ORANGE COUNTY WATER DISTRICT

REQUEST FOR PROPOSALS
RFP-25-021

FOR
Laboratory Information Management System (LIMS) Replacement

ISSUED: Thursday, June 18, 2026

PROPOSALS DUE:

Thursday, July 23, 2026 at 11:00AM PT

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The Orange County Water District ("OCWD" or District) is seeking proposals from qualified and experienced firms to provide Laboratory Information Management System ("LIMS") Replacement services, including full implementation, software licensing, and turnkey delivery. OCWD intends to evaluate the proposals received and enter into a Professional Services Agreement ("Agreement") with the qualified firm. The work is expected to commence following Board approval of Agreement award. The Agreement will be monitored closely for acceptable services rendered throughout the Agreement term. OCWD will have the option to terminate the contract in whole or in part during the Agreement term, for any reason or no reason, without penalty, upon notice. The proposer will not be entitled to lost profits or any other compensation not earned prior to the time of termination.

This Request for Proposal ("RFP") describes the required scope of services, the information that must be included in the proposal, and the proposal selection process. Proposers are encouraged to carefully review this RFP in its entirety prior to submitting their proposals. Failure to submit information in accordance with these requirements and procedures may be cause for disqualification.

1. INTRODUCTION

The OCWD is an internationally recognized leader in the water industry that was formed in 1933 by the California State Legislature which entrusted OCWD to guard and protect the region's groundwater basin and limited water supply. OCWD's mission is to provide a reliable supply of high-quality water that is sourced in an environmentally responsible manner to the more than 2.5 million residents and businesses within the 270 square mile service area of Orange County, California that OCWD serves. OCWD manages three of Southern California's greatest water supplies, this includes protecting rights to the Santa Ana River, managing and replenishing the Orange County Groundwater Basin, and operating and maintaining the Groundwater Replenishment System (GWRS), the world's largest advanced water purification system for potable water reuse. More information regarding the OCWD can be found at www.ocwd.com.

2. SOLICITATION SCHEDULE

The solicitation schedule is summarized in the table below. OCWD reserves the right to modify the schedule below at its discretion. Proper notification changes will be made to interested proposers.

RFP Issued	Thursday, June 18, 2026
Mandatory Pre-Proposal Meeting	Wednesday, July 1, 2026 at 9:00 AM PT
Questions Due Date	Wednesday, July 8, 2026 at 4:00 PM PT
Proposals Due	Thursday, July 23, 2026 at 11:00AM PT
Interviews and Demonstrations	Beginning week of August 10, 2026
Agreement Award Date:	September 2026 or October 2026

2.1. PRE-PROPOSAL MEETING

The mandatory pre-proposal meeting will be held virtually through Microsoft Teams on **Wednesday, July 1, 2026 at 9:00 AM PT.** Firms interested in submitting proposals are required to attend the pre-proposal meeting.

Meeting participants will be required to sign in. A copy of the sign-in sheet will be posted on the OCWD website at, https://www.ocwd.com/working-with-us/rfp-contracts/, after the pre-proposal meeting. Proposals will not be accepted from firms that do not attend the mandatory pre-proposal meeting.

To join the meeting please follow the instructions below:

Microsoft Teams meeting
Join:
https://teams.microsoft.com/meet/263892549953987?p=B6ktFxxdcmaJ4q6de7
Meeting ID: 263 892 549 953 987
Passcode: Qi2D2YV3

Dial in by phone
+1 916-535-3094,,436656888# United States, Fair Oaks
Find a local number
Phone conference ID: 436 656 888#

Need help? | System reference

2.2. QUESTIONS CONCERNING REQUEST FOR PROPOSALS

All questions regarding the RFP must be submitted in writing before the deadline due date of **Wednesday, July 8, 2026 at 4:00 PM PT**. All questions must be titled "**Question – RFP-25-021 for OCWD LIMS**". Responses to questions received from prospective proposers will be formally documented in a Question and Answer (Q&A) table that will be posted on the OCWD website: https://www.ocwd.com/working-with-us/rfp-contracts/. The Q&A table will be updated regularly as questions are received from prospective proposers. Questions received after the questions due date will not be considered.

Attention: Melody Yap, Purchasing Manager
Email: procurement@ocwd.com

2.3. DEADLINE FOR PROPOSALS

Three (3) hard copies and one (1) electronic flash drive copy of the proposal must be received in a sealed envelope by OCWD no later than **Thursday, July 23, 2026 at 11:00AM PT** or such later time that OCWD may announce by an addendum at any time prior to the proposal deadline. The envelope shall be plainly marked on the exterior "Proposal for **RFP-25-021 Laboratory Information Management System (LIMS) Replacement**" and with the name, company name, and address of the proposer.

Proposals must be mailed or delivered in person or via courier services at the District office listed below. To deliver submittal packages in person or via courier, please notify the guard at the main gate for proposal drop off. Sealed envelopes will be timestamped upon receipt at the receptionist desk.

Orange County Water District
Administration Office Building
Attention: Melody Yap, Purchasing Manager
Address: 18700 Ward Street
Fountain Valley, CA 92708

It is the Proposer's responsibility to ensure that proposals are received prior to the submittal deadline. Proposal packages should also include all signed Acknowledgment of Addendum forms that may be issued by OCWD as part of this RFP process, as further described below. Proposals received after the deadline will not be considered under any circumstances. FAXED OR E-MAILED SUBMISSIONS WILL NOT BE ACCEPTED. The OCWD will not be responsible for the proper identification and handling of any proposals submitted incorrectly. Only responses properly submitted to OCWD will be considered. OCWD reserves the right to reject any and/or all responses received. There will be no formal opening of the proposals.

2.4. PRE-SUBMITTAL ACTIVITIES

The District reserves the right to revise the RFP prior to the date the Proposals are due. Addendums to the RFP shall be posted on the OCWD website: https://www.ocwd.com/working-with-us/rfp-contracts/ for all interested Proposers. The District reserves the right to extend the date by which the Proposals are due.

3. PROJECT BACKGROUND AND DESCRIPTION

To ensure the quality of the water resources it manages, the District established its Philip L. Anthony Water Quality Laboratory ("OCWD Laboratory" or "The Laboratory"). The Laboratory is located in the city of Fountain Valley adjacent to the OCWD's administrative building and GWRS plant.

The District's laboratory operations rely on a Laboratory Information Management System (LIMS) to manage the full lifecycle of analytical data—from sample scheduling, intake, and testing through reporting and, in some cases, submission to regulatory agencies. OCWD's current Citrus LIMS is functioning and stable but was built in-house as a stop-gap measure as the legacy Aspen LIMS was nearly 20 years old and built on an architecture that is no longer supported by Microsoft. The Citrus LIMS has some improvements over Aspen but was built with backwards compatibility and limited project scope and does not meet evolving regulatory requirements, cybersecurity expectations, and integration needs across OCWD's enterprise systems.

Citrus LIMS' functionality is also augmented by a third-party Ideagen Quality Assurance software ("Ideagen"), which was implemented back in 2021. Ideagen functionality includes:

- Documentation of Corrective and Preventive Actions (CAPA);
- Document control with review, approval, version control, automated changelogging, and archiving;
- Tracking of staff training and demonstrations of capability;
- Tracking of instrument and equipment inventory and maintenance
- Management of method validations and other lab studies;
- Management of method detection limits by method and instrument.

OCWD's current LIMS interfaces with OCWD's Water Resources Management System (WRMS). WRMS is an Oracle database and the primary software used by the Water Quality department, which manages OCWD's permit compliance, compliance sampling, and data reporting to water providers and government agencies. For compliance monitoring samples, pre-login data input via WRMS and is imported to LIMS when samples are accessioned. After lab analysis of samples, result data is exported from LIMS to WRMS. WRMS data is also used by other OCWD departments for decision making and reporting purposes. OCWD's current LIMS also has parallel systems to manage sample task scheduling, pre-login data input, and accessioning for daily non-compliance plant management sampling for the on-site Groundwater Replenishment System (GWRS) and for OCWD's Research and Development department.

The laboratory currently employs 32 full-time staff and a handful of part-time student interns. There are no other laboratory sites at the District that use the LIMS, but there are approximately 90 District staff with LIMS logins. Approximately 55 users outside of the laboratory may need to access LIMS data from other buildings or work sites. LIMS access for OCWD staff outside of the laboratory would be used to infrequently perform sampling task scheduling, enter pre-login sampling information, or look up sample result data.

The laboratory analyzes approximately 20,000 surface water, groundwater, and process control samples from the OCWD's Groundwater Replenishment System ("GWRS") totaling approximately 435,000 analyses. The laboratory is accredited for both Drinking Water and Non-Potable Water methods. The laboratory must meet the regulatory requirements in Title 22, Division 2, Chapter 19 of the California Code of Regulations. Those requirements in turn refer to The National Environmental Laboratory Accreditation Conference ("NELAC") Institute 2016 Laboratory Standards ("TNI Standards") and 40 Code of Federal Regulations parts 141 and 136. The TNI 2016 Laboratory Standards are based on the International Organization for Standardization ("ISO") 17025:2005 Standard, General Requirements for the Competence of Testing and Calibration Laboratories. California's Title 22 regulations list some exceptions to the TNI 2016 Standards. These modified 2016 TNI Laboratory Standards were made part of the Title 22 regulations on January 1st, 2020, and laboratories in the state were to implement and comply with them by January 1st, 2024. As part of the Title 22 regulations, the laboratory

is also required to comply with individual reference method requirements found in the Standard Methods for the Examination of Water and Wastewater, EPA methods, and other reference methods as accredited, allowed, or agreed upon by ELAP, 40 CFR parts 136 and 141, regulatory bodies such as the California State Water Resources Control Board, relevant California Regional Water Quality Control Boards, the EPA, or other clients.

The TNI Standard requires intensive contemporaneous recordkeeping and traceability of equipment, materials, and personnel to records of calibration, maintenance, performance verification, purity, training, etc. These records must be traceable in turn to the analytical and quality control results generated by the laboratory. The OCWD Laboratory expects a modern LIMS to assist the laboratory in meeting these traceability requirements in as efficient a manner as possible.

4. SCOPE OF SERVICES

The District has determined that it is not practical to upgrade Citrus LIMS to meet current or future requirements. Therefore, the District has initiated a LIMS Replacement Project and is seeking a firm via this RFP that can provide, at least the following:

- LIMS software and implementation services that best meets the District's current and future requirements;
- Best in class solutions to meet the District's work processes and reporting needs; and
- Services in a cost effective, professional and efficient manner.

The new LIMS should provide a stable solution that will address the District's immediate needs, as defined in this RFP document, as well as provide a dynamic solution that can be configured to address changes to regulatory requirements, technological advances, and analytical methods as they occur in the future. This project will also advance OCWD's Information Services Division's digital-transformation strategy, which focuses on modern, secure, and interoperable systems aligned with ITIL and ITSM service-delivery principles. Through this modernization, OCWD will enhance laboratory performance, ensure data integrity, and reinforce its commitment to operational excellence and sustainable water management.

OCWD prefers solutions that meet requirements through vendor-supported configuration rather than custom software development. Proposers shall identify any requirements that require custom code, non-standard customization, or third-party software components.

The selected proposer shall assess, plan, execute, validate, and document migration of agreed-upon data from the existing LIMS environment to the proposed solution. The proposer shall provide a data migration strategy, validation approach, and reconciliation process for OCWD review and approval.

A successful LIMS implementation will achieve:

- Increased visibility of sample status from planning and collection, receiving,

testing and data reporting;

- Standardized calculations and data precision reporting;
- Comprehensive laboratory QC contained in a single system;
- Traceability appropriate to meet the 2016 TNI Standard's requirements;
- More efficient batching, data collection, validation, and reporting workflows;
- Sample labeling, bottle tracking and barcoding of samples and possibly consumables;
- Standardized reporting/presentation of data to LIMS users;
- Data review and approval with notification of data availability internally and externally;
- Tools for both standardized reports (on demand and automated) and ad-hoc queries that may be saved and repeated;
- Portal(Web) for user/client access to their data;
- Seamless integration with OCWD's enterprise platforms, primarily WRMS and DXR. Future projects may utilize LIMS integration with ERP/financial systems, GIS, and/or SCADA. Demonstrated ability to interface with such systems may play a role in the assessment of prospective LIMS;
- Completion of the lab's transition to all-digital (paperless) workflows.
- Strengthened data security, auditability, and compliance with state and federal water-quality regulations; and
- Long-term maintainability and scalability to accommodate future enhancements.

The complete scope of services for the LIMS Replacement Project is described in **Exhibit A**, attached at the end of this RFP. In addition, the Contractor shall design, implement, and configure the LIMS in accordance with the requirements and specifications contained in **Exhibit E – Lab Technical Appendices**

5. ROLES AND RESPONSIBILITIES

This section defines the respective roles and responsibilities of the District and the Contractor to ensure clear accountability throughout the project. The Contractor is responsible for the full design, implementation, configuration, testing, and delivery of a fully operational LIMS in accordance with the requirements of this RFP and its Appendices. The District is responsible for providing governance, coordination, and timely access to personnel, data, and systems necessary to support project execution, as well as participating in review, testing, and acceptance activities. These roles are

intended to establish a clear division of responsibilities to support effective collaboration, minimize project risk, and ensure successful system implementation.

5.1. CONTRACTOR RESPONSBILITIES

A. Core delivery responsibility
- Full responsibility for design, configuration, implementation, testing, and deployment of the LIMS
- Ensuring system meets all functional and technical requirements in Appendices
- Delivering a fully operational system suitable for production use

B. Project management obligations
- Provide a dedicated Project Manager with authority to manage implementation
- Maintain integrated project schedule and status reporting
- Manage vendor staffing and subcontractors
- Coordinate all implementation activities and dependencies

C. Technical implementation responsibilities
- Configure LIMS workflows, rules, and modules
- Develop and implement all required interfaces (e.g., WRMS, instruments)
- Perform data migration, transformation, and validation
- Ensure compliance with District infrastructure and security standards

D. Testing and quality assurance
- Develop and execute all testing plans (integration, regression, performance)
- Support and facilitate user acceptance testing (UAT) with District users
- Track, resolve, and document defects
- Ensure system readiness for production deployment

E. Training and documentation
- Develop training materials and user documentation
- Deliver train-the-trainer and end-user training sessions
- Provide system administration documentation and knowledge transfer

F. Post-go-live support
- Provide stabilization support after go-live
- Address defects and performance issues
- Support final acceptance process

G. Compliance and deliverables
- Deliver all required documentation listed in Scope/Appendices
- Ensure system supports regulatory compliance (ELAP, TNI, etc.)
- Maintain audit trail and data integrity requirements

5.2. DISTRICT RESPONSILBITES

A. Communication and Coordination
The District will appoint a Project Manager who will:

- Serve as the primary point of contact for communications between the District and Contractor
- Transmit District communications and requests to the Contractor as appropriate
- Receive Contractor communications and distribute them to relevant District stakeholders
- Coordinate internal District activities related to the project and align them with other ongoing District initiatives
- Facilitate coordination between stakeholder groups involved in the project

B. District Participation and Resources
The District will:

- Designate a project team consisting of representatives from relevant user and stakeholder groups to participate in workshops, reviews, testing activities, and key project decisions
- Provide reasonable access to District personnel, subject matter experts, and stakeholders as mutually scheduled and agreed upon
- Support the Contractor in understanding District operations, workflows, and requirements by providing reasonably available information and clarification
- OCWD Information Services shall review and approve architecture, infrastructure, cybersecurity, integration, and technical deployment decisions.

C. Review and Acceptance Activities
The District will:

- Review deliverables, system outputs, and other work products in a timely manner consistent with agreed-upon review periods
- Participate in UAT and other validation activities required to confirm system readiness for production use
- Facilitate internal review and resolution of differing viewpoints among District stakeholders involved in the project

D. Data, Systems, and Infrastructure Support
The District will:

- Provide access to available District data, reference materials, and legacy system information reasonably necessary for project execution
- Provide user workstations, network connectivity, and access to District systems consistent with the approved technical architecture and implementation approach
- Provide a secure workspace for Contractor personnel for project-related activities, subject to availability and mutual agreement

E. Third-Party Components and Procurement

The District will:

- Procure third-party hardware and software components required for the LIMS, as identified in the Contractor's proposal and confirmed during contract negotiations and final system design

F. Governance and Decision-Making

The District will:

- Facilitate timely decision-making by designated stakeholders throughout the project lifecycle
- Serve as the final authority for resolving internal differences in requirements, priorities, or interpretations among District personnel involved in the project
- Participate in project governance activities necessary to support implementation progress and system acceptance

6. GENERAL INFORMATION

The District expects the selected firm to provide quality service in accordance with industry standards. The firm must demonstrate experience with the type of anticipated work and must have the ability to perform all services in a timely manner upon request(s) from the District or the District's authorized representative. All work shall comply with the requirements of federal, state, and local laws, and District requirements.

