

**metals**  
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**MATRIX SPIKE SUMMARY**

**client:** CDM Smith **level:** low **sdg no.:** Q2436  
**contract:** CAMP02 **lab code:** CHEM **case no.:** Q2436 **sas no.:** Q2436  
**matrix:** Solid **sample id:** Q2436-10 **client id:** TP-82MS  
**Percent Solids for Sample:** 92 **Spiked ID:** Q2436-10MS **Percent Solids for Spike Sample:** 92

| Analyte   | Units | Acceptance<br>Limit %R | Spiked<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M |
|-----------|-------|------------------------|------------------|---|------------------|---|----------------|---------------|------|---|
| Aluminum  | mg/Kg | 75 - 125               | 1640             |   | 1050             |   | 100            | 591           |      | P |
| Antimony  | mg/Kg | 75 - 125               | 25.1             |   | 2.52             | U | 40.4           | 62            | N    | P |
| Arsenic   | mg/Kg | 75 - 125               | 36.5             |   | 1.03             |   | 40.4           | 88            |      | P |
| Barium    | mg/Kg | 75 - 125               | 19.8             |   | 8.54             |   | 10.1           | 111           |      | P |
| Beryllium | mg/Kg | 75 - 125               | 8.33             |   | 0.20             | J | 10.1           | 81            |      | P |
| Cadmium   | mg/Kg | 75 - 125               | 8.84             |   | 0.30             | U | 10.1           | 88            |      | P |
| Calcium   | mg/Kg | 75 - 125               | 173              |   | 174              |   | 50.6           | -2            | N    | P |
| Chromium  | mg/Kg | 75 - 125               | 20.3             |   | 3.04             |   | 20.2           | 85            |      | P |
| Cobalt    | mg/Kg | 75 - 125               | 10.9             |   | 1.28             | J | 10.1           | 95            |      | P |
| Copper    | mg/Kg | 75 - 125               | 14.5             |   | 0.86             | J | 15.2           | 90            |      | P |
| Iron      | mg/Kg | 75 - 125               | 6950             |   | 7140             |   | 150            | -124          |      | P |
| Lead      | mg/Kg | 75 - 125               | 50.1             |   | 3.84             |   | 50.6           | 91            |      | P |
| Magnesium | mg/Kg | 75 - 125               | 133              |   | 83.6             | J | 100            | 49            | N    | P |
| Manganese | mg/Kg | 75 - 125               | 28.8             |   | 19.7             |   | 10.1           | 90            |      | P |
| Nickel    | mg/Kg | 75 - 125               | 25.1             |   | 1.05             | J | 25.3           | 95            |      | P |
| Potassium | mg/Kg | 75 - 125               | 501              |   | 45.1             | J | 510            | 89            |      | P |
| Selenium  | mg/Kg | 75 - 125               | 90.4             |   | 1.72             |   | 100            | 89            |      | P |
| Silver    | mg/Kg | 75 - 125               | 3.63             |   | 0.38             | J | 3.8            | 85            |      | P |
| Sodium    | mg/Kg | 75 - 125               | 346              |   | 171              |   | 150            | 116           |      | P |
| Thallium  | mg/Kg | 75 - 125               | 93.4             |   | 2.01             | U | 100            | 93            |      | P |
| Vanadium  | mg/Kg | 75 - 125               | 21.7             |   | 9.07             |   | 15.2           | 83            |      | P |
| Zinc      | mg/Kg | 75 - 125               | 16.4             |   | 6.28             |   | 10.1           | 100           |      | P |

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**MATRIX SPIKE DUPLICATE SUMMARY**

**client:** CDM Smith **level:** low **sdg no.:** Q2436  
**contract:** CAMP02 **lab code:** CHEM **case no.:** Q2436 **sas no.:** Q2436  
**matrix:** Solid **sample id:** Q2436-10 **client id:** TP-82MSD  
**Percent Solids for Sample:** 92 **Spiked ID:** Q2436-10MSD **Percent Solids for Spike Sample:** 92

