AQUATIC SCIENCE CENTER

Memo

To: Delta RMP Technical Advisory Committee and Pesticides subcommittee

From: Matthew Heberger and Liz Miller, Aquatic Science Center

Date: November 25, 2019

Subject: Response to questions on the Delta RMP Request for Qualifications to Provide Aquatic Toxicity Testing Services

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#	Question	Response
1	Page 5 indicates that the Contractor must provide same-day courier service for samples. Are samples guaranteed to be available for pick up on the same day as they are collected? Also, are there any restrictions on hours for when samples can be picked up from the designated location (i.e. only during normal business hours)?	Yes, samples will be available the same day, typically in the afternoon or early afternoon after a day of field sampling. Delta RMP toxicity sampling typically takes place on 2 consecutive days so the contractor will likely need to arrange 2 separate pickups in order to meet hold times. The field crew is usually done and back at their office between 5-6 pm on a sampling day. Sample pickup can be arranged for then or on the following morning during regular business hours. We expect the lab and/or their courier to coordinate closely with the field crew to arrange sample pickup. Good communication is important. This typically requires emails, phone calls, and/or text messages to coordinate

		the logistics. The lab will also need to communicate with the field crew before each sampling event, to ensure that preparations are made, organisms and supplies are on hand, etc.
2	On Page 11 (Section 4, Item 3), proficiency testing data is requested for *S. capricornutum*. However, this species is not offered as part of the DMR-QA study. Can you please confirm that this data is not required for the submission package?	You are correct, *Selenastrum* is no longer included in the DMR-QA studies, nor has it been for some time. We apologize for this error. This information is not required. The spreadsheet for data submission (RFQ Attachment C) has been updated and can be found here.
3	The Evaluation Procedures section of the RFQ (page 13) provide a brief narrative regarding the elements involved with the qualifications, but no scoring system (e.g., weighting of each element). ● What scoring system will be used to evaluate proposals? Specifically, how will each element be weighted?	We will evaluate labs based on evidence they submit for lab quality, relevant experience, responsiveness to the RFQ, and other factors. The evidence for lab testing quality and experience will be from the following areas: 1. The precision of their testing is good, relative to national laboratory statistics (i.e., the variability in their results is relatively low, or at least not unreasonably high) 2. The lab successfully completes most tests (i.e., Test Acceptability Criteria are usually met), 3. Demonstrated successful performance including successfully meeting hold times, maintaining proper lab conditions, maintaining sufficient quality test organisms, chemicals, and other supplies. 4. The lab has strong experience with method refinement and internal documentation, as evidenced by clear and detailed Standard Operating Procedure (SOP) documents. 5. The lab is willing and able to work with the Delta RMP by coming to meetings (at least quarterly) and discussing results, communicating regularly with program staff, and being willing to customize procedures and testing upon request.

4	The General Requirements (Page 4) section of the RFQ indicates "the Contractor shall have the in-house capability to perform all testing and related services…including TIE services", with the methods listed under Service Requirements (Page 5). The Proof of Quality (page 11) of the RFP does not indicate that laboratories are required to be accredited. ● Are the laboratories required to be accredited for toxicity testing?	ELAP accreditation (California's Environmental Laboratory Accreditation Program) for each of the 5 Delta RMP test organisms shall be considered a strong plus and can be considered among the "relevant laboratory certifications" requested under 1. Laboratory Information.
5	The Conflict of Interest Statement section of the RFQ (page 12) indicates that the program has a strong interest in avoiding both real and perceived conflicts of interest so as to ensure that the work is performed in an impartial and unbiased manner. ● As the Evaluation Procedure section of the RFQ does not list the use of conflict of interest information, how will the conflict of interest information submitted by bidders be used in the evaluation/selection process?	We do not anticipate that this information will disqualify any bidders, but included this out of an abundance of caution. If selection committee members feel that a bidder has a potential conflict of interest, we will consult with our attorney to decide on a course of action.
6	The Sample Schedule and Processing Requirements (page 5) section indicates that the sample holding time requirement is 36 hours, but the Delta RMP QAPP indicates that it is 48 hours. ● Please identify the holding time limit given this discrepancy.	The hold time for initiating aquatic toxicity tests is 36 hours from sample collection, per Table 12.1 in the Delta RMP QAPP v5, dated Aug 29, 2019. (A sentence on page 98 incorrectly referred to the hold time as 48 hours. We will correct this error in the next revision of the QAPP.)
7	The Toxicity Identification Evaluation section of the RFP (page 6) and Section 13.2.5 of the QAPP identifies the treatments to be used for TIEs, but does not specify the number of replicates to be used. The EPA TIE guidance documents permit a minimum of a single replicate to be used, whereas some projects in CA require the TIEs to include the minimum number of replicates in the EPA	The TIEs for the Delta RMP have historically included the same number of replicates per treatment as the toxicity tests; although, the number of organisms per replicate have been lower for some tests. We are open to considering flexibility in TIE testing when it is supported by laboratory experience/data and meets the goal of TIE testing