Acceptable performance standards include, but are not limited to, dependability, contractor safety, demonstrated experience with anticipated work with the ability to perform all anticipated services in a timely manner upon receipt of request.

6.1. MINIMUM QUALIFICATIONS

The selected firm shall possess, at a minimum, the following qualifications to be considered for award. These qualifications are intended to ensure that the Proposer has the technical expertise, staff experience, and organizational capacity necessary to successfully implement the LIMS.

- Laboratory Domain Knowledge – In-depth understanding of laboratory operations, workflows, and regulatory reporting processes related to water-quality analysis, including chain-of-custody management, QA/QC procedures, and data validation.
- Infrastructure and Performance Engineering Capability – Experience performing infrastructure assessments, system sizing, and performance validation to ensure that enterprise environments can support software deployment requirements for computation, storage, and network performance.
- Cybersecurity and Compliance Competence – Familiarity with and adherence to industry-recognized security and privacy standards, including but not limited to NIST SP 800-53, ISO 27001, and CIS Controls. Ability to design and implement solutions that align with OCWD's IT governance and security policies.

7. ELEMENTS OF PROPOSAL

To provide a degree of consistency in the review of the written proposals, firms are required to include the following content in their proposals. The information required below will be used to evaluate each proposal based on the evaluation criteria outlined in this RFP. Proposals may be deemed non-responsive if they do not respond to all areas specified below.

Proposals shall be prepared simply and economically, providing a straightforward and concise description of how the proposal has satisfied all the requirements of this RFP. Emphasis shall be on completeness and clarity of content with sufficient detail to allow for accurate evaluation and comparative analysis. Excessive or irrelevant materials will not be favorably received.

Please include the following in your proposal:

7.1. TITLE PAGE

The proposer should identify the RFP title, name and title of the firm's contact person, address, telephone number, fax number, email address, and date of proposal submission.

7.2. COVER LETTER

A principal of the firm authorized to commit the firm to the requirements of the RFP must sign the cover letter. The letter should identify a contact person (name, e-mail address, and phone number) for future communication during the selection process. And shall also discuss the Proposer's commitment to providing high quality services, describe the firm's understanding and approach to the services, and its ability to perform the requirements of this RFP. Include a brief background of the firm including history, types of services provided, number of employees, number of offices and locations with staff size and disciplines, and any other relevant information that may be useful in determining the firm's qualifications to provide the services described in this RFP.

7.3. TABLE OF CONTENTS

The table of contents should include a clear and complete identification by section and page number of the submitted materials.

7.4. PROJECT OVERVIEW AND APPROACH

Present a narrative overview of the Proposer's understanding of the RFP requirements and the overall approach and technical plan for accomplishing the work assignments. Also discuss at a minimum the following:

- Ability to successfully complete work assignments within the District's required time frame and, as necessary, on short notice,
- Approach to assignment of work within the firm and how team members will conduct tasks and prepare anticipated deliverables,

- Describe the Proposer's project management approach and communications protocol,
- Describe the Proposer's approach to quality assurance and control, as well as any performance guarantees,
- Technical approach to assigned tasks, such as deployment strategies (how the project will be implemented from mobilization to demobilization), and
- Identify current and reasonably foreseeable actual and possible constraints, problems, and/or issues that could hinder the execution of services under the contract, and suggest approaches to resolving or managing these constraints, problems, and/or issues.

7.5. PROJECT TEAM EXPERIENCE AND QUALIFICATIONS

Proposer shall submit information regarding the firm's proposed project team's experience, qualifications, and ability to perform similar work, including relevant project experience and team structure, as described in the following sections.

7.5.1 PROJECT TEAM AND QUALIFICATIONS

Provide an organizational chart that describes the structure of the project team, including subconsultants. The project team description shall identify the following:

(i) The Project Manager,
(ii) The names of readily-available key personnel that will be deployed for each task and their contact information, and the primary office locations of each project team member,
(iii) The role each team member will play in providing services under the Agreement, and
(iv) A written assurance that the key individuals listed and identified will be performing the work and will not be substituted with other personnel or reassigned to another project without the District's prior approval. The proposal shall clearly identify who will lead the execution of assigned tasks and the respective personnel that will be assigned to them.

Provide a description of the experience, qualifications including required licenses and certifications, area of expertise or specialization, and availability (including current workload) of the project team members, including subconsultants/subcontractors, if any. Describe other project commitments by project team members and the anticipated level of involvement of each team member based on the abilities and expertise required for the type of work desired.

Provide the resumes of all members of the project team, including subconsultants/ subcontractors, as an appendix. Each resume shall not exceed three (3) pages and shall include name and title, education, years with the company, licenses and certifications

(issue and expiration dates), home office location, relevant experience within at least the last five (5) years, and other required qualifications discussed in this RFP.

The identified Project Manager will be OCWD's main point of contact for all assigned projects for the duration of the Agreement. The proposal shall include the Project Manager's contact information, including phone and e-mail address.

Once an Agreement has been executed, the Consultant must request approval from the District in advance of any new personnel being assigned to the project. The District reserves the right to reject or remove personnel performing services at any time for the duration of the Agreement.

7.5.2. RECORD OF SUCCESS ON RECENT SIMILAR PROJECT

Provide a minimum of three (3) references from other municipal, city, or county governmental agencies for which the company has recently or is currently providing **LIMS Replacement Services** that is equivalent or greater in scope as being required in this RFP. Indicate the scope of work, date, contract amount, and the name, email address, and telephone number of the client contact. Each referenced project shall identify the project team assigned, including key personnel and their specific roles and responsibilities on the project.

In addition, Proposer shall also provide a complete list of other public agencies in California or the United States utilizing your services over the past five (5) years. Ongoing projects currently being performed by the proposer also may be submitted for consideration. The District at its discretion may contact the references for additional information. Failure to provide accurate contact information may be cause for rejection of the proposal as being nonresponsive.

7.6. ADDITIONAL SERVICES

Include any comments, suggestions, or additions the Proposer may have regarding the scope of work or any other aspects of the work that the Proposer feels would be helpful to OCWD in selecting a firm for the services described in the RFP. Identify the potential impact(s) or benefit(s) that these recommendations would have if accepted by OCWD. Tasks above the minimum to complete the work described herein shall be clearly identified as "optional" in the proposal.

7.7. PRICE PROPOSAL

The Proposer shall submit a detailed pricing proposal for all software, implementation services, training, support, maintenance, licensing, and other costs associated with the proposed LIMS solution,

7.7.1 PRICE PROPOSAL

The pricing proposal shall include, at a minimum:

- Software licensing costs, including any recurring subscription, maintenance, or support fees;
- Implementation and configuration services;

- Data migration and interface development;
- Training and knowledge transfer services;
- Ongoing maintenance and support services;
- Optional services or modules, if applicable;
- Any assumptions, exclusions, contingencies or pricing dependencies.

The price proposal shall also include a proposed milestone-based payment schedule identifying:

- each proposed Payment Milestone;
- associated implementation phase or deliverables;
- milestone acceptance criteria;
- proposed payment amount for each milestone; and
- estimated timing for milestone completion. Payment Milestones shall be tied to discrete deliverables, completed implementation phases, or measurable project outcomes, rather than labor hours or level of effort.
- Major Payment Milestones should correspond to completion and acceptance of major implementation phases, including operational deployment of applicable system functionality.
- The District reserves the right to negotiate the final milestone structure, payment schedule, and milestone values during contract negotiations with the selected Proposer.
- **Illustrative Example Format (For Proposal Structuring Only):**
- The following example illustrates the expected format for milestone-based pricing submissions:

Milestone	Description / Deliverables	% of Total Cost	Estimated Value
1	Project Initiation & System Setup	10%	$XXX
2	Requirements & Design Documentation	10%	$XXX
3	Configuration & Interface Development	25%	$XXX
4	Data Migration & Validation	15%	$XXX
5	Testing & User Acceptance Testing	15%	$XXX
6	Go-Live & Stabilization	25%	$XXX

7.7.2 RATE SHEET

The Proposer shall submit a rate sheet identifying fully burdened hourly rates for all proposed personnel classifications. These rates shall remain fixed for the duration of the Agreement unless otherwise approved in writing by the District.

The rate sheet shall also include any applicable rates or fees for:

- subcontractors or subconsultants not identified in the proposed project team,
- equipment markups (if applicable), and
- other direct costs that may be incurred under the Agreement.

Hourly rates shall be used solely for authorized out-of-scope work, change orders, or optional services approved in writing by the District, and shall not be used as the basis for milestone payments under the base scope of work.

7.8. OCWD STANDARD AGREEMENT

Proposers shall provide a statement that the Proposer accepts OCWD's form of Services Agreement attached hereto as **Exhibit C**. Proposers responding to this RFP must be prepared to proceed with the Services Agreement in the form provided. Failure to comply with this requirement may result in the Proposer being disqualified and excluded from future procurement where applicable. The Services Agreement shall be executed by the Proposer within ten (10) calendar days of receipt of OCWD's Notice of Award to Proposer.

7.9. STATEMENT OF INSURANCE COMPLIANCE

Proposer shall provide a statement that it will meet the insurance requirements that are listed in the Services Agreement, attached hereto as **Exhibit C**. OCWD will request the insurance forms and associated documentation when OCWD provides notice that the Services Agreement is awarded.

7.10. BILLING AND PAYMENT TERMS

The District intends to compensate the selected Proposer through milestone-based progress payments. Proposers shall provide a statement that it will meet the minimum requirements specified here. At a minimum, the invoice for services shall include the Purchase Order Number and Agreement Number. Failure to satisfy the reporting requirements may result in rejection, payment delay, or short pay of the invoices submitted to OCWD for payment.

Invoices shall:

- reference the applicable Payment Milestone;
- identify the associated deliverables or implementation phase;
- include supporting documentation demonstrating completion of milestone requirements; and
- be submitted only after completion of the applicable milestone.

The District may require all deliverables and acceptance criteria associated with a prior milestone to be completed before payment of subsequent milestones.

The District will retain twenty-five percent (25%) of the total contract value until Final System Acceptance. Retention will be released only after all deliverables have been accepted, the system has been operating in a stable production environment for a period of sixty (60) consecutive calendar days, and all contractual obligations, including post-implementation stabilization support, have been satisfied. The District reserves the right to withhold retention until all post-implementation issues identified during the stabilization period have been resolved to the District's satisfaction.

7.11. CONFLICT OF INTEREST

Provide a statement that the proposer, individuals employed by the proposer, or firms employed by or associated with the proposer, do not have a conflict of interest with the Project. The proposer shall exercise reasonable efforts to prevent any actions or conditions that could result in a conflict of interest and shall include, but is not limited to, establishing precautions to prevent its employees or agents from making, receiving, providing in, or offering gifts, entertainment, payments, loans, or other considerations which could be deemed to appear to influence individuals to act contrary to the best interest of the District. If a potential conflict of interest is identified in any form, the Proposer shall inform the District immediately. Proposers are subject to disqualification on the basis of a conflict of interest as determined by OCWD. By submitting a proposal you are stating you do not have a conflict of interest with the Project.

7.12. EQUAL EMPLOYMENT OPPORTUNITY AND AFFIRMATIVE ACTION REQUIREMENTS

The proposers shall provide a Statement of Equal Employment Opportunity/Affirmative Action. The selected consultant/contractor and each subconsultant/subcontractor shall not discriminate in the employment of persons on the work because of race, religious creed, color, national origin, ancestry, physical handicap, medical condition, marital status, sexual preference or sex of such persons except as permitted by Section 12940 of the California Government Code. The selected contractor is expected to maintain policies similar to those of the District regarding equal employment opportunities and affirmative action as set forth in the District's Administrative Policies.

8. PROPOSAL SUBMISSION REQUIREMENTS

8.1. PROPOSAL FORMAT

The proposal shall be limited to no more than 25 single-pages in 8.5" width x 11" length size recycled or recyclable white bond paper, paginated, and bound. This does not include the title page, table of contents, cover letter, appendices, dividers, or résumés. Any oversized documents, such as charts or tables, must be folded to size and secured in the envelope.

All files shall be bookmarked and in a text-searchable PDF format (i.e., not scanned images) compatible with Adobe Acrobat Version 8.0 (at a minimum). The main directory

of the flash drive shall contain the entire proposal as two separate PDF files for Part One and Part Two. All sections of the PDF file shall be bookmarked.

8.2. PROPOSAL PREPARATION COSTS

This solicitation does not commit the District to award any work nor to pay any costs incurred from the preparation of proposals. Firms responding to this RFP will be solely responsible for all costs and expenses incurred during the selection process.

9. SELECTION PROCESS

Selection of the Consultant will be based on the proposal contents, prior experience of the firm, performance on similar or related projects, and overall costs that best serve the District. Other factors that may be considered during the evaluations include the firm's reputation in the industry and any other aspects which could affect the proposer's performance under the awarded Agreement.

All responsive proposals will be evaluated by a selection committee formed by the District. The proposal shall be of such scope and depth to sufficiently describe and demonstrate the proposer's understanding, approach, and qualifications to successfully complete the scope of services described herein. Submittal of incomplete or vague responses to any section or subsection of this RFP may result in rejection of the proposal. Proposals will be evaluated, scored, and ranked based on the criteria specified in the table below. The evaluation criteria listed in the OCWD Proposal Evaluation Form (**Exhibit B**) will be used to evaluate each proposer.

Item No.	Criteria for Proposal Evaluations	Maximum Points
1	Capability of Proposed LIMS to Meet OCWD Laboratory's Requirements and technology requirements	**20**
2	Proposed LIMS' Efficiency and Ease of Use for OCWD Users	**20**
3	Proposal's Project Approach, Technical Methodology, Schedule and the Clarity, Completeness, and Professional Quality of the Proposal	**15**
4	Qualifications of the Firm, the Project Manager, and Key Project Staff	**15**
5	Record Of Success, and Experience, on LIMS Integration Projects	**10**
6	Time Commitment and Continued Availability of Key Staff	**10**
7	Cost Proposal and Total Cost of Ownership	**10**
	TOTAL POINTS:	**100**

Following the initial evaluation of proposals, OCWD intends to shortlist a minimum of two (2) Proposers to participate in interviews and provide system demonstrations. The District reserves the right to modify the number of shortlisted Proposers or waive the shortlist

process if deemed to be in the District's best interest. Interviews and demonstrations may be evaluated and scored as part of the selection process, and the results may be used to adjust the final evaluation scores and rankings of Proposers. Demonstrations shall be based on OCWD-defined business scenarios and workflows. Proposers may be required to demonstrate specific functionality using sample OCWD use cases.

Upon completion of the evaluation process, OCWD will begin negotiations with the highest-ranked Proposer. If OCWD is unable to reach agreement with that firm, negotiations will be formally terminated, and OCWD may proceed to negotiate with the next highest-ranked proposer. This process will continue in rank order until an agreement is reached or all negotiations are concluded. Upon termination of negotiations with any proposer, OCWD will not re-enter negotiations with that firm.

The District reserves the right to award the contract to the firm who presents the proposal, which in the judgment of the District, best accomplishes the desired results. Based upon this information, OCWD staff will recommend a firm to OCWD's Board of Directors for award of the contract. The selected firm must be able to begin work immediately upon award of contract and must be able to maintain the required level of effort to meet the proposed schedule.

