 06/09/17 | 04:44 |
| Flow Injection Analysis | | | | | | | | | | | |
| Batch | 1671534 | | | | | | | | | | |
| QC1203805010 | 424739002 | DUP | | | | | | | | | |
| Cyanide, Total | | U | ND | U | ND | ug/L | N/A | | AXH3 | 06/07/17 | 10:01 |

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|--------------------------------|-----------|--------|-------|------|-------|------|--------|------------|-------|----------|-------|
| Flow Injection Analysis | | | | | | | | | | | |
| Batch | 1671534 | | | | | | | | | | |
| QC1203805009 | LCS | | | | | | | | | | |
| Cyanide, Total | 50.0 | | | 51.6 | ug/L | | 103 | (90%-110%) | AXH3 | 06/07/17 | 09:48 |
| QC1203805008 | MB | | | | | | | | | | |
| Cyanide, Total | | | U | ND | ug/L | | | | | 06/07/17 | 09:47 |
| QC1203805012 | 424739002 | MS | | | | | | | | | |
| Cyanide, Total | 100 | U | ND | 106 | ug/L | | 106 | (90%-110%) | | 06/07/17 | 10:02 |
| Ion Chromatography | | | | | | | | | | | |
| Batch | 1671680 | | | | | | | | | | |
| QC1203805355 | 424735002 | DUP | | | | | | | | | |
| Bromide | | U | ND | U | ND | mg/L | N/A | | MXL2 | 06/06/17 | 20:43 |
| Chloride | | | 15.2 | | 15.2 | mg/L | 0.0289 | (0%-20%) | | 06/08/17 | 04:23 |
| Fluoride | | | 0.161 | | 0.160 | mg/L | 1.06 ^ | (+/-0.100) | | 06/06/17 | 20:43 |
| Sulfate | | | 7.13 | | 6.96 | mg/L | 2.31 | (0%-20%) | | | |
| QC1203805354 | LCS | | | | | | | | | | |
| Bromide | 1.25 | | | 1.23 | mg/L | | 98.5 | (80%-120%) | | 06/06/17 | 19:45 |
| Chloride | 5.00 | | | 4.61 | mg/L | | 92.3 | (80%-120%) | | | |
| Fluoride | 2.50 | | | 2.37 | mg/L | | 94.9 | (80%-120%) | | | |
| Sulfate | 10.0 | | | 9.58 | mg/L | | 95.8 | (80%-120%) | | | |
| QC1203805353 | MB | | | | | | | | | | |
| Bromide | | | U | ND | mg/L | | | | | 06/06/17 | 19:17 |
| Chloride | | | U | ND | mg/L | | | | | | |

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|---------------------------|-----------|--------|--------|------|--------|------|-------|------------|------------|----------|----------------|
| Ion Chromatography | | | | | | | | | | | |
| Batch | 1671680 | | | | | | | | | | |
| Fluoride | | | U | ND | mg/L | | | | MXL2 | 06/06/17 | 19:17 |
| Sulfate | | | U | ND | mg/L | | | | | | |
| QC1203805356 | 424735002 | PS | | | | | | | | | |
| Bromide | 1.25 | U | ND | 1.23 | mg/L | | 98.8 | (75%-125%) | | 06/06/17 | 21:12 |
| Chloride | 5.00 | | 7.60 | 13.1 | mg/L | | 111 | (75%-125%) | | 06/08/17 | 04:52 |
| Fluoride | 2.50 | | 0.161 | 2.50 | mg/L | | 93.4 | (75%-125%) | | 06/06/17 | 21:12 |
| Sulfate | 10.0 | | 7.13 | 17.2 | mg/L | | 101 | (75%-125%) | | | |
| Nutrient Analysis | | | | | | | | | | | |
| Batch | 1671832 | | | | | | | | | | |
| QC1203805866 | 424735002 | DUP | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | J | 0.0222 | J | 0.0219 | mg/L | 1.36 | ^ | (+/-0.050) | AXH3 | 06/09/17 10:00 |
| QC1203805867 | 424853003 | DUP | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | | 1.12 | | 1.11 | mg/L | 0.897 | | (0%-20%) | | 06/09/17 10:28 |
| QC1203805864 | LCS | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | 1.00 | | | | 0.997 | mg/L | 99.7 | | (90%-110%) | | 06/09/17 09:52 |
| QC1203805863 | MB | | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | | | U | | ND | mg/L | | | | | 06/09/17 09:51 |
| QC1203805871 | 424735002 | PS | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | 1.00 | J | 0.0222 | | 1.02 | mg/L | 99.8 | | (90%-110%) | | 06/09/17 10:01 |
| QC1203805872 | 424853003 | PS | | | | | | | | | |
| Nitrogen, Nitrate/Nitrite | 1.00 | | 1.12 | | 2.04 | mg/L | 92 | | (90%-110%) | | 06/09/17 10:29 |