	manual for each specific method (e.g., 10 replicates for a chronic C. dubia test). ● Please identify the number of replicates that are required in a TIE for each species.	
8	Page 38 of the Delta RMP QAPP acknowledges that "invertebrates such as Ceriodaphnia and Hyalella are known to survive and reproduce well in a relatively narrow range of salinity and hardness", and goes on to indicate on page 93 that secondary conductivity controls are required for the C. dubia test when an ambient water conductivity is outside of the physiological range of the test organism. ● The RFQ references testing is to be performed consistent with SWAMP MQOs and with the QAPP, but this specific requirement is not noted in the RFQ. For the cost of services, how should these potential secondary controls be factored into the cost estimate as additional auxiliary treatments can affect test costs?	Please provide the unit cost to perform additional secondary controls. It is hard to predict the number of such controls that may be necessary.
9	***Hyalella azteca***– The RFQ lists 96-hr survival water exposure testing for Hyalella azteca, however, it refers to Table 8 in the SWAMP Freshwater **Chronic** MQO which specifies a 10-day survival and growth test. Additionally, Table 14.4 in the RMP QAPP specifies using a 10-day Hyalella survival test following a modified method following EPA/600/R-99/064, however, the SOP listed in Appendix F of the QAPP calls for a 96-hour exposure. Both the RFQ as well as the QAPP provide conflicting information regarding Hyalella testing. Can the RMP please confirm whether a 96-hr or 10-day Hyalella exposure will be required for this Delta RMP. Additionally, if a 10-day exposure is	You are correct, the program documentation is inconsistent. We will fix these errors in the next revision of the QAPP. The test the program currently uses is the 96-hr water exposure test for survival, as outlined by Table 8 in the SWAMP Measurement Quality Objectives for **Acute** Freshwater Toxicity Test Methods. If available, please submit both acute **and** chronic data for water-only and/or sediment tests for *Hyalella* and *Chironomus* tests. The spreadsheet for data submission (RFQ Attachment C) has been updated and can be found here.