9.1. Capability of Proposed LIMS to Meet OCWD Laboratory's Requirements

The District will evaluate the extent to which the proposed Laboratory Information Management System (LIMS) meets OCWD Laboratory's functional, technical, and operational requirements, including compliance, integration, and long-term usability. Considerations include, but are not limited to the following:

- Extent to which the system provides full end-to-end traceability of samples, results, personnel, instruments, training, and quality records in support of TNI/ELAP compliance.
- Capability to support configurable laboratory workflows while maintaining system stability, upgradeability, and long-term vendor support.
- Effectiveness of data review, validation, and multi-level approval processes, including clear visibility of results, QC, and calculations.
- Practicality of inventory and consumables management functionality appropriate to OCWD's operational scale and staffing capacity.
- Capability to interface with laboratory instruments and external systems, including automated data exchange and manual entry where needed.
- Ability to integrate with or replace existing sample scheduling, pre-login, and downstream data transfer systems.
- Efficiency of sample accessioning and capture of associated collection and intake metadata.
- Demonstrated use of the proposed LIMS in comparable laboratory environments and availability of shared configurations or enhancements with other similar laboratories.
- Compliance with **Exhibit D** – Technical Architecture, Infrastructure, Security, and Integration Requirements.

9.2. Proposed LIMS' Efficiency and Ease of Use for OCWD Users

The District will evaluate the Proposer's solution based on the ease of use and efficiency of the LIMS for laboratory end users and supervisors. Considerations include, but are not limited to the following:

- Demonstrated understanding of laboratory workflows and end-user needs, including the extent to which the proposed LIMS reduces manual effort, supports electronic recordkeeping, and improves efficiency compared to paper-based or electronic systems outside of the current LIMS.

- Clarity, usability, and intuitiveness of the user interface, including how effectively the system consolidates related tasks within workflow screens and minimizes unnecessary navigation between modules or records.

- Effectiveness of context-aware functionality, including the system's ability to filter and present only relevant samples, analytes, reagents, and materials based on method, workflow task, and user role.

- Strength and reliability of system controls that support data integrity and compliance, including prevention of workflow progression when required data, approvals, or traceability links are missing.

- Efficiency of data entry and data manipulation tools, including support for bulk selection, batch updates, spreadsheet-like functionality, and streamlined keyboard navigation for high-volume laboratory operations.

- Quality of operational visibility and reporting tools, including the ability for users and management to quickly and easily assess sample status, workload progress, and pending tasks through intuitive, low-effort dashboards or equivalent views.

9.3. Proposal's Project Approach, Technical Methodology, and Sequencing

The District will evaluate the Proposer's understanding of OCWD's objectives, project scope, integration requirements, and overall approach to executing the LIMS implementation, including system architecture, data migration, testing, validation, and project scheduling. Considerations include, but are not limited to the following:

- Demonstrated understanding of OCWD's objectives, operational needs, and scope of work, as evidenced through the proposal and any supporting demonstrations.
- Clarity, completeness, and organization of the proposed technical approach, including how the Proposer will execute system configuration, integration, data migration, testing, and validation activities.
- Effectiveness of the proposed methodology and sequencing of tasks, including logical workflow progression, dependencies, and alignment with implementation

best practices.

- Quality and practicality of the approach, including efficiency, resource planning, budget awareness, adherence to District standards, and compliance with applicable regulatory requirements.
- Feasibility and realism of the proposed project schedule, including key milestones, deliverables, dependencies, and alignment with District timelines.
- Ability to identify project risks, constraints, and technical challenges, along with the relevance and strength of proposed mitigation strategies and value-added solutions.
- Overall integration strategy, including how the Proposer will ensure interoperability with existing systems, instruments, and downstream data reporting requirements.
- Degree to which the proposed solution utilizes vendor-supported configuration rather than custom software development.

9.4. Qualifications of the Firm, the Project Manager, and Key Project Staff

The District will evaluate the Proposer's firm, Project Manager, and key project staff to determine their ability to successfully deliver the LIMS implementation based on relevant experience, qualifications, and past performance. Considerations include, but are not limited to the following:

- Relevant experience of the firm and proposed project team delivering LIMS or comparable enterprise system implementations of similar scope, complexity, and regulatory requirements.
- Demonstrated success in completing similar projects, including adherence to schedules, budgets, quality standards, and applicable regulatory or industry requirements.
- Qualifications and composition of the proposed project team, including education, certifications, technical expertise, and alignment of roles, responsibilities, and skill sets.
- Experience and effectiveness of the Project Manager in leading comparable implementations, including stakeholder coordination, client engagement, and delivery performance.
- Familiarity of the firm and key staff with applicable District, County, and regulatory requirements relevant to laboratory operations and LIMS environments.
- Demonstrated capability in providing effective training, documentation, and knowledge transfer to support sustained system use and post-implementation success.
- Financial stability and organizational capacity of the firm to support successful execution of a multi-year implementation.

9.5. Record Of Success, and Experience, on LIMS Integration Projects

The District will evaluate the Proposer's experience delivering LIMS implementations, systems integrations, and public-sector projects, as well as the adequacy of staffing committed to the project. Considerations include, but are not limited to the following:

- Proven experience implementing commercial off-the-shelf LIMS solutions in municipal, environmental, or water-quality laboratory environments, including at least three comparable implementations within the past five years.
- Demonstrated ability to integrate LIMS with enterprise systems and laboratory instruments, including internal OCWD platforms such as WRMS, commercial platforms such as, ERP, SCADA, and GIS using APIs or other EDDs.
- Record of successful project delivery, including adherence to schedules and budgets and effective execution of complex IT and laboratory implementations.
- Demonstrated client satisfaction, including positive reference feedback on responsiveness, solution quality, and system performance.
- Experience delivering solutions in public-sector environments, including familiarity with procurement processes and California regulatory and compliance requirements.
- Adequacy of staff commitment and availability, including level of effort from key personnel to meet project delivery and responsiveness expectations.
- Demonstrated experience implementing LIMS solutions within Microsoft-based enterprise environments utilizing Active Directory, Microsoft SQL Server, and Power BI.

9.6. Time Commitment and Continued Availability of Key Staff

The District will evaluate the proposed level of effort and allocation of time by key staff assigned to the project. Considerations include, but are not limited to, the following:

- The number of hours and level of effort that key and senior staff are committing to the project.
- The appropriateness of the staffing mix, including the balance between key/senior staff and junior staff performing the work.
- The extent to which key staff are meaningfully involved in critical tasks, decision-making, and project oversight.
- Whether the proposed staffing approach is commensurate with the type, scope, and complexity of the project.

- The realism and adequacy of the proposed labor allocation to successfully deliver the work within the required schedule and quality expectations.
- For more complex or technical projects, the degree to which the proposal reflects a higher proportion of key or senior staff involvement, as compared to less complex assignments.
- The proposed staffing for the post-implementation phase commitment and ongoing technical support.

9.7. Cost Proposal and Total Cost of Ownership

Cost Evaluation: Review of pricing proposals, total cost of ownership, and long-term value relative to the District's budget and operational requirements.

- The completeness, clarity, and transparency of the cost proposal, including identification of all one-time and recurring costs.
- The reasonableness and competitiveness of the proposed pricing in relation to the scope of services and system capabilities offered.
- The total cost of ownership over the life of the system, including software licensing, implementation, configuration, integration, training, maintenance, support, upgrades, and any optional services.
- The consistency of the cost proposal with the proposed project approach, schedule, staffing, and man-hour estimates.
- Identification of assumptions, exclusions, and potential cost risks that could affect total project cost.
- The flexibility of the pricing structure, including scalability, user counts, module pricing, and future expansion.
- The value provided relative to cost, considering system functionality, usability, long-term sustainability, and benefits to OCWD Laboratory operations.
- Long-term costs associated with licensing, maintenance, support, upgrades, and required third-party components.

10. SPECIAL CONDITIONS

10.1. RESERVATIONS

This RFP does not commit the District to award a contract, to defray any costs incurred in the preparation of a Proposal pursuant to this RFP or to procure or contract for work.

10.2. PUBLIC RECORDS

All Proposals submitted in response to this RFP become the property of the District and are public records and as such may be subject to public review.

10.3. RIGHT TO CANCEL

The District reserves the right to cancel, for any or no reason, in part or in its entirety, this RFP including but not limited to: selection schedule, submittal date, and submittal requirements. If the District cancels or revises the RFP, the District will notify all the proposers in writing via email.

10.4. ADDITIONAL INFORMATION

The District reserves the right to request additional information and/or clarifications from any or all Proposers.

10.5. PUBLIC INFORMATION

Release of Public Information selection announcements, contract awards, and all data provided by the District shall be protected from public disclosure. Proposers desiring to release information to the public must receive prior written approval from the District.

EXHIBITS

EXHIBIT A

SCOPE OF SERVICES

Exhibit A
Scope of Services

The project scope includes, but is not limited to, the following major tasks:

Task 1: Project Management and Planning

1.1. The Proposer shall work with OCWD to define the final scope of the project. OCWD's research and the RFI process has shown that commercially available LIMSs vary in capability and scope. The full details of the requirements for OCWD Laboratory's next LIMS are included in Appendix A – LIMS Requirements. These core LIMS functions must be available in the new LIMS:

1. Sample task scheduling/management
2. Sample collection data input
3. Sample receipt
4. Sample management and tracking of both physical sample containers and sample work status (with visible backlog lists)
5. Logs for recordkeeping and batching during sample preparation and analysis
6. Traceability appropriate to meet the 2016 TNI Standard
7. Results import from instruments and manual data entry, as appropriate
8. Ability to perform multiple kinds of calculations for results and QC
9. Ability to configure results display (rounding, significant figures, below reporting limit, below MDL, etc.)
10. Multiple levels of data review and approval
11. Data exchange with other internal and external databases (WRMS, DXR, Ideagen)
12. Automated and on-demand report generation and/or on-screen data displays (dashboards)
13. Automated internal and external rules-based notifications
14. Sample and analyte query capabilities
15. Fully digitized (paperless) workflows
16. Appropriate data security with access levels determined by user roles
17. Full data auditability

The ideal LIMS would have more capabilities than those listed above. The extent to which the items listed below are implemented will depend on the selected LIMS' capabilities, practicality (staff resources and ROI), and acceptance by departments outside the Laboratory that would be impacted by implementation. Some items may never be implemented, or they may be left out of the initial implementation of the new LIMS and be added in a later project. The scope that is proposed for the new LIMS should consider:

1. The current LIMS manages sampling tasks, field data input, and COC generation for samples collected on-site from the OCWD's GWRS plant. These capabilities must be replaced in the new LIMS. However, a parallel system (called DXR) exists outside of LIMS for the Water Quality department's sampling. The sampling management system in the new LIMS may eventually replace sampling management in DXR, or they may remain separate. The Proposer should plan for LIMS to exchange sampling data with DXR and WRMS during sample receipt. Pre-Login data is imported from DXR and after sample receipt, sample collection data and field results are sent to WRMS.
2. Improved TNI traceability within LIMS is a must for this project. But the extent of traceability recordkeeping and the related inventory, maintenance, and training recordkeeping systems will be limited by lab size, resources, the LIMS' general efficiency, and the performance of LIMS' systems that overlap with the Lab's existing Ideagen Quality Assurance software. Proposers should recommend a traceability system that will satisfy state assessors, make the best use of LIMS and Ideagen's strengths, and be practical for laboratory staff to implement.
3. Ideagen manages document control and several kinds of recordkeeping (more details below in 2.1.4). The new LIMS may replace some Ideagen functionality, but OCWD does not believe a LIMS can completely replace Ideagen. The ideal LIMS would exchange data with Ideagen via APIs and be able to do things like link analyses to an SOP document stored in Ideagen or link a worksheet or Lab ID number in LIMS to a corrective action in Ideagen. Proposers should recommend the best way to utilize their LIMS with Ideagen.
4. Currently, the lab exports data to another internal database called WRMS. Multiple departments utilize WRMS for data analysis and the Water Quality department uses WRMS to manage data from subcontracted labs and to report combined data to outside agencies. The new LIMS is unlikely to replace the WRMS in this project, but it may be able to take over some of WRMS' functionality as part of a later project. Future projects may also leverage LIMS integration with ERP/financial systems, GIS, and/or SCADA. Proposers should explain how their LIMS could integrate with these other systems for future reference. While not critical for this project, it may be part of the decision-making process.

1.2. If selected, the Proposer shall develop and maintain a comprehensive Project Management Plan that defines the full scope of work, project objectives, key milestones, deliverables, roles and responsibilities, communication methods, and risk-management processes. The plan shall serve as the foundational governance document for the project and must be submitted for OCWD review and approval prior to project kickoff.

1.3. Proposer will provide a dedicated Project Manager with authority to manage implementation.

1.4. The Proposer's Project Manager shall maintain detailed schedules, progress reports, and status updates that clearly document project performance against established baselines. These documents shall identify completed tasks, upcoming milestones, outstanding issues, and any schedule or budget variances, along with proposed corrective actions.

1.5. The Proposer's Project Manager shall conduct recurring coordination meetings with OCWD's project team, the Laboratory Department, and other designated stakeholders. These meetings will be used to review progress, discuss risks or technical issues, confirm decisions, and document action items to maintain alignment between OCWD and the selected Proposer.

1.6. Quality assurance will be an integral part of project management. The selected Proposer shall implement and demonstrate adherence to OCWD's IT governance, cybersecurity, and change-management standards, ensuring that all project activities are executed in accordance with District policies, industry best practices, and applicable regulatory requirements.

Task 2: Requirements Definition and System Design

Task 2.1: Survey of Laboratory Requirements

2.1. The Proposer shall conduct requirements-gathering workshops to document business processes, data flows, laboratory workflows, and regulatory reporting needs. Workshops shall include participation from OCWD's Laboratory and Information Services staff to ensure that operational and analytical requirements are comprehensively captured. In addition:

2.1.1. The scope of the OCWD Laboratory's current workflows is performed using a combination of our in-house LIMS, a third-party QA software (Ideagen), Microsoft Office, Adobe Acrobat, and hand-written records. While improvements are desired, the Proposer shall ensure that OCWD's existing laboratory methods, workflows, QA/QC procedures, and reporting formats can be completed within or in conjunction with the new LIMS without altering the scientific or regulatory integrity of those methods. No existing functionality may be lost during this project unless replaced with functionality of equal or higher data integrity and end-user efficiency. Further method and workflow documentation will be provided by OCWD following contract award and shall be treated as confidential and proprietary information. The ideal LIMS could manage all or most of these lab workflows in an integrated system that shares a data source and allows linked traceability between all workflows that is manageable and visible from all major steps in the workflows.

2.1.2. Proposer may refer to Appendix B “OCWD Lab Workflows Overview” which is based on the proposed workflows in an improved LIMS that OCWD had planned to build in-house but abandoned in favor of a commercial LIMS. OCWD has also mapped the overall workflows of the OCWD Laboratory and a few individual methods and workflows (See Appendices C through K2). Achieving all this functionality may be beyond the scope of this OCWD LIMS Replacement Project, but capability to eventually handle the entire workflow is a desired feature of the LIMS that OCWD will select.

2.1.3. Proposers must demonstrate how its LIMS product will assist OCWD’s lab in maintaining California ELAP accreditation and complying with the 2016 TNI Standard (Minus Two). Traceability shall be maintained between reported results and:

- sample collection and acceptance,
- analysts’ training and demonstrations of capability,
- equipment,
- calibrations,
- verifications,
- maintenance, and
- standards, reagents, consumables, etc.,

2.1.4. The Proposer shall work with OCWD Laboratory staff to compare quality management system features included in their LIMS with those in Ideagen Quality Assurance software in use by the laboratory to determine how the LIMS may supplement, exchange data with, or replace functionality in Ideagen. Ideagen functionality includes:

- document control with review, approval, version control, and archiving;
- documentation of Corrective and Preventive Actions (CAPA);
- tracking of staff training and demonstrations of capability;
- management of method validations and other lab studies;
- management of method detection limits by method and instrument.

2.1.5. The Proposer shall prepare a Functional and Technical Requirements Specification (FTRS) capturing detailed system, security, and performance requirements. The FTRS shall include laboratory process mapping and identification of existing laboratory workflows currently used by OCWD to perform sample preparation and analyses, quality-control checks, and data validation.

2.1.6. The Proposer shall provide documentation or demonstration of how the following items work in their LIMS:

- How overall workflow tasks are configured and how workflow steps are added, removed, and linked;
- An example of a graphical representation/flowchart of configured workflows;
- An example of how smaller details such as custom fields, simple calculations, and data validation checks are configured;

- A list of pre-configured workflows intended for use by environmental water laboratories
- A list of any pre-configured QC values or QC calculations for common methods used by environmental water laboratories (primarily EPA and Standard Methods drinking water and non-potable water methods).
- Data import from instruments, especially any pre-configured options for instruments in common use and how LIMS handles final results calculation and raw data display when different instruments provide either raw data, calculated values, or both (especially regarding dilution factors).

