

**metals**  
**- 5a -**  
**MATRIX SPIKE SUMMARY**

**client:** JACOBS Engineering Group, Inc.      **level:** low      **sdg no.:** P3440

**contract:** JACO05      **lab code:** CHEM      **case no.:** P3440      **sas no.:** P3440

**matrix:** Water      **sample id:** P3440-01      **client id:** 923-K1-WS-080124MS

**Percent Solids for Sample:** NA      **Spiked ID:** P3440-02      **Percent Solids for Spike Sample:** NA

| Analyte   | Units | Acceptance<br>Limit %R | Spiked<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|-----------|-------|------------------------|------------------|---|------------------|---|----------------|---------------|------|----|
| Aluminum  | ug/L  | 75 - 125               | 9730             |   | 62.5             |   | 10000          | 97            |      | P  |
| Antimony  | ug/L  | 75 - 125               | 519              |   | 2.00             | U | 500            | 104           |      | P  |
| Arsenic   | ug/L  | 75 - 125               | 539              |   | 0.79             | J | 500            | 108           |      | P  |
| Barium    | ug/L  | 75 - 125               | 2470             |   | 64.4             |   | 2500           | 96            |      | P  |
| Beryllium | ug/L  | 75 - 125               | 565              |   | 1.00             | U | 500            | 113           |      | P  |
| Cadmium   | ug/L  | 75 - 125               | 537              |   | 1.00             | U | 500            | 107           |      | P  |
| Calcium   | ug/L  | 75 - 125               | 71200            |   | 22300            |   | 50000          | 98            |      | P  |
| Chromium  | ug/L  | 75 - 125               | 514              |   | 2.00             | U | 500            | 103           |      | P  |
| Cobalt    | ug/L  | 75 - 125               | 531              |   | 0.62             | J | 500            | 106           |      | P  |
| Copper    | ug/L  | 75 - 125               | 4950             |   | 0.83             | J | 5000           | 99            |      | P  |
| Iron      | ug/L  | 75 - 125               | 29100            |   | 3220             |   | 25000          | 103           |      | P  |
| Lead      | ug/L  | 75 - 125               | 2490             |   | 0.52             | J | 2500           | 100           |      | P  |
| Magnesium | ug/L  | 75 - 125               | 53900            |   | 4260             |   | 50000          | 99            |      | P  |
| Manganese | ug/L  | 75 - 125               | 5740             |   | 859              |   | 5000           | 98            |      | P  |
| Nickel    | ug/L  | 75 - 125               | 510              |   | 0.65             | J | 500            | 102           |      | P  |
| Mercury   | ug/L  | 75 - 125               | 3.28             |   | 0.20             | U | 4.0            | 82            |      | CV |
| Potassium | ug/L  | 75 - 125               | 28500            |   | 3940             |   | 25000          | 98            |      | P  |
| Selenium  | ug/L  | 75 - 125               | 543              |   | 5.00             | U | 500            | 109           |      | P  |
| Silver    | ug/L  | 75 - 125               | 336              |   | 1.00             | U | 500            | 67            | N    | P  |
| Sodium    | ug/L  | 75 - 125               | 144000           |   | 96900            |   | 50000          | 95            |      | P  |
| Thallium  | ug/L  | 75 - 125               | 521              |   | 1.00             | U | 500            | 104           |      | P  |
| Vanadium  | ug/L  | 75 - 125               | 539              |   | 0.53             | J | 500            | 108           |      | P  |
| Zinc      | ug/L  | 75 - 125               | 5050             |   | 3.92             | J | 5000           | 101           |      | P  |

**metals**  
**- 5a -**  
**MATRIX SPIKE DUPLICATE SUMMARY**

**client:** JACOBS Engineering Group, Inc. **level:** low **sdg no.:** P3440  
**contract:** JACO05 **lab code:** CHEM **case no.:** P3440 **sas no.:** P3440  
**matrix:** Water **sample id:** P3440-01 **client id:** 923-K1-WS-080124MSD  
**Percent Solids for Sample:** NA **Spiked ID:** P3440-03 **Percent Solids for Spike Sample:** NA

| Analyte   | Units | Acceptance<br>Limit %R | MSD<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|-----------|-------|------------------------|---------------|---|------------------|---|----------------|---------------|------|----|
| Aluminum  | ug/L  | 75 - 125               | 9820          |   | 62.5             |   | 10000          | 98            |      | P  |
| Antimony  | ug/L  | 75 - 125               | 528           |   | 2.00             | U | 500            | 106           |      | P  |
| Arsenic   | ug/L  | 75 - 125               | 539           |   | 0.79             | J | 500            | 108           |      | P  |
| Barium    | ug/L  | 75 - 125               | 2450          |   | 64.4             |   | 2500           | 95            |      | P  |
| Beryllium | ug/L  | 75 - 125               | 571           |   | 1.00             | U | 500            | 114           |      | P  |
| Cadmium   | ug/L  | 75 - 125               | 540           |   | 1.00             | U | 500            | 108           |      | P  |
| Calcium   | ug/L  | 75 - 125               | 72100         |   | 22300            |   | 50000          | 100           |      | P  |
| Chromium  | ug/L  | 75 - 125               | 522           |   | 2.00             | U | 500            | 104           |      | P  |
| Cobalt    | ug/L  | 75 - 125               | 540           |   | 0.62             | J | 500            | 108           |      | P  |
| Copper    | ug/L  | 75 - 125               | 5030          |   | 0.83             | J | 5000           | 101           |      | P  |
| Iron      | ug/L  | 75 - 125               | 29900         |   | 3220             |   | 25000          | 107           |      | P  |
| Lead      | ug/L  | 75 - 125               | 2510          |   | 0.52             | J | 2500           | 100           |      | P  |
| Magnesium | ug/L  | 75 - 125               | 54400         |   | 4260             |   | 50000          | 100           |      | P  |
| Manganese | ug/L  | 75 - 125               | 5790          |   | 859              |   | 5000           | 99            |      | P  |
| Nickel    | ug/L  | 75 - 125               | 522           |   | 0.65             | J | 500            | 104           |      | P  |
| Mercury   | ug/L  | 75 - 125               | 3.17          |   | 0.20             | U | 4.0            | 79            |      | CV |
| Potassium | ug/L  | 75 - 125               | 28900         |   | 3940             |   | 25000          | 100           |      | P  |
| Selenium  | ug/L  | 75 - 125               | 537           |   | 5.00             | U | 500            | 107           |      | P  |
| Silver    | ug/L  | 75 - 125               | 342           |   | 1.00             | U | 500            | 68            | N    | P  |
| Sodium    | ug/L  | 75 - 125               | 148000        |   | 96900            |   | 50000          | 102           |      | P  |
| Thallium  | ug/L  | 75 - 125               | 532           |   | 1.00             | U | 500            | 106           |      | P  |
| Vanadium  | ug/L  | 75 - 125               | 547           |   | 0.53             | J | 500            | 109           |      | P  |
| Zinc      | ug/L  | 75 - 125               | 5150          |   | 3.92             | J | 5000           | 103           |      | P  |