	required, will survival be the only metric assessed, or will growth be assessed as well?	
10	**Selenastrum Test** – Table 10 of the MQOs lists testing with, or without, the use of EDTA. Per the RMP program, which method is required?	Selenastrum testing should be done **without** the use of EDTA. We have concluded that EDTA binds to metals, which may be linked to aquatic toxicity in ambient waters, and therefore using EDTA may not support the program goals.
11	**Reference Toxicant Tests:** Under the service requirements section of the RFQ, it states that "Monthly reference toxicant testing" is required for all test methods associated with this project. However, the MQOs state "One reference toxicant test per analytical batch is required when using organisms that are either commercially-supplied or wild-caught," which is consistent with US EPA requirements. Can the RMP please provide clarification regarding what reference toxicant testing frequency is required per the Delta RMP for organisms provided from commercial supplier?	Monthly reference toxicant testing is required for organisms cultured in-house. For organisms purchased from commercial suppliers, we would prefer one reference toxicant test per analytical batch, as per SWAMP and EPA guidelines.
12	**Holidays**: Per the RFQ the contractor is to be "available 7 days per week, excepting holidays off." Does this imply that testing is not expected to take place over holidays, or that sample collection and pickups are not expected to take place over holidays. We assume that "testing on any schedule" indicates that testing over holidays will be required by the testing laboratory but would like confirmation.	We understand that laboratory staffing may be more limited on major holidays or religious holidays. In other words, we seek to be reasonable and to work with our contractors. Because of Delta RMP work plan specifications, it would be ideal if testing is always available with no blackout dates (especially for the "first flush" sampling event each fall/winter). However, our field crews work holidays, so the limitation on holiday schedules really depends on effective communication and coordination by laboratory to meet work plan objectives.
13	**Field Blanks:** Section 5 of the SOQ section in the RFQ indicates that 2 field blanks be tested. For toxicity field blanks, is the toxicity testing laboratory to provide blank water (e.g. Laboratory Control water) specific to each species	The Delta RMP no longer requires field blanks for aquatic toxicity testing. We regret this error. We require field duplicates at a minimum rate of 1 per 20 samples. For the planned 48 environmental samples per year, we plan for 3 field duplicates, so a total of 51 samples will be tested.

	to be tested (multiple types of water may be used for different test methods)? Additionally, are mechanisms in place to ensure that the blank water is returned to the testing laboratory within the 2-week allowable hold time for bioassays (e.g. sample bottles and blank water be provided immediately prior to a sampling event)?	
14	**High Conductivity** – Have alternate species been used in the past due to elevated conductivity (e.g. *Atherinops affinis* or *Thalassiosira pseudonana*)? If so what mode of action is to take place to ensure that organisms may be ordered in a timely manner and tests are initiated within the 36 hour hold time (e.g. will field crews communicate with the testing laboratory regarding elevated conductivity values)?	No, this has not been an issue in the past. However, we appreciate labs' flexibility in working with us to achieve the program goals. In the event that we wish to make changes to test organisms or any other procedures, we would seek to work closely with field crews and lab staff, communicating via email and phone.
15	**TIE Testing** – Are TIE tests to be performed using the total number of replicates as described in the MQOs or are TIE test to be performed using abbreviated replicates (e.g. 5 Ceriodaphnia replicates per TIE treatment instead of 10)?	Total number of replicates as described in the MQOs (see response to question #7 above).
16	**TIE Testing –** Are TIEs to be performed at the 100% only concentration or will dilutions be required.	Dilutions will not be required.
17	Historically, what has been the frequency of toxicity and how many TIEs have been performed over the past year?	From 2015 - 2017, we sampled 5 sites on a monthly basis, and observed toxicity was as follows (the number of toxic results indicates that the test was significantly different from the control):

Results at 5 fixed sites from 2015-2017

Organism, Endpoint	# of valid tests	# toxic
Ceriodaphnia dubia		
Survival	110	3
Reproduction	110	31
Pimephales promelas		
Survival	119	8
Growth/biomass	119	9
Selenastrum capricornutum		
Cell count	120	17
Hyalella azteca		
Survival	35	1

Beginning with Water Year 2019, we adopted a revised monitoring design, where we sample 6 times per year at randomly chosen locations throughout Delta subregions. Since then, observed toxicity has been as follows:

Results at dozens of random sites, 2018-2019

Organism, Endpoint	# of valid tests	# toxic
Ceriodaphnia dubia		
Survival	48	2
Reproduction	48	18
Pimephales promelas		
Survival	42	0
Growth/biomass	42	2
Selenastrum capricornutum		
Cell count	40	20
Hyalella azteca		
Survival	40	3

It is difficult to predict the number of TIEs that may be necessary. For your cost estimates, please provide annual costs for standard testing and **unit costs** for TIEs.