Task 2.2: LIMS Ease-of-Use for End Users

2.2.1. The LIMS must allow for more electronic recordkeeping and efficiency of data entry than our current systems, which are largely paper records or electronic documents not linked to LIMS. As the amount of recordkeeping in LIMS will increase, the new LIMS must improve end-user efficiency over the OCWD Laboratory's current LIMS. The following non-exhaustive list includes examples (not specific requirements) of the types of features that would minimize the LIMS recordkeeping workload:

2.2.2. Related functions shall be accessible from relevant screens. For example, when working on a sample preparation log, controls or links shall be readily available to perform the tasks listed below. The preparation log must remain persistent so that returning to the prep log and resuming work shall not require a new search to open it:

- Indicating which bottle, vial, or aliquot is used in the prep;
- Recording measurements and observations of sample masses or volumes, pH, chlorine presence, etc.;
- linking related equipment, reagents, and standards;
- adding or removing samples, dilutions, or individual analytes;
- adding or removing QC samples such as spiked blanks (LFBs) and method blanks (LRBs);
- initiating a resampling or re-prep request/notification;
- indicating which samples are assigned for QC duplicates and matrix spiking;

2.2.3. Where staff must select from a list of available tasks or items, those lists shall be context-filtered. For instance:

- Samples or analytes shall only be available for selection in a workflow if they are assigned to that method and previous workflow steps have been completed (or it has been sent back to be redone);
- Reagents displayed for selection will be limited to those used for that particular step of sample prep for that method;
- Expired or unverified items will not be available for selection;

2.2.4. Work may not be assigned to or completed by staff that do not have appropriate training records;

2.2.5. The system shall allow for easy filtering and selection of groups of data when performing tasks. Some examples include:
- Select all of one analyte in a log;
- Select all analytes for one sample in a log;
- Select all contents of the log;
- Select one item and everything below it or specify a block to select with CTRL+click, Shift+click, selection box, etc.

2.2.6. The system will block users from progressing if required data has not been entered or required traceability has not been linked;

2.2.7. Data in tables can be copied, pasted deleted, moved, inserted, etc.;

2.2.8. The tab key can be used to navigate data entry on forms in a configurable order, and

2.2.9. Freeze panes, Page Up/Down, Home and End are available when working with tables of data

2.2.10. The status of samples and analytes can be readily assessed by analysts to see pending work or by management ensure work is competed in a timely manner through dashboards or some other method that does not require more than three data inputs to find, or that is persistent and can be easily refreshed.

Task 3: Solution Design Document

3.1. The Proposer shall develop a Solution Design Document outlining architecture, integrations, configurations, and system interfaces primarily with OCWD WRMS and laboratory instruments. Details on interfacing with other enterprise platforms (e.g., ERP/financial systems, SCADA, and GIS) may also be included for future reference, but will not be part of the scope of this project. All design documentation shall be submitted to OCWD for review and written approval prior to system configuration.

3.2. The Proposer shall include documentation explaining how they can provide a comprehensive backup and the ability to resume operations after recovery from a "disaster" incident via data retrieval

3.3. The Proposer shall include documentation explaining how data retrieval is possible in the event of a smaller data loss incident or data changes made in error.

Task 4: Software Licensing, Configuration, and Implementation

4.1. The Proposer shall provide a comprehensive, commercially supported Laboratory Information Management System (LIMS) software solution, including all necessary licenses, modules, and third-party components required for full system functionality.

The Proposer will be responsible for the following tasks:
- Software Provisioning and Licensing – Supply and manage all software licenses and associated components required for OCWD's operational and laboratory environments for the duration of the Agreement.

- System Configuration and Customization – Configure the LIMS software in accordance with the approved Functional and Technical Requirements Specification. Customize forms, workflows, and reports as necessary to support OCWD laboratory operations, QA/QC processes, and regulatory reporting. Explain how the Proposer's staff will work with OCWD staff during the configuration of the LIMS. What work will be conducted in person, in video conference, by phone, or through a ticket-based support system?
- Workflow Implementation – Implement business processes and automated workflows for sample management, chain-of-custody, QA/QC validation, reporting, and compliance monitoring.
- Enterprise Integration – Develop, configure, and validate interfaces with OCWD's WRMS and relevant laboratory instrumentation, ensuring secure and reliable data exchange.

Task 5: Architecture and Infrastructure Review

5.1. As part of implementation planning, the Proposer shall conduct a detailed System Architecture and Infrastructure Review to evaluate OCWD's current computing environment and confirm its readiness to host the proposed LIMS solution. The review shall include, at a minimum:
- Assessment of computer, memory, and storage capacity;
- Evaluation of network bandwidth, latency, and redundancy;
- Analysis of virtualization or container orchestration platforms and database performance;
- Review of cybersecurity controls, user authentication, and data-protection mechanisms; and
- Recommendations for any infrastructure upgrades, configuration adjustments, or resource allocations necessary to ensure optimal system performance and scalability.
- The Proposer shall provide documented System and Infrastructure Requirements, including detailed sizing guidelines and configuration specifications, based on expected usage, transaction volumes, and user concurrency at OCWD. The deliverable shall enable OCWD to validate that its infrastructure can adequately support the LIMS throughout its lifecycle.
- All architectural findings, requirements, and recommendations shall be reviewed and approved by OCWD's Information Services Division prior to system installation or configuration.

Task 6: Data Migration and Validation

6.1. The Proposer shall perform a comprehensive data migration and validation process to ensure complete, accurate, and verifiable transfer of all relevant data from OCWD's legacy Laboratory Information Management System (LIMS) and associated data repositories into the new platform.

6.2. The Proposer shall analyze existing data sources and develop a Data Migration Plan detailing data extraction, transformation, cleansing, loading, and validation procedures. The plan shall define data mappings between legacy and target systems, identify data dependencies, and specify tools and methods to be used. The Proposer shall coordinate with OCWD's Information Services and Laboratory staff to review and approve the plan prior to execution.

6.3. All data migration activities shall incorporate robust data-quality assurance controls, including the identification and resolution of duplicate, incomplete, or inconsistent records. Data shall be migrated using approved, validated tools and processes that ensure data security, traceability, and auditability throughout all phases of migration.

6.4. Following migration, the Proposer shall conduct structured validation testing to verify data completeness, accuracy, and integrity. Validation shall include record counts, field-by-field comparison, checksum verification, and functional validation within the new LIMS environment to confirm that migrated data behaves as expected within workflows, reports, and queries.

6.5. The Proposer shall prepare and deliver comprehensive Data Migration and Validation Reports summarizing methods, results, and exception handling, including all discrepancies identified and their resolutions. Final acceptance of the migrated data shall require written approval by OCWD.

Task 7: Testing and Quality Assurance

7.1. The Proposer shall conduct structured, traceable, and fully documented testing activities to verify that all functional, technical, and integration requirements have been met prior to production deployment. Testing shall confirm that the Laboratory Information Management System (LIMS) performs reliably, securely, and accurately under expected operational conditions.

At a minimum, the Proposer shall perform the following testing phases:

- Integration Testing – Validate that all system components, interfaces, and data exchanges between the LIMS and OCWD's WRMS and laboratory instruments function as designed.
- Performance Testing – Assess responsiveness, throughput, and scalability under anticipated workload volumes. Identify and remediate any performance bottlenecks.
- Regression Testing – Confirm that new configurations, patches, or updates do not negatively affect previously validated functionality.
- User Acceptance Testing (UAT) – Facilitate testing sessions with OCWD laboratory and Information Services staff to verify that business workflows, reporting, and usability meet District requirements.
- The Proposer shall provide a comprehensive Test Plan outlining objectives, environments, test cases, acceptance criteria, and responsibilities for each

testing phase. All results, issues, and resolutions shall be logged in a Defect Tracking Register maintained throughout the testing lifecycle. The Register shall include severity, root cause, resolution date, and verification of closure for each defect.

- A consolidated Test Summary Report shall be delivered following completion of testing, documenting all executed tests, identified defects, remediation actions, and final system acceptance results. Formal sign-off from OCWD will be required prior to system go-live.
- Deliver final test summary and sign-off documentation.

Task 8: Training and Knowledge Transfer

8.1. The Proposer shall develop and deliver a comprehensive training and knowledge-transfer program to ensure OCWD personnel are fully capable of operating, administering, and supporting the Laboratory Information Management System (LIMS) following implementation.

8.2. Training materials and user guides shall be tailored to the specific needs of OCWD's laboratory analysts, administrative users, and Information Services staff. All materials shall be written in clear, task-based language and include step-by-step procedures, reference documentation, and role-based workflows. The Proposer shall provide all instructional content in both printed and electronic formats suitable for internal knowledge retention and future onboarding.

8.3. Prior to system go-live, the Proposer shall conduct formal train-the-trainer sessions to prepare designated OCWD staff who will subsequently deliver user training. In addition, targeted end-user training sessions shall be conducted to familiarize laboratory personnel with system functionality, reporting features, and data-entry protocols.

8.4. The Proposer shall also provide knowledge-transfer workshops for OCWD's Information Services team covering system administration, configuration management, performance monitoring, and routine maintenance activities. These workshops will equip OCWD technical staff to manage the system independently, perform troubleshooting, and sustain long-term operational stability.

8.5. Completion of the training and knowledge-transfer program will be a prerequisite for final system acceptance.

Task 9: Go-Live and Post-Implementation Support

9.1. The Proposer shall coordinate and manage all activities required to ensure a smooth transition from implementation to full production operations of the Laboratory Information Management System (LIMS). This phase shall include detailed cutover planning, verification of data readiness, and validation of system configurations to confirm that all components are stable and aligned with OCWD's

operational requirements. A formal Go-Live Readiness Review shall be conducted jointly with OCWD prior to production deployment to confirm that all acceptance criteria have been met. During the initial stabilization period following go-live, the Proposer shall provide comprehensive support on-site or remotely (if agreed upon by OCWD) to monitor system performance, address user issues, and resolve any post-deployment defects. Support shall include system tuning and configuration adjustments done by the Proposer staff that worked with OCWD to initially configure and implement the system. Proposer staff will work in close coordination with OCWD's Laboratory and Information Services team to ensure continuity of operations.

9.2. Upon completion of the stabilization period, the Proposer shall prepare and deliver a Post-Implementation Review (PIR) documenting overall system performance, outstanding issues, resolutions, and lessons learned. The PIR shall also include recommendations for continuous improvement and optimization opportunities for system functionality, user experience, and performance.

9.3. The Proposer shall provide ongoing maintenance and support services in accordance with negotiated Service-Level Agreements (SLAs). These services shall include periodic updates, security patches, performance monitoring, and Proposer-provided upgrades as required to maintain compliance, reliability, and long-term system sustainability.

Task 10: Deliverables

10.1. At a minimum, the Proposer shall provide the following deliverables, each prepared in a professional, review-ready format suitable for OCWD's technical and management evaluation. All documents, drawings, and reports shall be delivered in both editable and finalized PDF formats.

- Project Management Plan and Schedule – A comprehensive plan outlining project objectives, deliverables, milestones, resources, communication protocols, and risk management strategies, accompanied by a detailed schedule with dependencies and critical path analysis.

- Functional and Technical Requirements Specification – A complete requirements document defining functional, non-functional, and performance criteria, including business workflows, laboratory processes, security requirements, and compliance obligations.

- Solution Design Document and Integration Plan – Detailed documentation describing the LIMS architecture, integration methods, and data models.

  The submission shall include:
  - As-Is and To-Be Architecture Drawings, depicting current and proposed system environments;

    - Data-Flow Diagrams illustrating data exchanges among the LIMS, WRMS and laboratory instrumentation;
    - Systems Architecture Schematics showing compute, storage, and network components; and
    - Integration and Interface Maps documenting communication methods, data protocols, and authentication mechanisms.

- Infrastructure and Performance Analysis – A report summarizing baseline infrastructure capabilities, expected workloads, and system performance benchmarks. The Proposer shall provide baseline performance metrics and projected post-implementation performance levels, supported by documented test results.

- Configured and Validated LIMS Software Solution – The fully configured and operational software platform, implemented in accordance with approved specifications and validated for all functional, integration, and performance requirements.

- Data Migration and Validation Reports – Documentation of migration strategy, data mapping, cleansing results, verification logs, and final validation outcomes ensuring data completeness, accuracy, and traceability.

- Test Plan, UAT Results, and Acceptance Sign-Off – Comprehensive test documentation covering all testing phases, test cases, defect tracking logs, user acceptance results, and signed acceptance approvals from OCWD.

- Training Materials and User Documentation – All training guides, user manuals, standard operating procedures, and administrative references prepared for OCWD laboratory and Information Services personnel.

- Post-Implementation Review Report and Final System Documentation – A final report summarizing system performance, lessons learned, recommendations for continuous improvement, and a complete archive of system configurations, integration specifications, and support procedures.

The selected Proposer shall furnish all labor, materials, equipment, software licensing, and professional expertise necessary to deliver a fully implemented and operational Laboratory Information Management System (LIMS) for the Orange County Water District (OCWD). The Proposer will work in close coordination with OCWD's Information Services Division, Laboratory Department, and other key stakeholders to ensure the system meets functional, technical, performance, regulatory and security requirements.

EXHIBIT B

EVALUATION CRITERIA

ORANGE COUNTY WATER DISTRICT PROPOSAL EVALUATION FORM

Project: RFP for Laboratory Information Management System (LIMS) Replacement (RFP-25-021)

Proposing Firm: _____ **Reviewer:** _____

	Criteria	Weighting (%)	Score (1-5)	Weighted Score	Comments
1	Capability of Proposed LIMS to Meet OCWD Laboratory's Requirements and technology requirements	20		0.00	
2	Proposed LIMS' Efficiency and Ease of Use for OCWD Users	20		0.00	
3	Proposal's Project Approach, Technical Methodology, Schedule and the Clarity, Completeness, and Professional Quality of the Proposal	15		0.00	
4	Qualifications of the Firm, the Project Manager, and Key Project Staff	15		0.00	
5	Record Of Success, and Experience, on LIMS Integration Projects	10		0.00	
6	Time Commitment and Continued Availability of Key Staff	10		0.00	
7	Cost Proposal and Total Cost of Ownership	10		0.00	
	Total	100			

Scoring:

5 = Excellent
4 = Above Average
3 = Average
2 = Below Average
1 = Poor

EXHIBIT C

SERVICES AGREEMENT

AGREEMENT NO. ***
with
***
for
***

This Agreement (the "Agreement") was approved by the ORANGE COUNTY WATER DISTRICT, a special governmental district organized and operating under the laws of the State of California (hereinafter "OCWD") on _____, and is by and between OCWD and *** ("Contractor"). (The term Contractor includes professionals performing in a consulting capacity.) This Agreement is effective as of the date it is fully executed by both Parties and Contractor has delivered a duly executed counterpart hereof to the OCWD (the "Effective Date").

PART I
FUNDAMENTAL TERMS

A. Location of Project: ***.

B. Description of Services/Goods to be Provided: *** in accordance with PART IV, Scope of Services, included herein.

C. Term: Unless terminated earlier as set forth in this Agreement, the services shall commence on the Effective Date or _____***_____, whichever is later ("Commencement Date") and the term of this Agreement shall continue through its expiration on ***.

D. Party Representatives:

D.1. OCWD designates the following person/officer to act on OCWD's behalf: ***

D.2. Contractor designates the following person to act on Contractor's behalf: ***

E. Notices: All notices and other writings required to be delivered under this Agreement to the parties shall be delivered at the addresses set forth in Part II ("General Provisions").

F. Attachments: This Agreement incorporates by reference the following Attachments to this Agreement:

F.1. Part I: Fundamental Terms
F.2. Part II: General Provisions
F.3. Part III Special Provisions
F.4. Part IV: Scope of Services
F.5. Part V: Budget

G. Integration: This Agreement represents the entire understanding of OCWD and Contractor as to those matters contained herein. No prior oral or written understanding shall be of any force or effect with regard to those matters covered by this Agreement. This Agreement supersedes and cancels any and all previous negotiations, arrangements, agreements or understandings, if any, between the parties, and none shall be used to interpret this Agreement.

IN WITNESS WHEREOF, the parties have executed and entered into this Agreement as of the date first set forth above.