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|--------------------------|-----------|--------|------|--------|-------|------|------|------------|------------|----------|----------------|
| Nutrient Analysis | | | | | | | | | | | |
| Batch | 1671935 | | | | | | | | | | |
| QC1203806103 | 424741001 | DUP | | | | | | | | | |
| Nitrogen, Ammonia | | 0.0858 | | 0.0733 | mg/L | 15.7 | ^ | (+/-0.050) | KLP1 | 06/09/17 | 10:13 |
| QC1203806102 | LCS | | | | | | | | | | |
| Nitrogen, Ammonia | 1.00 | | | 1.01 | mg/L | | | 101 | (90%-110%) | | 06/09/17 10:02 |
| QC1203806101 | MB | | | | | | | | | | |
| Nitrogen, Ammonia | | | J | 0.0385 | mg/L | | | | | | 06/09/17 10:01 |
| QC1203806104 | 424741001 | MS | | | | | | | | | |
| Nitrogen, Ammonia | 1.00 | 0.0858 | | 1.03 | mg/L | | | 94.4 | (90%-110%) | | 06/09/17 10:14 |
| Batch | 1671937 | | | | | | | | | | |
| QC1203806120 | 424735002 | DUP | | | | | | | | | |
| Phosphorus, Total as P | | 0.0744 | | 0.0757 | mg/L | 1.73 | ^ | (+/-0.050) | KLP1 | 06/09/17 | 13:20 |
| QC1203806113 | LCS | | | | | | | | | | |
| Phosphorus, Total as P | 1.00 | | | 0.848 | mg/L | | | 84.8 | (80%-124%) | | 06/09/17 13:07 |
| QC1203806112 | MB | | | | | | | | | | |
| Phosphorus, Total as P | | | U | ND | mg/L | | | | | | 06/09/17 13:06 |
| QC1203806121 | 424735002 | MS | | | | | | | | | |
| Phosphorus, Total as P | 1.00 | 0.0744 | | 1.03 | mg/L | | | 95.6 | (63%-139%) | | 06/09/17 13:21 |
| Batch | 1671942 | | | | | | | | | | |
| QC1203806128 | 424741002 | DUP | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | 0.336 | | 0.308 | mg/L | 8.7 | ^ | (+/-0.100) | KLP1 | 06/09/17 | 15:06 |
| QC1203806127 | LCS | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | 1.00 | | | 0.953 | mg/L | | | 95.3 | (90%-110%) | | 06/09/17 15:14 |
| QC1203806126 | MB | | | | | | | | | | |
| Nitrogen, Total Kjeldahl | | | J | 0.0715 | mg/L | | | | | | 06/09/17 15:13 |