18	Section 12.2 of the QAPP addresses the lack of commercially supplied organism availability over weekends and holidays. However, we would like to confirm that because some testing, specifically fathead minnow testing, cannot initiate on Sundays and Mondays due to the age requirements of the test organisms, initiating tests outside of the 36-hour hold times is acceptable.	We normally require tests be initiated within the 36-hour hold time, except in rare circumstances related to wet-weather sampling. The contractor will need to coordinate with the sampling team to make sure sampling is timed so that toxicity testing can start within hold times and that any exceptions are known. Therefore, please specify any restrictions that might impact your lab's ability to meet hold times.
19	The RFP indicates that bidders are to provide summary statistics data for the past 3 years, but the spreadsheets note 5 years. Which is correct?	**3** years, except when we ask for only the most recent 20 tests (see response to question #20 below)
20	The RFP calls for providing data over the last 3 years, but the reference toxicant and lab control spreadsheet headings/instructions indicate to enter the data for the last 20 tests. Our laboratory would have far more than 20 tests over the last 3 years – for example, we may perform upwards of 400+ chronic C. dubia tests/year. Are we to provide 20 tests worth of data or 3 years? The tables provide an insufficient number of rows for our data entry if the request is for the last 3 years, and entry of hundreds of test data points seems unusual if we are to provide pdf versions of our control charts as identified in Item 1 on page 11 of the RFP ("including control charts"). Please advise as to how we are to address this data request.	For the reference toxicant and control test questions (#s 1 and 2), you only need to provide data for your most recent 20 tests. For questions #3 (total tests performed) and 4 (test invalidation/ re-testing), please provide data for the past 3 years.
21	The reference toxicant spreadsheets have three unusual columns compared to our standard evaluations of reference toxicant data. Reference toxicant test evaluations are typically performed over a sequence of tests (e.g., last 20 tests is standard in the method manual). However, the table seems to imply that we are to enter the data from individual	We would like you to submit EC25 data for each test, not the aggregate of the last 20 tests. However, you do not need to submit data for individual treatments (we have removed several columns and apologize for the confusion). The spreadsheet for data submission has been updated and can be found here.

	reference toxicant tests, and even specific treatments (e.g., "Test Group (exposed or control)" column). When we evaluate our reference toxicant test data, we typically will evaluate it over a period of time (e.g., last 20 tests), and evaluate the mean EC25/EC50, %CV, and standard deviation. The table includes min and max as well, which seems to be consistent with a single treatment (i.e., like a lab control minimum and maximum). Please advise if we are supposed to enter the metrics for our data over a period of time (table heading indicated the most recent 20 tests) as opposed to individual reference toxicant test data.	
22	Page 11 of the RFP indicates that we are to provide the Ceriodaphnia (reproduction) and Pimephales (growth) reference toxicant data (EC25), but the tables in Attachment C only calls for the entry of the survival and sublethal data. Should the headings for the reference toxicant and control chart data tables for these tests in Attachment C note "reproduction endpoint" for Ceriodaphnia and "growth endpoint" for the Pimephales tests instead of also including the survival endpoints for these tests?	We would like you to submit both survival and reproduction/growth endpoint data. The spreadsheet for data submission has been updated for clarity and can be found here.
23	Page 11 of the RFP indicates that we are to provide 10-day growth data for both the Hyalella and Chironomus 10-day sediment tests (EPA 100.1 and 100.2, respectively), but the tables in Attachment C only calls for the entry of the survival data. Should the headings for the reference toxicant and control chart data tables for these tests in Attachment C note "growth endpoint" instead of "survival tests"?	We have altered Attachment C so that there are tabs for acute and chronic water column data for Hyalella and Chironomus. If you have both acute and chronic sediment data, please only submit chronic. The updated spreadsheet for data submission can be found here.
24	I am trying to complete Attachment C, and have a question regarding the information required for the ref tox EC25s for each of the test species. What exactly is being requested? Ref tox data is a dilution series test - are all of the test	See responses to questions #19–21 above. We apologize for the confusion. The spreadsheet for data submission has been updated for clarity and can be found here.

	concentrations for each test to be listed in the table? For 20 tests, that would be 120 rows of data for each endpoint. And there is no column to add the EC25. Am I missing something? We can provide a QC plot/data that provides the cumulative mean EC25 and %CV for each endpoint.	