ORANGE COUNTY WATER DISTRICT

By: _____
John C. Kennedy, General Manager

By: _____
Denis Bilodeau, Board President

Dated: _____

APPROVED AS TO FORM:

RUTAN & TUCKER, LLP

By: _____
Jeremy N. Jungreis, General Counsel

***

By: _____

Title: _____

By: _____

Title: _____

Contractor Information:

Address for Notices and Payments:
***
***

Attention: ***
Telephone: ***
Email.: ***

PART II
GENERAL PROVISIONS

SECTION ONE: SERVICES OF CONTRACTOR

1.1 Scope of Services. In compliance with all terms and conditions of this Agreement, Contractor shall provide the goods and/or services shown on Part IV hereto ("Scope of Services"), which may be referred to herein as the "services" or the "work." If this Agreement is for the provision of goods, supplies, equipment or personal property, the terms "services" and "work" shall include the provision (and, if designated in the Scope of Services, the installation) of such goods, supplies, equipment or personal property. Contractor hereby acknowledges that it accepts the risk that the services to be provided pursuant to the Scope of Services may be more costly or time consuming than Contractor anticipates and that Contractor shall not be entitled to additional compensation therefor.

1.2 Changes and Additions to Scope of Services. OCWD shall have the right at any time during the performance of the services, without invalidating this Agreement, to order extra work beyond that specified in the Scope of Services or make changes by altering, adding to, or deducting from said work. No such work shall be undertaken unless a written order is first given by OCWD to Contractor, incorporating therein any adjustment in (i) the Budget, and/or (ii) the time to perform this Agreement, which adjustments are subject to the written approval of the Contractor. It is expressly understood by Contractor that the provisions of this Section 1.2 shall not apply to services specifically set forth in the Scope of Services or reasonably contemplated therein.

1.3 Standard of Performance. Contractor agrees that all services shall be performed in a competent, professional, and satisfactory manner in accordance with the standards prevalent in the industry, and that all goods, materials, equipment or personal property included within the services herein shall be of good quality, fit for the purpose intended.

1.4 Performance to Satisfaction of OCWD. Contractor agrees to perform all work to the satisfaction of OCWD within the time specified. If OCWD reasonably determines that the work is not satisfactory, OCWD shall have the right to take appropriate action, including but not limited to: (i) meeting with Contractor to review the quality of the work and resolve matters of concern; (ii) requiring Contractor to repeat unsatisfactory work at no additional charge until it is satisfactory; (iii) suspending the delivery of work to Contractor for an indefinite time; (iv) withholding payment; and (v) terminating this Agreement as hereinafter set forth.

1.5 Instructions from OCWD. In the performance of this Agreement, Contractor shall report to and receive instructions from OCWD's representative identified in Part I, or his or her designee. Tasks or services other than those specifically described in the Scope of Services shall not be performed without the prior written approval of the OCWD.

1.6 Familiarity with Work. By executing this Agreement, Contractor warrants that Contractor (i) has thoroughly investigated and considered the scope of services to be performed, (ii) has carefully considered how the services should be performed, and (iii) fully understands the facilities, difficulties, and restrictions attending performance of

the services under the Agreement. If the services involve work upon any site, Contractor warrants that Contractor has or will investigate the site and is or will be fully acquainted with the conditions there existing, prior to commencement of services hereunder. Should the Contractor discover any conditions, including any latent or unknown conditions, which will materially affect the performance of the services hereunder, Contractor shall immediately inform the OCWD of such fact and shall not proceed except at Contractor's risk until written instructions are received from the OCWD's Representative.

1.7 Prohibition Against Subcontracting or Assignment. Contractor shall not contract with any other entity to perform in whole or in part the services required hereunder without the express written approval of OCWD. In addition, neither the Agreement nor any interest herein may be transferred, assigned, conveyed, hypothecated, or encumbered voluntarily or by operation of law, whether for the benefit of creditors or otherwise, without the prior express written approval of OCWD. In the event of any unapproved transfer, including any bankruptcy proceeding, OCWD may, in its sole and absolute discretion, void the Agreement. No approved transfer shall release any surety of Contractor of any liability hereunder without the express consent of OCWD.

1.8 Compensation. Contractor shall be compensated in accordance with the terms of Part V hereto ("Budget"). Included in the Budget are all ordinary and overhead expenses incurred by Contractor and its agents and employees, including meetings with OCWD representatives, and incidental costs incurred in performing under this Agreement. Contractor shall be compensated for actual costs incurred by subcontractors or other services, and no mark-up will be paid to contractor by OCWD. Unless otherwise specified in Part V, OCWD shall compensate Contractor on a time-and-materials basis at the rates listed in Part V. Contractor shall submit an invoice referencing this Agreement, the Work Order number, date and description of services performed, and the amount. OCWD shall pay the Contractor within 30 days of receipt of the invoice.

SECTION TWO: INSURANCE AND INDEMNIFICATION.

2.1 Insurance.

2.1.1. Insurance Required. Without limiting Contractor's indemnification obligations, Contractor shall procure and maintain, at its sole cost and for the duration of this Agreement, insurance coverage as provided below, against all claims for injuries against persons or damages to property which may arise from or in connection with the performance of the work hereunder by Contractor, its agents, representatives, employees, and/or subconsultants. All insurance coverages and policies required of Contractor for this Agreement are subject to acceptance and approval by OCWD.

Contractor shall not commence work under this Agreement until it has obtained the insurance required hereunder in a company or companies having an A.M. Best rating of A:VII and acceptable to the OCWD nor shall the Contractor allow any subcontractor to commence work on its subcontract until all insurance required herein of the Contractor has been obtained by such subcontractor. The Contractor

shall at the time of the execution of the Agreement present certificate(s) of insurance evidencing the coverage required by this Agreement. Such certificate(s) shall reference the agreement number of this Agreement provided on the first page hereof.

All of the insurance shall be provided on policy forms and through companies satisfactory to the OCWD. The OCWD reserves the right to obtain complete, certified copies of all required insurance policies, including the policy declarations page with endorsement number. Failure to continually satisfy the insurance requirements is a material breach of contract.

2.1.2. Required Policies. The Contractor shall procure and maintain for the duration of the Agreement, and for five (5) years thereafter, insurance against claims for injuries, diseases, or death to persons or damages to property which thereafter may arise from or in connection with the performance of the work hereunder by the Contractor, his agents, representatives, employees, or subcontractors. Coverage shall be at least as broad as the following:

(a) *General Liability – Commercial General Liability (CGL) – Insurance Services Office (ISO) Commercial General Liability Coverage (Occurrence Form CG 00 01)* including products and completed operations, mobile equipment, property damage, bodily injury, personal and advertising injury with limit of at least two million dollars ($2,000,000) per occurrence or the full per occurrence limits of the policies available, whichever is greater. If a general aggregate limit applies, either the general aggregate limit shall apply separately to this project/location (coverage as broad as the ISO CG 25 03, or ISO CG 25 04 endorsement provided to the OCWD or the general aggregate limit shall be twice the required occurrence limit. Any combination of a minimum $1,000,000 per occurrence General Liability and Excess Liability or Umbrella to meet the $2,000,000 total may be accepted in OCWD's sole discretion.

(b) *Automobile Liability – Insurance Services Office (ISO) Business Auto Coverage (Form CA 00 01)* covering Symbol 1 (Any Auto) and any mobile equipment used for the work pursuant to this Agreement, or if Contractor has no owned autos, Symbol 8 (hired) and 9 (non-owned), with limit of one million dollars ($1,000,000) for bodily injury and property damage each accident.

(c) *Workers' Compensation Insurance* – The Contractor shall provide Workers' Compensation coverage as required by the State of California, with Statutory Limits, and Employer's Liability Insurance with limit of no less than one million dollars ($1,000,000) each accident, one million dollars ($1,000,000 disease policy limit and one million dollars ($1,000,000) disease each employee. This policies shall be endorsed to waive all rights of subrogation against OCWD, and its officers, officials, employees, agents, representatives and volunteers (collectively "OCWD and OCWD Personnel"), excluding professional liability.

Contractor hereby certifies that it is aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and it will comply with such provisions before commencing the performance of the work of this Agreement. Contractors and subcontractors will keep Workers Compensation Insurance for their employees in effect during all work covered by this Agreement.

In the event Contractor has no employees requiring Contractor to provide Workers' Compensation Insurance, Contractor shall so certify to OCWD in writing prior to OCWD's execution of this Agreement, in which event no Worker's Compensation Insurance shall be required by this Agreement. OCWD and OCWD Personnel shall not be responsible for any claims in law or equity occasioned by failure of Contractor to comply with this section or with the provisions of law relating to Workers' Compensation.

(d) *Professional Liability Insurance* – for any and all professional services provided pursuant to this Agreement, Contractor shall maintain Professional Liability Insurance appropriate to Contractor's profession covering wrongful acts, negligent actions, errors, and omissions with limits no less than $1,000,000 per occurrence or claim, and $2,000,000 policy aggregate. This requirement does not apply if the work provided pursuant to this Agreement does not involve the provision of professional services.

(e) *Cyber Liability Insurance* – for any and all information technology services, with limits not less than $2,000,000 per occurrence or claim, and $2,000,000 aggregate or the full per occurrence limits of the policies available, whichever is greater. Coverage shall be sufficiently broad to respond to the duties and obligations as is undertaken by Contractor in this Agreement and shall include, but not be limited to, claims involving infringement of intellectual property, including but not limited to infringement of copyright, trademark, trade dress, invasion of privacy violations, information theft, damage to or destruction of electronic information, release of private information, alteration of electronic information, extortion and network security. The policy shall provide coverage for breach response costs as well as regulatory fines and penalties as well as credit monitoring expenses with limits sufficient to respond to these obligations.

(f) *Other Insurance* – Other insurance policies and coverage if included in Part III, Special Provisions.

2.1.3. Policy Contents. The policies required above shall contain or be endorsed to contain the following:

(a) *Additional Insured Status* – The General Commercial Liability, Automobile Liability, and Professional Liability policies required above, shall be endorsed to provide that the OCWD and OCWD Personnel are to be

given insured status (at least as broad as ISO Form CG 20 10 10 01) with respect to liability arising out of work or operations performed by or on behalf of the Contractor including materials, parts, or equipment furnished in connection with such work or operations. There shall be no special limitations on the scope of protection provided to OCWD and OCWD Personnel. This required status shall be provided in the form of a separate endorsement to the Contractor's insurance.

(b) *Primary Coverage* – For any claims related to work performed pursuant to this Agreement, the Contractor's insurance coverage shall be primary at least as broad as ISO CG 20 01 04 13 with respect to the OCWD, its directors, officers, employees, and authorized volunteers. Any insurance or self-insurance maintained by the OCWD, its directors, officers, employees, and authorized volunteers shall be excess of the Contractor's insurance and shall not contribute with it.

(c) *Separate Application* – The policies required by this Agreement shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

(d) *Notices of Changes or Cancellation* – Policies shall be endorsed to state that coverage shall not be suspended, voided, cancelled, reduced in coverage or in limits, non-renewed, or materially changed for any reason, without thirty (30) days prior written notice thereof given by the insurer to OCWD by U.S. mail, or by personal delivery, except for nonpayment of premiums, in which case ten (10) days prior notice shall be provided.

2.1.4. Deductibles and Self-Insured Retentions. Insurance deductibles or self-insured retentions must be declared by the Contractor and approved by the OCWD. At the election of the OCWD, the Contractor shall either cause the insurer to reduce or eliminate such self-insured retentions with respect to the OCWD, its directors, officers, employees, and authorized volunteers or the Contractor shall provide a financial guarantee satisfactory to the OCWD guaranteeing payment of losses and related investigations, claim administration, and defense expenses. The policy language shall provide, or be endorsed to provide, that the self-insured retention may be satisfied by either the named insured or the OCWD.

2.1.5. Verification of Coverage, Evidence of Insurance. The Contractor shall furnish the OCWD with copies of certificates and amendatory endorsements affecting coverage required by this Agreement. All certificates and endorsements shall contain the name and number of this Agreement, and are to be received and approved by the OCWD before work commences. However, failure to obtain the required documents prior to the working beginning shall not waive the Contractor's obligation to provide them. The OCWD reserves the right to require complete, certified copies of all required insurance policies, including policy declaration pages and endorsement pages, required by these specifications, at any time.

Failure to continually satisfy the insurance requirements is a material breach of contract.

2.1.6. Waiver of Subrogation (also known as Transfer of Rights of Recovery Against Others to Us). The Contractor hereby waives all rights of subrogation under this Agreement, and shall obtain endorsements necessary to affect this Waiver of Subrogation in favor of the OCWD, its directors, officers, employees, and authorized volunteers, for losses paid under the terms of this coverage which arise from work performed by the Named Insured for the OCWD; this provision applies regardless of whether or not the OCWD has received a Waiver of Subrogation from the insurer.

2.1.7. Continuation of Coverage. Contractor shall, upon demand of the OCWD deliver evidence of coverage showing continuation of coverage for at least five (5) years after termination of this Agreement. When any of the required coverages expire during the term of this Agreement, Contractor shall deliver the renewal certificate(s) including required endorsements and waivers of subrogation to OCWD at least ten (10) days prior to the expiration date.

2.1.8. Subcontractors. In the event that the Contractor employs other contractors (subcontractors) as part of the work covered by this Agreement, it shall be the Contractor's responsibility to require and confirm that each subcontractor meets the minimum insurance requirements specified above (via as broad as ISO CG 20 38 04 13), and to include the foregoing insurance requirements in favor of OCWD in the contract between Contractor and the subcontractor. The Contractor shall, upon demand of OCWD, and in all events prior to permitting the subcontractor to perform any work subject to this Agreement, deliver to the OCWD copies of such policy or policies of insurance and the receipts for payment of premiums thereon. The term subcontractor includes consultants and subconsultants.

2.1.9. Other Policies. At the time of contract document preparation, efforts were made to include all known insurance requirements which would take place during the contract. It is possible additional insurance requirements may be made by another agency or government entity to provide additional insurance not included here. At the direction of the agency/entity, the Contractor shall comply and satisfy the additional insurance requirements.

2.2 Indemnification. The parties mutually acknowledge that OCWD has retained Contractor to perform the tasks and services set forth in this Agreement based upon the special skills, expertise and experience of Contractor. Accordingly, in performing the services under this Agreement, Contractor shall use the skill and care that a highly specialized professional, with expertise in the field, would use under similar circumstances. Further, the parties mutually agree that, to the extent that Contractor retains subcontractors to perform any portion of any of the tasks or services under this Agreement, Contractor has a duty to OCWD to ensure that the tasks and services performed by such subcontractors meet the same professional level, skill and expertise expected of Contractor.

2.2.1. Except as set forth in subdivision 2.2.2 or 2.2.3, Contractor shall indemnify, defend (with legal counsel acceptable to OCWD) and hold harmless OCWD and the OCWD Personnel from and against any and all actions, suits, claims, demands, judgments, attorneys fees, costs, damages to persons or property, losses, penalties, obligations, expenses or liabilities ("Claims") that may be asserted or claimed by any person or entity arising out of Contractor's performance of any tasks or services for or on behalf of OCWD, whether or not there is concurrent active or passive negligence on the part of OCWD and/or any OCWD Personnel, but excluding any Claims arising from the active negligence or willful misconduct of OCWD or any OCWD Personnel where the active negligence or willful misconduct is determined to be the actual and proximate cause of the alleged injury.

2.2.2. The provisions of this subdivision 2.2.2 apply only in the event that Contractor is a "design professional" within the meaning of California Civil Code section 2782.8(c). If Contractor is a "design professional" within the meaning of Section 2782.8(c), then, notwithstanding subdivision 2.2.1 above, to the fullest extent permitted by law (including, without limitation, Civil Code sections 2782 and 2782.6), Contractor shall defend (with legal counsel reasonably acceptable to OCWD), indemnify and hold harmless OCWD and OCWD Personnel from and against any Claim to the extent the Claim arises out of, pertains to, or relates to, directly or indirectly, in whole or in part, the negligence, recklessness, or willful misconduct of Contractor, any subcontractor or any other person directly or indirectly employed by them, or any person that any of them control, arising out of Contractor's performance of any task or service for or on behalf of OCWD under this Agreement. Such obligations to defend, hold harmless and indemnify OCWD or any OCWD Personnel shall not apply to the extent that such Claims are caused in part by the sole active negligence or willful misconduct of OCWD or such OCWD Personnel. To the extent Contractor has a duty to indemnify OCWD or any OCWD Personnel under this subdivision 2.2.2, Contractor shall be responsible for all incidental and consequential damages resulting directly or indirectly, in whole or in part, from Contractor's negligence, recklessness or willful misconduct.