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|-----------------------------------|-----------|--------|------|------|----------|-------|------|------------|-------|----------|-------|
| Nutrient Analysis | | | | | | | | | | | |
| Batch | 1671942 | | | | | | | | | | |
| QC1203806129 | 424741002 | MS | | | | | | | | | |
| Nitrogen, Total Kjeldahl | 1.00 | 0.336 | | 1.35 | mg/L | | 101 | (90%-110%) | KLP1 | 06/09/17 | 15:07 |
| Solids Analysis | | | | | | | | | | | |
| Batch | 1671665 | | | | | | | | | | |
| QC1203805324 | 424739001 | DUP | | | | | | | | | |
| Total Dissolved Solids | | 149 | | 130 | mg/L | 13.3* | | (0%-5%) | KLP1 | 06/08/17 | 16:27 |
| QC1203805323 | LCS | | | | | | | | | | |
| Total Dissolved Solids | 300 | | | 297 | mg/L | | 99 | (95%-105%) | | 06/08/17 | 16:27 |
| QC1203805322 | MB | | | | | | | | | | |
| Total Dissolved Solids | | | U | ND | mg/L | | | | | 06/08/17 | 16:27 |
| Titration and Ion Analysis | | | | | | | | | | | |
| Batch | 1671823 | | | | | | | | | | |
| QC1203805835 | 424596002 | DUP | | | | | | | | | |
| Conductivity | | 236 | | 233 | umhos/cm | 1.28 | | (0%-10%) | VH1 | 06/08/17 | 10:57 |
| QC1203805836 | 424747001 | DUP | | | | | | | | | |
| Conductivity | | 157 | | 156 | umhos/cm | 0.639 | | (0%-10%) | | 06/08/17 | 11:04 |
| QC1203805834 | LCS | | | | | | | | | | |
| Conductivity | 1410 | | | 1400 | umhos/cm | | 99.2 | (95%-105%) | | 06/08/17 | 10:45 |
| Batch | 1671987 | | | | | | | | | | |
| QC1203806285 | 424747001 | DUP | | | | | | | | | |
| Alkalinity, Total as CaCO3 | | 58.6 | | 59.0 | mg/L | 0.68 | | (0%-20%) | RXB5 | 06/09/17 | 13:58 |
| Carbonate alkalinity (CaCO3) | U | ND | U | ND | mg/L | N/A | | | | | |
| QC1203806283 | LCS | | | | | | | | | | |
| Alkalinity, Total as CaCO3 | 100 | | | 108 | mg/L | | 108 | (90%-110%) | | 06/09/17 | 13:09 |

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|-----------------------------------|-----------|--------|------|------|-------|-------|------|------------|-------|----------|-------|
| Titration and Ion Analysis | | | | | | | | | | | |
| Batch | 1671987 | | | | | | | | | | |
| QC1203806287 | 424747001 | MS | | | | | | | | | |
| Alkalinity, Total as CaCO3 | 100 | 58.6 | | 165 | mg/L | | 107 | (80%-120%) | RXB5 | 06/09/17 | 13:59 |
| | | | | | | | | | | | |
| Batch | 1671988 | | | | | | | | | | |
| QC1203806296 | 424596002 | DUP | | | | | | | | | |
| pH | H | 7.26 | H | 7.27 | SU | 0.138 | | (0%-5%) | RXB5 | 06/09/17 | 13:23 |
| | | | | | | | | | | | |
| QC1203806295 | LCS | | | | | | | | | | |
| pH | 7.00 | | | 7.01 | SU | | 100 | (99%-101%) | | 06/09/17 | 13:08 |

Notes:

- < Result is less than value reported
- > Result is greater than value reported
- B The target analyte was detected in the associated blank.
- E General Chemistry--Concentration of the target analyte exceeds the instrument calibration range
- H Analytical holding time was exceeded
- J Value is estimated
- N/A RPD or %Recovery limits do not apply.
- N1 See case narrative
- ND Analyte concentration is not detected above the detection limit
- NJ Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Q One or more quality control criteria have not been met. Refer to the applicable narrative or DER.
- R Per section 9.3.4.1 of Method 1664 Revision B, due to matrix spike recovery issues, this result may not be reported or used for regulatory compliance purposes.
- R Sample results are rejected
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Paint Filter Test--Particulates passed through the filter, however no free liquids were observed.
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- d 5-day BOD--The 2:1 depletion requirement was not met for this sample
- e 5-day BOD--Test replicates show more than 30% difference between high and low values. The data is qualified per the method and can be used for reporting purposes
- h Preparation or preservation holding time was exceeded

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QC Summary

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| Parmname | NOM | Sample | Qual | QC | Units | RPD% | REC% | Range | Anlst | Date | Time |
|----------|-----|--------|------|----|-------|------|------|-------|-------|------|------|
|----------|-----|--------|------|----|-------|------|------|-------|-------|------|------|

