



September 25, 2013

Transmitted via Mail

Ms. Kourtney Drake
Administrator
UPPER SANTA MARGARITA IRRIGATED LANDS GROUP
P.O. Box 892411
Temecula, CA 92589

RE: USMILG, QAPP Monitoring Summary for October 2012 – August 2013

Dear Kourtney,

The following is an accumulated summary of the monitoring results to date for October 2012 - August 2013 of the 2012-2013 monitoring year:

Wet Season Sampling: Event 1 (12/13/12)

Storm Start: 12/12/2012 at 6:00pm

Storm End: 12/13/12 at 3:30pm

Sampling Start: 12/13/2012 at 4:00pm

Rain Fall Readings: Based on local rainfall summaries, sampling at SG02 occurred after approximately 0.81 inch of rain, and sampling at UK03 occurred after approx. 1.1 inches of rain.

Monitoring Locations

| <u>Description</u> | <u>Location</u> | <u>Site ID</u> |
|---|-----------------------------------|----------------|
| Santa Gertrudis Creek at Rancho California Road | 33 °32'49.48" N, 117 °02'38.28" W | SG02 |
| Unknown Creek at El Prado Drive | 33 °27'52.18" N, 117 °14'26.60" W | UK03 |

Wet Season Sampling: Event 2 (02/20/13)

Storm Start: 02/19/2013 at 1:49am

Storm End: 02/20/13 at 1:49am

Sampling Start: 02/20/2013 at 8:39am

Rain Fall Readings: Based on local rainfall summaries, sampling at UK03 occurred after approximately 0.70 inches of rain.

Sampling at SG02 was a "no go" because the rainfall did not produce a visually detectable increase in creek flows above base flow.

Monitoring Locations

| <u>Description</u> | <u>Location</u> | <u>Site ID</u> |
|---------------------------------|-----------------------------------|----------------|
| Unknown Creek at El Prado Drive | 33 °27'52.18" N, 117 °14'26.60" W | UK03 |

Dry Season Sampling: Event 1 (08/27/13)

Sampling Start: 08/27/2013 at 4:00pm

Rain Fall Readings: Based on local rainfall summaries, sampling at UK03 occurred after approx. 0.00 inches of rain in the last 7 days.

Dry season sampling at SG02 will occur during the 2013-2014 dry season based upon the updated schedule approved by the Regional Water Quality Control Board to alternate which site is monitored for dry weather sampling each year.

Monitoring Locations

| <u>Description</u> | <u>Location</u> | <u>Site ID</u> |
|------------------------------------|-----------------------------------|----------------|
| Unknown Creek at El Prado Drive | 33 °27'52.18" N, 117 °14'26.60" W | UK03 |

Bioassessment Monitoring: Event 1 (08/27/13)

Sampling Start: 08/27/2013 at 10:00am

Rain Fall Readings: Based on local rainfall summaries, bioassessment monitoring at UK03 occurred after approx. 0.00 inches of rain in the last 7 days.

The Bioassessment monitoring field work has taken place and is complete. However, the analysis of the samples taken during the Bioassessment is underway and results will be reported as soon as they are available.

Bioassessment monitoring at SG02 will occur during the 2013-2014 index period based upon the updated schedule approved by the Regional Water Quality Control Board to alternate which site is monitored for bioassessment monitoring each year.

Monitoring Locations

| <u>Description</u> | <u>Location</u> | <u>Site ID</u> |
|------------------------------------|-----------------------------------|----------------|
| Unknown Creek at El Prado Drive | 33 °27'52.18" N, 117 °14'26.60" W | UK03 |

Monitoring Results

The following table summarizes the constituents analyzed and field measurements for Wet & Dry Season Sampling:

| Parameter | Reporting Limit | Wet Season Event 1 (12/13/12) | | Wet Season Event 2 (02/20/13) | Wet Season UK03 Statistics | | Dry Season Event 1 (08/27/13) |
|--|-----------------|----------------------------------|----------------|-------------------------------------|-------------------------------|-------------------|-------------------------------------|
| | | SG02 Result | UK03 Result | UK03 Result | UK03 Mean | UK03 Std. Dev. | UK03 Result |
| Alkalinity (as CaCO ₃) | 1 mg/L | 334 mg/L | 146 mg/L | 174 mg/L | 160 mg/L | 14 mg/L | 190 mg/L |
| Ammonia (as N) | 0.01 mg/L | 0.42 mg/L | 0.10 mg/L | 0.05 mg/L | 0.08 mg/L | 0.03 mg/L | 0.13 mg/L |
| Ammonium (as N) | 0.01 mg/L | 0.42 mg/L | 0.10 mg/L | 0.05 mg/L | 0.08 mg/L | 0.03 mg/L | 0.13 mg/L |
| CaCO ₃ (Hardness) | 1 mg/L | 1,240 mg/L | 650 mg/L | 582 mg/L | 616 mg/L | 34 mg/L | 620 mg/L |
| Chloride | 1 mg/L | 918 mg/L | 275 mg/L | 198 mg/L | 237 mg/L | 38.5 mg/L | 217 mg/L |
| Dissolved Organic Carbon | 0.7 mg/L | 24.5 mg/L | 9.0 mg/L | 5.0 mg/L | 7.0 mg/L | 2.0 mg/L | 45.8 mg/L |
| Nitrate as Nitrogen (NO ₃) | 0.01 mg/L | 3.04 mg/L | 5.2 mg/L | 4.46 mg/L | 4.83 mg/L | 0.37 mg/L | 4.11 mg/L |
| Nitrite as Nitrogen (NO ₂) | 0.10 mg/L | 0.20 mg/L | 0.10 mg/L | 0.10 mg/L | 0.10 mg/L | 0.00 mg/L | 0.10 mg/L |
| Nitrogen (Total) | 0.16 mg/L | 6.19 mg/L | 6.67 mg/L | 5.54 mg/L | 6.11 mg/L | 0.57 mg/L | 4.25 mg/L |
| Orthophosphate as P | 0.03 mg/L | 0.24 mg/L | 0.17 mg/L | 0.03 mg/L | 0.10 mg/L | 0.07 mg/L | 0.03 mg/L |
| Phosphorus (Dissolved)* | 0.03 mg/L | 0.24 mg/L | 0.19 mg/L | 0.03 mg/L | 0.11 mg/L | 0.08 mg/L | 0.03 mg/L |
| Phosphorus (Total) * | 0.03 mg/L | 0.26 mg/L | 0.26 mg/L | 0.07 mg/L | 0.17 mg/L | 0.10 mg/L | 0.03 mg/L |
| pH (Field) | NA | 7.87 | 8.14 | 8.20 | 8.17 | 0.03 | 8.23 |
| Specific conductivity (EC) | 0.1 µS/cm | 4,300 µS/cm | 1,930 µS/cm | 1,750 µS/cm | 1,840 µS/cm | 90 µS/cm | 1,660 µS/cm |
| Sulfate | 1.0 mg/L | 537 mg/L | 384 mg/L | 312 mg/L | 348 mg/L | 36 mg/L | 350 mg/L |
| Temperature (Field) | NA | 12.3 °C | 14.7 °C | 10.8 °C | 12.8 °C | 1.95 °C | 27.7 °C |
| TDS | 5 mg/L | 2,568 mg/L | 1,228 mg/L | 940 mg/L | 1,084 mg/L | 144 mg/L | 1148 mg/L |
| TKN (Dissolved)* | 0.50 mg/L | 2.35 mg/L | 0.86 mg/L | 0.84 mg/L | 0.84 mg/L | 0.01 mg/L | <0.50 mg/L |
| TKN (Total)* | 0.05 mg/L | 2.95 mg/L | 1.47 mg/L | 1.09 mg/L | 1.28 mg/L | 0.19 mg/L | 0.14 mg/L |
| TSS | 5 mg/L | 9 mg/L | 148 mg/L | 93 mg/L | 121 mg/L | 27.5 mg/L | 8 mg/L |
| Turbidity (Field) | 0.50 NTU | 5.1 NTU | 102.7 NTU | 77.0 NTU | 89.9 NTU | 12.9 NTU | 0.51 NTU |
| Flow Rate (Field) | N/A | 0.13 cfs | 5.12 cfs | 2.37 cfs | 3.75 cfs | 1.38 cfs | 2.37 cfs |

**Constituent analyzed as alternative to particulate constituents (SWAMP testing protocols not available for the particulate constituents at time of monitoring event)*

QA/QC Samples

Evaluation of Field Blanks (UK03) Analysis for Wet Season Event 1: The analysis yielded that the constituents were measured at concentrations lower than the laboratory reporting limits for the constituents. No anomalies identified.