2.2.3. The provisions of this subdivision 2.2.3 apply only in the event that this Agreement is a "construction contract" within the meaning of Civil Code Section 2782(b) and 2783. If this Agreement is a "construction contract" within the meaning of those statutes, then notwithstanding subdivision 2.2.1 above, to the fullest extent permitted by law, Contractor shall indemnify, defend (with legal counsel acceptable to OCWD) and hold harmless OCWD and the OCWD Personnel from and against any and all Claims that may be asserted or claimed by any person or entity arising out of Contractor's performance of any tasks or services for or on behalf of OCWD, whether or not there is concurrent passive negligence on the part of OCWD and/or any OCWD Personnel, but excluding any Claims arising from the active negligence or willful misconduct of OCWD or any OCWD Personnel.

2.3 Survival. The provisions of this Section 2 shall survive termination of the Agreement.

SECTION THREE: LEGAL RELATIONS AND RESPONSIBILITIES

3.1 Compliance with Laws. Contractor shall keep itself fully informed of all existing and future state and federal laws and all county, municipal and OCWD ordinances and regulations which in any manner affect those employed by it or in any way affect the performance of services pursuant to this Agreement. Contractor shall at all times observe and comply with all such laws, ordinances, and regulations and shall be responsible for the compliance of all work and services performed by or on behalf of Contractor. When applicable, Contractor shall not pay less than the prevailing wage, which rate is determined by the Director of Industrial Relations of the State of California.

3.2 Licenses, Permits, Fees and Assessments. Contractor shall obtain at its sole cost and expense all licenses, permits, and approvals that may be required by law for the performance of the services required by this Agreement. Contractor shall have the sole obligation to pay any fees, assessments, and taxes, plus applicable penalties and interest, which may be imposed by law and arise from or are necessary for Contractor's performance of the services required by this Agreement, and shall indemnify, defend, and hold harmless OCWD against any such fees, assessments, taxes, penalties, or interest levied, assessed, or imposed against OCWD thereunder.

3.3 Covenant Against Discrimination. Contractor covenants for itself, its heirs, executors, assigns, and all persons claiming under or through it, that there shall be no discrimination against any person on account of race, color, creed, religion, sex, marital status, national origin, or ancestry, in the performance of this Agreement. Contractor further covenants and agrees to comply with the terms of the Americans with Disabilities Act of 1990 (42 U.S.C. §12101 et seq.) as the same may be amended from time to time.

3.4 Independent Contractor. Contractor shall perform all services required herein as an independent Contractor of OCWD and shall remain at all times as to OCWD a wholly independent Contractor. OCWD shall not in any way or for any purpose become or be deemed to be a partner of Contractor in its business or otherwise, or a joint venturer, or a member of any joint enterprise with Contractor. Contractor shall not at any time or in any manner represent that it or any of its agents or employees are agents or employees of OCWD. Neither Contractor nor any of Contractor's employees shall, at any time, or in any way, be entitled to any sick leave, vacation, retirement, or other fringe benefits from the OCWD; and neither Contractor nor any of its employees shall be paid by OCWD time and one-half for working in excess of forty (40) hours in any one week. OCWD is under no obligation to withhold State and Federal tax deductions from Contractor's compensation. Neither Contractor nor any of Contractor's employees shall be included in the competitive service, have any property right to any position, or any of the rights an employee may have in the event of termination of this Agreement.

3.5 Use of Patented Materials. Contractor shall assume all costs arising from the use of patented or copyrighted materials, including but not limited to equipment, devices, processes, and software programs, used or incorporated in the services or work performed by Contractor under this Agreement. Contractor shall indemnify, defend, and save the OCWD harmless from any and all suits, actions or proceedings of every nature for or on account of the use of any patented or copyrighted materials.

3.6 Proprietary Information. All proprietary information developed specifically for OCWD by Contractor in connection with, or resulting from, this Agreement, including but not limited to inventions, discoveries, improvements, copyrights, patents, maps, reports, textual material, or software programs, but not including Contractor's underlying materials, software, or know-how, shall be the sole and exclusive property of OCWD, and are confidential and shall not be made available to any person or entity without the prior written approval of OCWD. Contractor agrees that the compensation to be paid pursuant to this Agreement includes adequate and sufficient compensation for any proprietary information developed in connection with or resulting from the performance of Contractor's services under this Agreement. Contractor further understands and agrees that full disclosure of all proprietary information developed in connection with, or resulting from, the performance of services by Contractor under this Agreement shall be made to OCWD, and that Contractor shall do all things necessary and proper to perfect and maintain ownership of such proprietary information by OCWD.

3.7 Ownership of Data, Reports and Documents. The Contractor shall deliver to OCWD's representative identified in Part I, at the end of the project, notes and surveys made, all reports of tests made, studies, reports, plans, a copy of electronic and digital files, and other materials and documents which shall be the property of OCWD. The Contractor is not responsible to third parties of OCWD's use of data, reports and documents on other projects. OCWD may use or reuse the materials prepared by Contractor in any manner desired without additional compensation to Contractor. Any work performed by Contractor under this Agreement shall be the property of OCWD.

3.8 Retention of Funds. Contractor hereby authorizes OCWD to deduct from any amount payable to Contractor (whether arising out of this Agreement or otherwise) any amounts the payment of which may be in dispute hereunder or which are necessary to compensate OCWD for any losses, costs, liabilities, or damages suffered by OCWD, and all amounts for which OCWD may be liable to third parties, by reason of Contractor's negligent acts, errors, or omissions, or willful misconduct, in performing or failing to perform Contractor's obligations under this Agreement. OCWD in its sole and absolute discretion, may withhold from any payment due Contractor, without liability for interest, an amount sufficient to cover such claim or any resulting lien. The failure of OCWD to exercise such right to deduct or withhold shall not act as a waiver of Contractor's obligation to pay OCWD any sums Contractor owes OCWD.

3.9 Termination By OCWD. OCWD reserves the right to terminate this Agreement at any time, with or without cause, upon prior written notice to Contractor. Upon receipt of any notice of termination from OCWD, Contractor shall immediately cease all services hereunder except such as may be specifically approved in writing by OCWD. Contractor shall be entitled to compensation for all services rendered prior to receipt of OCWD's notice of termination and for any services authorized in writing by OCWD thereafter. If termination is due to the failure of Contractor to fulfill its obligations under this Agreement, OCWD may take over the work and prosecute the same to completion by contract or otherwise, and Contractor shall be liable for the costs OCWD incurs in completion of the services required hereunder, including, but not limited to, costs incurred by OCWD in retaining a replacement Contractor, and similar expenses and costs, and including increased staff time costs incurred by OCWD.

3.10 Right to Stop Work; Termination By Contractor. Contractor shall have the right to stop work only if OCWD fails to timely make a payment required under the terms of the Budget. Contractor may terminate this Agreement only for cause, upon thirty (30) days' prior written notice to OCWD. Contractor shall immediately cease all services hereunder as of the date Contractor's notice of termination is sent to OCWD, except such services as may be specifically approved in writing by OCWD. Contractor shall be entitled to compensation for all services rendered prior to the date notice of termination is sent to OCWD and for any services authorized in writing by OCWD thereafter. If Contractor terminates this Agreement because of an error, omission, or a fault of Contractor, or Contractor's willful misconduct, the terms of Section 3.9 relating to OCWD's right to take over and finish the work and Contractor's liability therefor shall apply.

3.11 Waiver. No delay or omission in the exercise of any right or remedy by a nondefaulting party on any default shall impair such right or remedy or be construed as a waiver. A party's consent to or approval of any act by the other party requiring the party's consent or approval shall not be deemed to waive or render unnecessary the other party's consent to or approval of any subsequent act. Any waiver by either party of any default must be in writing.

3.12 Legal Actions. Legal actions concerning any dispute, claim, or matter arising out of or in relation to this Agreement shall be instituted and maintained in the Superior Courts of the State of California in the County of Orange, or in any other appropriate court with jurisdiction in such County, and Contractor agrees to submit to the personal jurisdiction of such court.

3.13 Rights and Remedies are Cumulative. The rights and remedies of the parties are cumulative and the exercise by either party of one or more of such rights or remedies shall not preclude the exercise by it, at the same or different times, of any other rights or remedies for the same default or any other default by the other party.

3.14 Attorneys' Fees. In any action between the parties hereto seeking enforcement of any of the terms or provisions of this Agreement or in connection with the performance of the work hereunder, the party prevailing in the final judgment in such action or proceeding, in addition to any other relief which may be granted, shall be entitled to have and recover from the other party its reasonable costs and expenses, including but not limited to reasonable attorney's fees, expert witness fees and courts costs. If either party to this Agreement is required to initiate or defend litigation with a third party because of the violation of any term or provision of this Agreement by the other party, then the party so litigating shall be entitled to its reasonable attorney's fees and costs from the other party to this Agreement.

3.15 Force Majeure. The time period specified in this Agreement for performance of services shall be extended because of any delays due to unforeseeable causes beyond the control and without the fault or negligence of OCWD or Contractor, including but not restricted to acts of God or of the public enemy, unusually severe weather, fires, earthquakes, floods, epidemics, quarantine restrictions, riots, strikes, freight embargoes, wars, litigation and/or acts of any governmental agency, including OCWD, if the delaying party shall within ten (10) days of the commencement of such delay notify the other party in writing of the causes of the delay. If Contractor is the

delaying party, OCWD shall ascertain the facts and the extent of delay, and extend the time for performing the services for the period of the enforced delay when and if in the judgment of OCWD such delay is justified. OCWD's determination shall be final and conclusive upon the parties to this Agreement. In no event shall Contractor be entitled to recover damages against OCWD for any delay in the performance of this Agreement, however caused. Contractor's sole remedy shall be extension of this Agreement pursuant to this Section 3.15.

3.16 Non-liability of OCWD Officers and Employees. No officer, official, employee, agent, representative or volunteer of OCWD shall be personally liable to Contractor, or any successor in interest, in the event of any default or breach by OCWD, or for any amount which may become due to Contractor or its successor, or for breach of any obligation of the terms of this Agreement.

3.17 Conflict of Interest. No officer, official, employee, agent, representative or volunteer of OCWD shall have any financial interest, direct or indirect, in this Agreement, or participate in any decision relating to this Agreement which affects his or her financial interest or the financial interest of any corporation, partnership, or association in which he or she is interested, in violation of any Federal, State, or OCWD statute, ordinance, or regulation. The Contractor shall not employ any such person while this Agreement is in effect.

3.18 Compliance with California Unemployment Insurance Code Section 1088.8. If Contractor is a sole proprietor, then prior to signing the Agreement, Contractor shall provide to the OCWD a completed and signed Form W-9, Request for Taxpayer Identification Number and Certification. Contractor understands that pursuant to California Unemployment Insurance Code Section 1088.8, the OCWD will report the information from Form W-9 to the State of California Unemployment Development Department, and that the information may be used for the purposes of establishing, modifying, or enforcing child support obligations, including collections, or reported to the Franchise Tax Board for tax enforcement purposes.

3.19 Prevailing Wage Compliance. Contractor acknowledges and agrees that it shall be independently responsible for reviewing the applicable prevailing wage laws and regulations and effectuating compliance with such laws where they apply to the work performed pursuant to this Agreement, including, but not limited to the prevailing wage and related requirements set forth in this Section 3.19. Contractor shall bear all risks of payment or non-payment of prevailing wages under California law and/or the implementation of Labor Code Section 1781, as the same may be amended from time to time, and/or any other similar law.

The Contractor attention is directed to Division 2, Part 7, Chapter 1 of the Labor Code of the State of California and especially to Article 2 (Wages); and Article 3 (Working Hours), thereof.

Contractor hereby expressly acknowledges and agrees that OCWD has never previously affirmatively represented to Contractor, its employees or agents in writing or otherwise that the services performed under this Agreement are not a "public work," as defined in Section 1720 of the Labor Code. It is agreed by the Parties that, in connection with the

development, construction (as defined by applicable law) and operation of the work performed pursuant to this Agreement, including, without limitation, any public work (as defined by applicable law), if any, Contractor shall bear all risks of payment or non-payment of state and/or federal prevailing wages and/or the implementation of Labor Code Sections 1726 and 1781, as the same may be enacted, adopted or amended from time to time, and/or any other provision of law. To the extent applicable, OCWD will enforce all penalties required by law for Contractor's failure to pay prevailing wages.

Contractor shall comply with all applicable laws and regulations related to the payment of prevailing wages for the work performed hereunder, including but not limited to Sections 1720 et seq. and 1770 et seq. of the Labor Code, and interpreting case law and regulations. Contractor is independently responsible for reviewing and complying with all such laws (and every other law applicable to the Agreement). The requirements indicated in this Section 3.19 are duplicative, and not additive to California law, and shall not apply to any work not subject to the indicated State laws.

Without limiting the foregoing, in accordance with Sections 1773 and 1773.2 of the Labor Code, the OCWD has found and determined the general prevailing rates of wages in the locality in which the public work is to be performed are those determined by the Director of Industrial Relations and available at https://www.dir.ca.gov/OPRL/DPreWageDetermination.htm. Copies of the prevailing rates of wages are maintained with the OCWD's principal office and are available to any interested party on request. Contractor shall post a copy of the prevailing rate of per diem wages at each job site.

Pursuant to Labor Code Section 1775, it is hereby stipulated that Contractor shall, as a penalty to OCWD, forfeit not more than two-hundred dollars ($200) for each calendar day, or portion thereof, for each worker paid less than the prevailing rates as determined by the Director of Industrial Relations for the work or craft in which the worker is employed for the work by Contractor or any sub-consultant or subcontractor.

Contractor is aware of and will comply with the provisions of Labor Code Section 1776, including the keeping of payroll records and furnishing certified copies thereof in accordance with said Section. Pursuant to Labor Code Section 1771.4, Contractor must submit certified payroll records to the Labor Commissioner using the Department of Industrial Relations' electronic certified payroll reporting (eCPR) system.

Contractor is aware of and will comply with the provisions of Labor Code Sections 1777.5 and 1777.6 with respect to the employment of apprentices. Pursuant to Section 1777.5 it is hereby stipulated that Contractor will be responsible for obtaining compliance therewith on the part of any and all sub-consultants or subcontractors employed by Contractor in connection with this Agreement.

Pursuant to Labor Code Section 1810, it is stipulated hereby that eight (8) hours labor constitutes a legal day's work hereunder.

Pursuant to Labor Code Section 1813, it is stipulated hereby that Contractor shall, as a penalty to OCWD, forfeit twenty-five dollars ($25) for each worker employed in the execution of this Agreement by Contractor or by any subcontractor hereunder for each

calendar day during which such worker is required or permitted to work more than eight (8) hours in any one calendar day and forty (40) hours in any one (1) calendar week in violation of the provisions of Article 3 (commencing with Section 1810), Chapter 1, Part 7, Division 2 of the Labor Code.

Pursuant to Labor Code Section 1815, work performed by employees of contractors in excess of eight (8) hours per day, and 40 hours during any one week, shall be permitted upon public work upon compensation for all hours worked in excess of eight (8) hours per day at not less than 1 ½ times the basic rate of pay.

Pursuant to Labor Code Section 1725.5 and 1771.1, no contractor or subcontractor (or consultant or subconsultant) may be listed on a bid proposal for a public works project unless registered with the Department of Industrial Relations.

In accordance with Labor Code Sections 1860, 1861, and 3700, Contractor and every subcontractor is required the secure payment of compensation to all employees. By signing this Agreement, Contractor provides the following certification: "I am aware of the provisions of Section 3700 of the Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this contract."

To the fullest extent permitted by law, Section 2.2, Indemnification, specifically encompasses Claims arising from or related to (i) the noncompliance by Contractor or any party performing the work of any applicable local, state, and/or federal law, including, without limitation, any applicable federal and/or state labor laws (including, without limitation, the requirement to pay state prevailing wages and hire apprentices); (ii) the implementation of Labor Code Sections 1726 and 1781, as the same may be amended from time to time, or any other similar law; and/or (iii) failure by Contractor or any party performing the work to provide any required disclosure or identification as required by Labor Code Section 1781, as the same may be amended from time to time, and/or any other similar law.