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

DATA EXCEPTION REPORT

| | | | |
|---|-------------------------------------|--|-----------------------------|
| Mo.Day Yr. 09-JUN-17 | Division: Industrial | Quality Criteria: Specifications | Type: Process |
| Instrument Type: BALANCE ANALYTICAL | Test / Method: EPA 160.1 | Matrix Type: Liquid | Client Code: ESHL |
| Batch ID: 1671665 | Sample Numbers: See Below | | |
| Potentially affected work order(s)(SDG): 424739(2017-1645),424741(2017-1644) Application Issues: Failed RPD for DUP | | | |
| Specification and Requirements Exception Description: | | DER Disposition: | |
| 1. Failed RPD for DUP: QC 1203805324DUP | | 1. The Relative Percent Difference (RPD) between the sample and duplicate falls outside of the established acceptance limits because of the heterogeneous matrix of the sample: Total Dissolved Solids 1203805324 (CAPA-17133354DUP) [13.3* (0%-5%)]. | |

Originator's Name:

Kristen Mizzell 09-JUN-17

Data Validator/Group Leader:

Aubrey Kingsbury 12-JUN-17

DATA EXCEPTION REPORT

| | | | |
|---|---|---|-----------------------------------|
| Mo.Day Yr. 10-JUN-17 | Division: Industrial | Quality Criteria: Specifications | Type: Process |
| Instrument Type: ELECTRODE | Test / Method: EPA 150.1, SW846 9040C | Matrix Type: Liquid | Client Code: ESHL, GELC |
| Batch ID: 1671988 | Sample Numbers: See Below | | |
| Potentially affected work order(s)(SDG): 424296,424297,424596(2017-1633),424735(2017-1647),424739(2017-1645),424741(2017-1644),424747(2017-1649) Application Issues: Sample received out of holding Sample Logged out of Holding | | | |
| Specification and Requirements Exception Description: | | DER Disposition: | |
| 1. Sample Logged out of Holding: 424296 001 2. Sample received out of holding: 424297 001 424596 002,003,007,010 424735 002,004 424739 001 424741 001,003,006,008,009 424747 001 QC 1203806296DUP,1203806297DUP | | 1. Sample (See Below) was logged in for this analysis outside of the method specified holding time. The data is qualified. 424296001 (Rad Pyridine 7647) [Logged 30-MAY-17, out of holding 30-MAY-17]. 2. Samples (See Below) were received by the laboratory outside of the method specified holding time. The data is qualified. 1203806296 (CAWA-17-133306DUP) [Received 02-JUN-17, out of holding 31-MAY-17]. 1203806297 (CAWA-17-13332DUP) [Received 06-JUN-17, out of holding 02-JUN-17]. 424297001 (Non-Rad Pyridine 7856) [Received 30-MAY-17, out of holding 30-MAY-17]. 424596002 (CAWA-17-133306) [Received 02-JUN-17, out of holding 31-MAY-17]. 424596003 (CAWA-17-133334) [Received 02-JUN-17, out of holding 31-MAY-17]. 424596007 (CAWA-17-134191) [Received 02-JUN-17, out of holding 31-MAY-17]. 424596010 (CAWA-17-133316) [Received 02-JUN-17, out of holding 31-MAY-17]. 424735002 (CAWA-17-134176) [Received 06-JUN-17, out of holding 02-JUN-17]. 424735004 (CAWA-17-133309) [Received 06-JUN-17, out of holding 02-JUN-17]. 424739001 (CAPA-17133354) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741001 (CAPA-17-133353) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741003 (CAPA-17-133360) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741006 (CAWA-17-133318) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741008 (CAPA-17-133358) [Received 06-JUN-17, out of holding 01-JUN-17]. 424741009 (CAPA-17-133359) [Received 06-JUN-17, out of holding 01-JUN-17]. 424747001 (CAWA-17-133332) [Received 06-JUN-17, out of holding 02-JUN-17]. | |

Originator's Name:

Rachael Bell 10-JUN-17

Data Validator/Group Leader:

Elzbieta Szulc 12-JUN-17

Originator's Name:

Rachael Bell 10-JUN-17

Data Validator/Group Leader:

Elzbieta Szulc 12-JUN-17