Evaluation of Field Duplicates (UK03) Analysis for Wet Season Event 1: Two constituents, Ammonia and Ammonium, out of the 22 constituents, presented results which did not meet the acceptance limits for duplicates (i.e. RPD < 25%).

| <u>Constituent</u> | <u>Reporting Limit</u> | <u>UK03 (Primary) Result</u> | <u>UK03 (Duplicate) Result</u> | <u>RPD</u> |
|--------------------|------------------------|------------------------------|--------------------------------|------------|
| Ammonia (as N) | 0.01 mg/L | 0.10 mg/L | 0.06 mg/L | 50% |
| Ammonium (as N) | 0.01 mg/L | 0.10 mg/L | 0.06 mg/L | 50% |

$$RPD = (x - t)/[(x+t)/2] * 100$$

Note: There were no QA/QC Samples (Field Blanks or Duplicates) for Wet Season Event 2. Field Blanks and Duplicates were anticipated to be taken at Site ID SG02; however, the sampling at this site was determined to be a “no go” because the rainfall did not produce a visually detectable increase in creek flows above base flow.

Evaluation of Field Blanks (UK03) Analysis for Dry Season Event 1: The analysis yielded that the constituents were measured at concentrations lower than the laboratory reporting limits for the constituents. No anomalies identified.

Evaluation of Field Duplicates (UK03) Analysis for Dry Season Event 1: One constituent, Total Kjeldahl Nitrogen (TKN), out of the 22 constituents, presented results which did not meet the acceptance limits for duplicates (i.e. RPD < 25%).

| <u>Constituent</u> | <u>Reporting Limit</u> | <u>UK03 (Primary) Result</u> | <u>UK03 (Duplicate) Result</u> | <u>RPD</u> |
|--------------------|------------------------|------------------------------|--------------------------------|------------|
| TKN (Total) | 0.05 mg/L | 0.14 mg/L | 1.00 mg/L | 151% |

$$RPD = (x - t)/[(x+t)/2] * 100$$

Comparison to Water Quality Objectives for Santa Margarita River

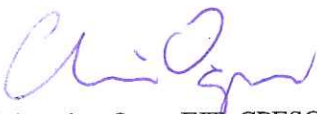
The following table summarizes the constituent results by sampling location for comparison to the corresponding Water Quality Objectives listed for the Inland Surface Waters outlined in the San Diego Basin Plan (Amended 04/04/11) Table 3-2:

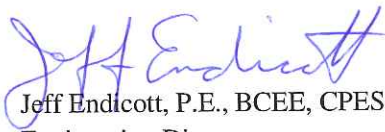
| Constituent | Wet Season Event 1 (12/13/12) | | Wet Season Event 2 (02/20/13) | Wet Season UK03 Statistics | Dry Season Event 1 (08/27/13) | WQO for HUB 902.22* |
|--------------------|-------------------------------------|----------------|-------------------------------------|----------------------------------|-------------------------------------|------------------------|
| | SG02 Result | UK03 Result | UK03 Result | UK03 Mean | UK03 Result | |
| Chloride | 918 mg/L | 275 mg/L | 198 mg/L | 237 mg/L | 217 mg/L | 250 mg/L |
| Nitrogen (Total) | 6.19 mg/L | 6.67 mg/L | 5.54 mg/L | 6.11 mg/L | 4.25 mg/L | 1.0 mg/L |
| Phosphorus (Total) | 0.26 mg/L | 0.26 mg/L | 0.07 mg/L | 0.17 mg/L | 0.03 mg/L | 0.10 mg/L |
| Sulfate | 537 mg/L | 384 mg/L | 312 mg/L | 348 mg/L | 350 mg/L | 250 mg/L |
| TDS | 2,568 mg/L | 1,228 mg/L | 940 mg/L | 1,084 mg/L | 1148 mg/L | 750 mg/L |
| Turbidity (Field) | 5.06 NTU | 102.7 NTU | 77.0 NTU | 89.9 NTU | 0.51 NTU | 20 NTU |

Note*: The Water Quality Objectives are not specifically listed for the SG02 sampling location's corresponding Hydrologic Unit (Gertrudis Hydrologic Sub Area - HUB 902.42); therefore, the values listed are based on the proximate Hydrologic Unit (Gavilan Hydrologic Sub Area HUB 902.22), which are consistent with the objectives for the Santa Margarita River.

Please contact myself or Jeff Endicott, should you have any questions. Thank you.

Best regards,
AEI-CASC Consulting


 Christopher Ogaz, EIT, CPESC
 Environmental Project Engineer


 Jeff Endicott, P.E., BCEE, CPESC
 Engineering Director

cc: File 1282-0001