SECTION FOUR: MISCELLANEOUS PROVISIONS

4.1 Records and Reports. Upon request by OCWD, Contractor shall prepare and submit to OCWD any reports concerning Contractor's performance of the services rendered under this Agreement. OCWD shall have access, upon reasonable notice, to the books and records of Contractor related to Contractor's performance of this Agreement. All drawings, documents, and other materials prepared by Contractor in the performance of this Agreement (i) shall be the property of OCWD and shall be delivered at no cost to OCWD upon request of OCWD or upon the termination of this Agreement, and (ii) are confidential and shall not be made available to any individual or entity without prior written approval of OCWD. Contractor shall keep and maintain all records and reports related to this Agreement for a period of three (3) years following termination of this Agreement, and OCWD shall have access to such records upon 48 hours notice.

4.2 Notices. Unless otherwise provided herein, all notices required to be delivered under this Agreement or under applicable law shall be personally delivered, or

delivered by United States mail, prepaid, certified, return receipt requested, or by reputable document delivery service that provides a receipt showing date and time of delivery. Notices personally delivered or delivered by a document delivery service shall be effective upon receipt. Notices delivered by mail shall be effective at 5:00 p.m. on the second calendar day following dispatch. Notices to the OCWD shall be delivered to the following address, to the attention of the OCWD Representative set forth in Paragraph D.1 of the Fundamental Terms of this Agreement:

To OCWD Representative: Orange County Water District
P. O. Box 8300
Fountain Valley, CA 92728-8300

Invoices only shall be properly identified with the corresponding Agreement No. and sent to one of the following:

apinvoices@ocwd.com

OR to the address shown below:

Orange County Water District
Attention: Accounts Payable
P. O. Box 20845
Fountain Valley, CA 92728-0845

Notices to Contractor shall be delivered to the address set forth below Contractor's signature on Part I of this Agreement to the attention of Contractor's Representative set forth in Paragraph D.2 of the Fundamental Terms of this Agreement. Changes in the address to be used for receipt of notices shall be effected in accordance with this Section 4.2.

4.3 Construction and Amendment. The terms of this Agreement shall be construed in accordance with the meaning of the language used and shall not be construed for or against either party by reason of the authorship of this Agreement or any other rule of construction which might otherwise apply. The headings of sections and paragraphs of this Agreement are for convenience or reference only and shall not be construed to limit or extend the meaning of the terms, covenants and conditions of this Agreement. This Agreement may only be amended by the mutual consent of the parties by an instrument in writing.

4.4 Severability. Each provision of this Agreement shall be severable from the whole. If any provision of this Agreement shall be found contrary to law, the remainder of this Agreement shall continue in full force.

4.5 Authority. The person(s) executing this Agreement on behalf of the parties hereto warrant that (i) such party is duly organized and existing, (ii) they are duly authorized to execute and deliver this Agreement on behalf of said party, (iii) by so executing this Agreement, such party is formally bound to the provisions of this Agreement, and (iv) the entering into this Agreement does not violate any provision of any other Agreement to which said party is bound.

4.6 Special Provisions. Any additional or supplementary provisions or modifications or alterations of these General Provisions shall be set forth in Part III of this Agreement ("Special Provisions").

4.7 Precedence. In the event of any discrepancy between Part I ("Fundamental Terms"), Part II ("General Provisions"), Part III ("Special Provisions"), Part IV ("Scope of Services"), and/or Part V ("Budget"), Part III shall take precedence and prevail over Parts I, II, IV and V; Part II shall take precedence and prevail over Parts I, IV and V; Part IV shall take precedence and prevail over Parts I and V; and Part V shall take precedence over Part I.

4.8 OCWD Contract Management Authority. The OCWD General Manager (or his or her duly authorized representative) shall have the authority to make approvals, issue interpretations, execute documents to implement or clarify this Agreement, waive provisions, and/or enter into certain amendments of this Agreement on behalf of OCWD so long as such actions do not result in any of the following: (a) an increase in the Budget set forth in Part V hereto, (b) a decrease in the scope of services without a corresponding reduction in the Budget, or (c) an increase in the risk of liability to OCWD. Such approvals, interpretations, waivers and/or amendments may include extensions of time to perform.

4.9

PART III
SPECIAL PROVISIONS

PART IV
SCOPE OF SERVICES

PART V
BUDGET

OCWD shall compensate Contractor in accordance with the below for a not-to-exceed fee of $***.00.

EXHIBIT D

IT TECHNICAL APPENDICES

Exhibit D – Technical Architecture, Infrastructure, Security, and Integration Requirements

D.1 Purpose

This appendix defines OCWD technical architecture, infrastructure, cybersecurity, integration, and support requirements for the proposed LIMS solution.

Proposers shall identify any exceptions to these requirements.

D.2 Enterprise Architecture Requirements

- The solution shall support on-premises deployment within OCWD-managed infrastructure.
- The solution shall support Microsoft Windows Server.
- The solution shall support Microsoft SQL Server.
- Solutions requiring Kubernetes or container orchestration platforms shall be identified.
- The solution shall align with OCWD enterprise architecture, security, and operational support standards.

D.3 Operating System Requirements

- Application servers shall support Microsoft Windows Server.
- Web servers shall support Microsoft Windows Server.
- All software components shall be supported on vendor-approved Windows Server versions.

D.4 Database Requirements

- The solution shall support Microsoft SQL Server.
- Microsoft SQL Server shall be the system-of-record database platform.
- Proposers shall identify supported SQL Server versions.
- Proposers shall identify any database dependencies outside of Microsoft SQL Server.

D.5 Identity and Access Management

- The solution shall support Microsoft Active Directory and/or Microsoft Entra ID.

- The solution shall support Single Sign-On (SSO).
- The solution shall support current versions of Microsoft Edge and Google Chrome.
- The solution shall not require browser plug-ins or unsupported client software.
- Proposers shall identify any client software requirements.
- The solution shall support Role-Based Access Control (RBAC).
- The solution shall support Multi-Factor Authentication (MFA).
- Administrative access shall support least-privilege principles.

D.6 Cybersecurity Requirements

- The solution shall support encryption in transit.
- The solution shall support encryption at rest.
- The solution shall maintain audit logs of user and administrative activity.
- The solution shall support OCWD cybersecurity policies and standards.
- The solution shall support role-based auditing and traceability of user actions.
- Proposers shall identify any third-party hosted components.

D.7 Logging and Monitoring

- The solution shall maintain audit logs for user, administrative, and system activity.
- The solution shall support export of logs to OCWD monitoring and security platforms.
- Log retention periods shall be configurable.
- Audit logs shall be searchable and exportable.

D.8 Backup and Disaster Recovery

- The solution shall support backup and recovery operations.
- The solution shall support point-in-time database recovery.
- The solution shall support disaster recovery procedures.
- Proposers shall identify backup, recovery, and disaster recovery capabilities.
- Proposers shall identify recovery time and recovery point objectives (RTO/RPO).

D.9 Integration Requirements

- The solution shall support REST APIs.
- The solution shall support integration with external systems.
- API documentation shall be provided for all supported integration methods.
- The solution shall support import and export of data using standard formats.
- The solution shall support integration with OCWD systems, including WRMS.
- The solution shall support integration with Microsoft Power Platform components.
- Proposers shall describe available integration methods and supported standards.

D.10 Reporting and Analytics Requirements

- The solution shall support ad hoc reporting.
- The solution shall support scheduled reporting.
- The solution shall support integration with Microsoft Power BI.
- The solution shall provide vendor-supported access to reporting data.
- The solution shall support direct access to reporting data through vendor-supported methods.
- Proposers shall identify available reporting and analytics capabilities.

D.11 Data Ownership and Portability

- OCWD shall retain ownership of all system data.
- The solution shall support export of data in non-proprietary formats.
- OCWD shall have access to all data stored within the system.
- Proposers shall describe available data export capabilities.
- Data export shall not require vendor professional services.

D.12 Lifecycle and Upgrade Requirements

- All software components shall be vendor-supported.
- The solution shall support routine vendor-provided upgrades.
- Proposers shall describe their upgrade process and release cadence.

- Proposers shall identify any functionality that may be impacted by upgrades.
- Preference may be given to solutions requiring minimal effort to maintain during upgrades.
- Vendor-supported upgrades shall not require significant redevelopment of system configurations or integrations.

D.13 Configuration and Customization Requirements

- The solution shall support configuration without custom software development.
- Proposers shall identify any requirements that require custom code.
- Proposers shall identify all proposed customizations.
- Customizations shall not prevent vendor-supported upgrades.
- Preference may be given to solutions that meet requirements through supported configuration rather than custom software development.

D.14 Documentation Deliverables

- The proposer shall provide solution architecture documentation.
- The proposer shall provide system design documentation.
- The proposer shall provide logical and physical data flow diagrams.
- The proposer shall provide interface and integration documentation.
- The proposer shall provide network and connectivity diagrams.
- The proposer shall provide database architecture documentation.
- The proposer shall provide configuration documentation.
- The proposer shall provide as-built documentation reflecting the final production environment.
- Documentation shall be delivered in editable electronic format.
- Documentation shall be updated prior to final system acceptance.
- As-built documentation shall reflect all approved production changes implemented during the project.
- The proposer shall provide technical knowledge transfer to OCWD staff.

- Knowledge transfer shall include system administration, configuration, integration, backup, recovery, and operational support procedures.
- OCWD shall receive unrestricted rights to all project documentation.
- The proposer shall participate in technical architecture review activities with OCWD Information Services.

D.15 Support and Maintenance Requirements

- Proposers shall describe their support model.
- Proposers shall identify support hours and escalation procedures.
- Proposers shall identify software maintenance and patching practices.
- Proposers shall identify expected response times for critical issues.
- Proposers shall identify locations of support personnel.
- Proposers shall identify software end-of-life and end-of-support policies.

D.16 Environment Requirements

- The solution shall support separate Development, Test, and Production environments.
- The solution shall support migration of configuration changes between environments.
- Production changes shall be tested in a non-production environment prior to deployment.
- Proposers shall identify environment requirements, dependencies, and licensing impacts.

EXHIBIT E

LAB TECHNICAL APPENDICES

The technical appendices included with this RFP provide detailed information about the District's laboratory operations, existing systems, and functional requirements for the proposed LIMS. Proposers shall review these appendices carefully when preparing their proposals. The following provides a brief description of the technical appendices.

- Appendix A: Requirements and Desired Features for a New OCWD LIMS – Based on our research of our workflows, we have prepared this list of LIMS needs. We have not attempted to list every field on every screen or report as we expect to buy a LIMS with adequate configurability to make listing that level of detail unnecessary.
- Appendix B: OCWD Lab Workflows Overview – A detailed overview of our expected lab workflows from sample receipt to data reporting. This includes functionality not possible in our current LIMS.
- Appendix C: OCWD Lab Simplified Overall Workflow – A simplified overview of our expected lab workflows.
- Appendix D: OCWD Lab Simplified Overall Workflow – Reduced Inventory Scope – Similar to Appendix D, but with a pared down inventory management system that may be more practical for our smaller lab and lean staff.
- Appendix E: Review and Approval of Sample Data Workflow Outline – A narrative outline of how we envision our current process if we could perform it using a more capable LIMS
- Appendix F through J: Workflow diagrams for several OCWD analytical methods representative of the variability seen in our methods.
- Appendix K-1 and K-2: OCWD Method Workflow – A workflow diagram for EPA 200.7 Metals by ICP-OES with a detailed breakdown in Appendix L-2 diagramming the variability required by EPA methods 200.7 and 200.8 depending on which elements are requested for analysis, whether the total or dissolved portion of the sample is analyzed, sample pH, and sample turbidity. The ideal LIMS would allow a dynamic workflow that would route the samples into the appropriate sample preparation steps based on the above factors with minimal manual sample prep log manipulation.
- Appendix L: Network and Infrastructure. This Appendix provides information regarding the District's physical network, server and workstation standards, and application support standards. Proposed LIMS must be compatible with these District standards.

- Appendix M-1, M-2, and M-3: Instrumentation Lists. These Appendixes list the make and model of the Laboratory's equipment and analyses performed with them. The LIMS will be required to interface with major analytical equipment (ICP-MS, ICP-OES, GC-MS, LC-MS, HPLC, FIA, IC, IC-MS, DA, SFA, spectrophotometers, etc.) but smaller pieces of equipment are also included since some LIMS may be able to interface with them.
- Appendix N-1 and N-2: Test Methods List. These Appendixes list all the analytical method that the OCWD Laboratory is ELAP-accredited for, and a smaller supplemental list of other non-accredited methods performed by the lab.
- Appendix O: LIMS Reports. This Appendix illustrates reports generated by the Laboratory's existing LIMS.

APPENDIX A

Requirements and Desired Features for a New OCWD LIMS

This list of requirements does not list every possible data field, function, or calculation expected on LIMS screens or reports or recorded in the LIMS database. OCWD has examined several RFPs from similar labs, and this type of content is similar in most labs, so a capable LIMS should meet these needs. Also, OCWD assumes that any LIMS selected has customizable workflows that allow for custom data fields that can be configured and added to the LIMS and LIMS reports. We expect to configure some custom fields and calculations in most workflows in LIMS.

As discussed in Exhibit A (Scope of Services) of this RFP, the LIMS Replacement Project's scope may vary in some requirements depending on the LIMS selected and the lab's ability to implement LIMS features. Use this key to understand whether the task or feature on this list is required, desired, or is an optional part of the project scope.

1. Required - Project tasks or LIMS functionality that MUST be completed/implemented as part of this project.
2. Desired - Project tasks or LIMS functionality that is desired in the new LIMS. If the Proposer agrees to achieve this outcome, then it will be completed during this project.
3. Optional – Scope that depends on acceptance from other departments in OCWD or otherwise seems less practical to implement. This scope is less likely to be implemented as part of this project but might be attempted later.