| Analyte   | Units | Acceptance<br>Limit %R | MSD<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M |
|-----------|-------|------------------------|---------------|---|------------------|---|----------------|---------------|------|---|
| Aluminum  | mg/Kg | 75 - 125               | 1810          |   | 1050             |   | 96.2           | 796           |      | P |
| Antimony  | mg/Kg | 75 - 125               | 23.1          |   | 2.52             | U | 38.5           | 60            | N    | P |
| Arsenic   | mg/Kg | 75 - 125               | 36.5          |   | 1.03             |   | 38.5           | 92            |      | P |
| Barium    | mg/Kg | 75 - 125               | 22.1          |   | 8.54             |   | 9.6            | 141           | N    | P |
| Beryllium | mg/Kg | 75 - 125               | 8.13          |   | 0.20             | J | 9.6            | 83            |      | P |
| Cadmium   | mg/Kg | 75 - 125               | 8.76          |   | 0.30             | U | 9.6            | 91            |      | P |
| Calcium   | mg/Kg | 75 - 125               | 198           |   | 174              |   | 48.1           | 50            | N    | P |
| Chromium  | mg/Kg | 75 - 125               | 20.5          |   | 3.04             |   | 19.2           | 91            |      | P |
| Cobalt    | mg/Kg | 75 - 125               | 12.1          |   | 1.28             | J | 9.6            | 112           |      | P |
| Copper    | mg/Kg | 75 - 125               | 14.8          |   | 0.86             | J | 14.4           | 97            |      | P |
| Iron      | mg/Kg | 75 - 125               | 7690          |   | 7140             |   | 140            | 396           |      | P |
| Lead      | mg/Kg | 75 - 125               | 50.3          |   | 3.84             |   | 48.1           | 97            |      | P |
| Magnesium | mg/Kg | 75 - 125               | 143           |   | 83.6             | J | 96.2           | 61            | N    | P |
| Manganese | mg/Kg | 75 - 125               | 46.6          |   | 19.7             |   | 9.6            | 280           | N    | P |
| Nickel    | mg/Kg | 75 - 125               | 25.1          |   | 1.05             | J | 24.0           | 100           |      | P |
| Potassium | mg/Kg | 75 - 125               | 506           |   | 45.1             | J | 480            | 96            |      | P |
| Selenium  | mg/Kg | 75 - 125               | 89.7          |   | 1.72             |   | 96.2           | 91            |      | P |
| Silver    | mg/Kg | 75 - 125               | 3.69          |   | 0.38             | J | 3.6            | 92            |      | P |
| Sodium    | mg/Kg | 75 - 125               | 334           |   | 171              |   | 140            | 117           |      | P |
| Thallium  | mg/Kg | 75 - 125               | 91.1          |   | 2.01             | U | 96.2           | 95            |      | P |
| Vanadium  | mg/Kg | 75 - 125               | 24.5          |   | 9.07             |   | 14.4           | 107           |      | P |
| Zinc      | mg/Kg | 75 - 125               | 17.8          |   | 6.28             |   | 9.6            | 120           |      | P |

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**MATRIX SPIKE SUMMARY**

**client:** CDM Smith **level:** low **sdg no.:** Q2436  
**contract:** CAMP02 **lab code:** CHEM **case no.:** Q2436 **sas no.:** Q2436  
**matrix:** Solid **sample id:** Q2452-05 **client id:** EP-2MS  
**Percent Solids for Sample:** 87 **Spiked ID:** Q2452-05MS **Percent Solids for Spike Sample:** 87

| Analyte | Units | Acceptance<br>Limit %R | Spiked<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|---------|-------|------------------------|------------------|---|------------------|---|----------------|---------------|------|----|
| Mercury | mg/Kg | 80 - 120               | 0.29             |   | 0.017            |   | 0.28           | 96            |      | CV |

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**MATRIX SPIKE DUPLICATE SUMMARY**

|                                   |                  |                   |                    |                                         |                |                              |
|-----------------------------------|------------------|-------------------|--------------------|-----------------------------------------|----------------|------------------------------|
| <b>client:</b>                    | <u>CDM Smith</u> | <b>level:</b>     | <u>low</u>         | <b>sdg no.:</b>                         | <u>Q2436</u>   |                              |
| <b>contract:</b>                  | <u>CAMP02</u>    | <b>lab code:</b>  | <u>CHEM</u>        | <b>case no.:</b>                        | <u>Q2436</u>   | <b>sas no.:</b> <u>Q2436</u> |
| <b>matrix:</b>                    | <u>Solid</u>     | <b>sample id:</b> | <u>Q2452-05</u>    | <b>client id:</b>                       | <u>EP-2MSD</u> |                              |
| <b>Percent Solids for Sample:</b> | <u>87</u>        | <b>Spiked ID:</b> | <u>Q2452-05MSD</u> | <b>Percent Solids for Spike Sample:</b> | <u>87</u>      |                              |

| Analyte | Units | Acceptance<br>Limit %R | MSD<br>Result | C | Sample<br>Result | C | Spike<br>Added | %<br>Recovery | Qual | M  |
|---------|-------|------------------------|---------------|---|------------------|---|----------------|---------------|------|----|
| Mercury | mg/Kg | 80 - 120               | 0.33          |   | 0.017            |   | 0.31           | 102           |      | CV |