	Start-Up Support Requirements	**Scope**
1	The Proposer works with OCWD to create an implementation strategy with different phases or scales of use based on implementing methods by groups and/or establishing basic functionality and then adding more advanced features	Required
2	The Proposer provides or recommends a system for legacy data warehousing and transfers existing lab data to that system	Required
3	The Proposer works with lab on translation of migrated data so that data from the old LIMS can be used in reports and data trending with new LIMS data.	Required
4	The Proposer installs any software necessary for the LIMS	Required
5	The Proposer configures the LIMS to meet the requirements listed in this document, or for an agreed-upon scope.	Required
6	The Proposer prepares instrument interfaces to allow import of data from instrument to LIMS for all workflows agreed upon in the scope of this project.	Required
7	The Proposer also configures export of data to the instrument from LIMS if that is part of the LIMS workflow.	Desired
8	The Proposer prepares interfaces as needed for import/export of data to the OCWD WRMS and DXR's sample task scheduling system, sample pre-login data system, and post analysis compliance and external data reporting systems unless functionality is replaced in LIMS (see "Scheduling Sampling, Performing Sampling, and Sample Receipt" section below).	Required

9	The Proposer provides Electronic Laboratory Notebook functionality or an equivalent data entry module in LIMS for direct data entry when electronic data import from instruments is not used. Lab staff's primary interface will be a Windows laptop.	Required
10	The Proposer provides and installs reports that are essential to the workflows in the scope of this project. The Proposer will train the LIMS Administrator to make new reports, edit existing reports, and integrate these reports into LIMS.	Required
11	The Proposer provides printable logs for processes where electronic data entry is impossible, impractical, or will be developed in a later phase of LIMS implementation. OCWD already has a library of forms. Replacing existing forms will not be required in some cases, depending on document control and traceability needs.	Required
12	The Proposer works with OCWD to create a plan for testing and validating the LIMS	Required
13	The Proposer provides training for administrators and initial end-user training for staff.	Required
14	The Proposer provides comprehensive administrator, user, and technical documentation describing all functions and operations of the system.	Required
15	The Proposer provides a guarantee regarding the availability of the LIMS to operate 365 days per year during lab work hours (6am to 6pm Pacific Time) that is agreeable to OCWD.	Required

	Ongoing Support Requirements	**Scope**
1	The OCWD Laboratory operates 365 days a year and will require available emergency support at all times.	Required
2	Non-emergency support must be available during typical lab work hours (6am to 6pm Pacific Time Monday through Friday)	Required
3	If the LIMS will be hosted, or will only work with an internet connection, the Proposer must provide a plan and materials for offline work if the LIMS cannot be accessed.	Required
4	Ideally, LIMS would have online support (tooltips, help menu), an active user community, and ability to share workflow configurations with other customers.	Desired

	Workflow Configuration	**Scope**
1	LIMS has the ability to configure custom workflows for sample lifecycles that vary by method. Different methods may contain different sub-workflows for sample preservation, preservation checks, sample filtration, batch setup, extraction/digestion, sample spiking, analysis, etc.	Required
2	All workflows must be configurable as demands on the LIMS will change over time due to internal and external requirements.	Required
3	OCWD LIMS administrators and power users must be able to create workflows, maintain reference data, and configure custom fields and calculations.	Required
4	OCWD LIMS administrators and power users must be able to program advanced features, calculations, or actions using SQL or some other programming language.	Required
5	Data entry fields can be configured as either required or optional with a clear indication to users of which is which.	Required
6	LIMS handles methods where workflow steps do not have a 1 to 1 relationship. For example, method "CEC" is requested by the client, but in the lab, these samples are prepared once but analyzed multiple times with different analytical methods (instrument setups vary across analytical methods).	Required

7	The LIMS handles workflows that branch dynamically based on the results of part of the workflow. Examples: --pH checks for metals analysis with 24-hour re-checks – If the pH is in the proper range after 24 hours, the sample moves on to the next prep step. If not, the pH is adjusted and another 24-hour period begins. --Turbidity's outcome may determine if metals samples are digested or not. -- In some methods, LFBs and LRBs are only required if some field samples in the prep batch are filtered. --In TDS, the sample is weighed repeatedly until the weight difference between weighings is <0.5 mg.	Required
8	Details are configurable in LIMS. Item type, metadata fields, data validation, Analyte CAS#s, QC limits, RL, MDL, MCL, PHGs, etc., calculations, active/inactive statuses, comments fields, etc. can be added using front-end LIMS screens with security to filter who may make which edits.	Required
9	LIMS allows QC true values and limits to vary for a single analyte based on the regulatory categorization of the sample, sample location, or monitoring project being analyzed.	Desired
10	LIMS' data validation checks data type (numeric/text), data entered out of order (dependent data must be entered after the data it relies on for validation), and utilizes configured acceptable values (e.g. pH results must fall between 0 and 14) to screen out obvious input errors.	Required
11	When data errors are detected by LIMS' data validation, they are highlighted and error messages in plain text inform users what failed.	Required
12	Error messages can be edited/customized.	Desired
13	Drop-down lists of pre-configured data selections are used to avoid data errors from manual entry.	Desired
14	Batch layout templates can be configured with a sequence of pre-filled QC samples based on method requirements	Required
15	Batch layout templates may be configured to rotate the concentrations of pre-filled QC samples based on method requirements (e.g. calibration check standards in EPA 537.1, EPA 524.2, EPA 531.2). Alternatively, LIMS can inform analysts which concentration was used last so that analysts may select the correct concentration for the next batch.	Desired
16	Batches can be freely edited based on the number of received samples or when field and QC samples have to be added or removed	Required
17	LIMS has features that allow linking and display of traceability of products and equipment to various workflow steps as required by the TNI 2016 Standard (ISO 17025)?	Required
18	LIMS allows samples or individual analytes within a sample to travel freely backwards and forwards through the workflows when re-prep or reanalysis is needed.	Required
19	When re-prep or re-analysis occurs, samples do not have to be logged in again and new sample IDs are not created (although adding an iterated value or suffix to an existing ID is acceptable)	Required
20	LIMS allows combining and splitting batches from previous logs in the sample lifecycle. Example: Analytical batch made by combining two existing prep batches. There should be ways to do this by selecting the entire prep batch and also sample by sample or analyte by analyte, when needed.	Required
21	The interfaces to select/deselect analytes and samples for sending forward or backwards in the workflows must be efficient (especially in methods with many analytes)	Required
22	Barcode scanning is used at various steps to add or remove samples and traceability items from the workflow, unless another automated system is available	Required

	Work Status/Management	**Scope**
1	The LIMS will have tools such as dashboards, reports, or configurable queries to provide a broad overview of sample and analyte status with all active analyses and statuses. These tools must have input parameters such as the method, workflow step, analyst name or rotation duty to filter the results.	Required

2	Ideally, LIMS would have a "home page" dashboard with features such as: - Lists of pending prep, analysis, or review work - A search bar to quickly find a sample or worksheet by their ID number - A display highlighting upcoming sample, standard, and reagent hold times is a plus. - Dashboard can be reconfigured by user with widgets - Dashboard sections are collapsible so that user can focus on one step of workflow and collapse the others. - Dashboard can be sorted and filtered and columns can be rearranged/resized.	Desired
3	Ideally, the LIMS can put workflow steps into rotational duty assignments and assign lab staff as primary, secondary, or back-up within those duty assignments. This will facilitate automated duty- or user-specific filtering of the above tools.	Desired

	Inventory, Equipment, and Traceability	**Scope**
1	The LIMS will have an inventory system for Standards, Reagents, Consumables, Instruments, and Equipment	Required
2	The lab will be able to set approved suppliers and supplies	Optional
3	The inventory system can manage data about inventory date received, manufacturer, lot number, description, concentration, expiration date, etc.	Required
4	The inventory system can hold multiple expiration dates for an item and change them conditionally. For instance: --A manufacturer may provide an expiration date for an unopened standard but also suggest a hold time based on the date it is opened. The hold time takes precedence once the standard has been marked as opened unless the expiration date is before the hold time expires. --Generally, the lab's hold time for a prepared reagent may be reduced based on the manufacturer's expiration date of one of its components if it the manufacturer's expiration date is before the lab's hold time for the reagent. --A few reagents have a preservative matrix, so their hold time is valid beyond the manufacturer's expiration date	Required
5	Users can request that supplies be ordered in LIMS	Desired
6	Ideally, LIMS can interface with Maximo Enterprise Asset Management for making orders or collecting data on items received	Optional
7	LIMS allows the lab to build/customize digital logs to record item management (item receipt dates, opening reagents, re-testing standards, verifying item suitability, adjusting hold times)	Desired
8	LIMS allows the lab to build/customize digital logs for items that are combined when working standards, reagents, or bottle kits are prepared	Required
9	LIMS must have logs/modules to record observations and link traceability to equipment and supplies for workflows such as sample preservation checks, sample filtration, digestion, distillation, extraction, and analysis	Required
10	LIMS provides an efficient system to select inventory items when they are used such as barcoding from labels or selecting available active items from a context-filtered picklist on screen.	Required
11	LIMS can track instrument maintenance data (date, person performing, maintenance type, comments) and calibration/verification (pipettes, weights, balances, thermometers, etc.) and print maintenance logs	Desired
12	LIMS can track maintenance or calibration due dates. It can prompt analysts that maintenance or calibration due dates are upcoming and prevent the use of unverified/past due equipment.	Desired

	Scheduling Sampling, Performing Sampling, and Sample Receipt	**Scope**
1	Sampling task templates can be made to create recurring sampling tasks for non-compliance samples that are managed in the Laboratory's current LIMS.	Required

2	Ad-hoc or on-demand sampling tasks can also be created for non-compliance samples.	Required
3	The Proposer works with the Laboratory and Water Quality department to replace OCWD WRMS' sample task scheduling system and sample pre-login data system with the one created for non-compliance samples.	Optional
4	The Proposer works with the Laboratory and Water Quality department to replace OCWD WRMS' post analysis compliance and external data reporting systems.	Optional
5	LIMS must be able to group tests and analytes into sample prep methods and analytical methods.	Required
6	Groups of analytes and methods must be quickly selectable when creating a sampling task or schedule. For instance, analytes can be grouped in methods. Methods can be grouped in a larger entity that can be named and saved (we call these test series at OCWD).	Required
7	Sampling task templates and ad-hoc tasks can be created with pre-configured grouped methods, expected sampling location, date, bottle types, number of bottles, preservation types, sample matrix, grab/composite, etc. so that they do not have to be entered in the field while sampling or entered into LIMS upon sample receipt.	Required
8	Analytical methods will contain sampling requirements such as bottle types, sizes, and preservation requirements. LIMS must be able to combine and edit these requirements when grouping methods into test series.	Required
9	Calendar interfaces are available to select dates when creating sampling schedules and tasks.	Desired
10	Frequencies such as daily, weekly, monthly, quarterly, semi-annually, annually, every X hours/days/weeks/months, one-time, and multiple specified days of the week are available when scheduling tasks.	Required
11	LIMS may be used in the field to collect data during sampling such as sample collection time, pH, temperature, EC, DO, ORP, preservation used, sampling conditions, etc.	Desired
12	The data entered during task scheduling and sample collection is available in LIMS for reporting data and traceability. If schedules and sampling information are not handled within LIMS, there must be an electronic data transfer to get the data into LIMS. Keypunch data entry must be minimized.	Required
13	Field sampling data/edits will overwrite defaults entered during task scheduling. For instance, if a different bottle is used in the field than the one configured during task scheduling, then the configured bottle type must be overwritten.	Required
14	Once task templates and tasks are created, they may be edited and cancelled as needed. LIMS allows automated changes to child tasks based on edits or cancellation of parent task templates.	Required
15	The LIMS can present a calendar view of scheduled tasks that can be seen by all users with the ability to filter or query the scheduled events by department, project, user created, sampling location, etc.	Required
16	Security and roles can limit calendar visibility.	Desired
17	Chain of Custody documents are stored in LIMS or can be output as a report for recordkeeping	Required
18	Sampling data will include: location, number of sample containers, type of container, pretreatment, preservation, temperature, whether filtered, collector, collection date/time, received by, received date/time, monitoring project name, sample type (grab/composite), priority or due date, regulatory categorization, etc.,	Required
19	LIMS stores Sampling Location data such as address/physical location, managing agencies, location type (well, surface water), regulatory categorization, etc.	Required
20	Sampling staff each have an expected number of samples scheduled for delivery each day. The LIMS must provide an alert when scheduled sampling tasks are not completed or the number of sample bottles received does not match the number expected. This must happen in real time, not at the end of the day. This means LIMS must know the expected tasks for the day by each planned sample submitter and evaluate if all expected sample bottles and all submitter tasks for the day have been relinquished/completed once the accessioning of that group of bottles is marked completed.	Required
21	Samples may be rejected if they do not meet sampling requirements based on sample receiver observation.	Required

22	Samples may be rejected if they do not meet sampling requirements as determined by LIMS' data validation.	Desired
23	Sampling tasks may be edited upon arrival in sample receiving, or after being logged into LIMS, either by the submitter or receiver, to add, delete, or modify the sampling data or tests that are requested. This process must result in an amended Chain of Custody that clearly indicates which changes were made vs the original data.	Required
24	Both during sample task scheduling, and during sample accessioning, there will be data validation on the requested methods and analytes. Two examples of this validation are: --Ensuring that calculated values that are requested have all constituent analyses in the requests. For example, if Chromium III is requested, then Chromium and Chromium VI must be requested for the sample. --Duplicate analytes are not requested across multiple methods (e.g. NO3-N by SM 4500NO3-F and NO3-N by EPA 300.0 in the same sample).	Required
25	Sampling requestor, sampler, and/or lab staff must be able to add a due date/turnaround time or rush priority to a sampling task or analysis.	Required
26	The Chain of Custody document will indicate which regulatory category is required for each analysis requested (drinking water, wastewater for compliance, other). This will default based on configured data (sampling location, monitoring project, etc.) but may be overwritten by users.	Required
27	The LIMS can track some workflows (such as initiation of sampling tasks) by the start date of composite samples, and other workflows (calculating sample hold times or reporting due dates) by composite end dates	Required
28	Where hold times are 72 hours or less, hold time calculations will use time of day vs. whole days to verify if an activity has happened within hold time.	Required
29	LIMS can notify user groups when all expected samples have been received for the day	Desired

	Sample Bottle Management	**Scope**
1	LIMS can track sample bottle status from pre-collection bottle prep to sample disposal	Desired
2	LIMS has a system to record aliquoting date/time and aliquoting performed by data and provide labels if subsampling needs to be tracked. Generally, subsamples that will not be stored beyond the day's analysis will not be tracked.	Desired
3	LIMS provides labels with new unique IDs if subsampling needs to be tracked	Desired
4	Sample disposer and disposal date/time can be recorded for all sample bottles	Desired
5	LIMS can track bottle lot numbers, suitability (sterility checks, volume checks), and provide labels when the lab makes bottle kits for sampling	Required
6	LIMS can provide labels in various sizes appropriate for 4L bottles down to 1-2 mL extraction vials	Required
7	LIMS' barcode system can produce and read 1D and 2D (QR) barcodes	Required
8	Bottle labels have multiple fields (where practical based on size) configurable by the lab, such as location, collection date and time, requested analysis, preservation, sampler, RUSH, etc. Barcodes or QR Codes will also be present on the labels.	Required
9	Every sample bottle in LIMS that will be tracked has a unique identifier which also reflects receipt year, month, and date of collection. Such as 2509170498-02-01 where the first 6 digits reflect the date, the next 4 are sequential, the digits after the first dash are typically per method, and the digits after the second dash are for subsampling or multiple bottles collected for the same method.	Required

	Laboratory Instrument Interfaces	**Scope**
1	LIMS is capable of interfacing with analytical equipment to import/export data (Agilent, Thermo Fisher, Sciex, Perkin Elmer, EST, Seal, Varian). This data may come from a network drive or a flash drive if the instrument does not utilize a PC or the PC is not networked for security reasons.	Required

2	LIMS can import data from an analytical balance.	Required
3	LIMS can import data from "smart" lab devices such as pipettors, pH meters, and electronic thermometers	Desired
4	LIMS has the ability to customize instrument data import/export interfaces	Required
5	LIMS generates electronic export files to populate batches in analytical instruments	Desired
6	LIMS stores and/or outputs the sample batch layout (list of samples in order prepped or analyzed) for recordkeeping purposes	Required
7	LIMS includes or can create an electronic lab notebook for manual data entry	Required

	Laboratory Data and Calculations	**Scope**
1	LIMS allows custom calculations like Ion Balance (from *Standard Methods* 1030), Sodium Adsorption Ratio, Aggressive Index, Corrosivity, Nitrogens (Organic, Total, Nitrate Nitrogen), TTHMs, Hardness, etc.	Required
2	LIMS handles calculated results where constituents come from multiple analytical batches or multiple methods. Examples include Ion Balance, Nitrate Nitrogen, Chromium III, evaluations of Field Reagent Blanks collected with some Organics samples, and assessment of internal standards against the last check standard run on the instrument, even if in a previous batch.	Required
3	Analysts can indicate which results are and are not to be reported when there are multiple analytical results for an analyte in a sample (e.g. from serial dilution or confirmation analysis). Comparisons and selection must be available even when analyses occur in different analytical batches.	Required
4	LIMS provides logs for recording periodic support equipment QC checks such as oven, incubator, water bath, freezer, and refrigerator temperatures, balance checks, autoclave checks, and pipette calibrations.	Required
5	Analysts can add comments at multiple levels during various workflows (batch, sample, analyte, result) and these comments can be viewed in relevant reports, review screens, and in subsequent workflows in the sample life cycle.	Required
6	LIMS must import ALL instrument/analysis results for field samples (including multiple dilutions / injections), QC samples, calibration samples, Internal Standard (IS) and Surrogate data, rinses, etc.	Required
7	Where there are multiple injections for the same sample/analyte, each injection's result will have independent records with corresponding analysis time, dilution values, reporting limits, etc.	Required
8	When multiple dilutions have been performed for a sample, algorithms can be used to suggest the best one to be reported (generally the least diluted one whose raw result is within the calibration range)	Required
9	Analysts can override the choice of injections selected by the algorithm and must provide a comment or drop-down reason for it.	Required
10	Where there are multiple analyses of field or QC samples: --There is a clear record of which field sample analysis was reported --QC samples results can be categorized as passing, failing, or a gross error. Passing and failing values will be part of the long-term QC charting and calculations (like MDLs and method verifications), but gross errors will not. --Data review summaries and reports will clearly present these categorizations and related comments or qualifiers	Required
11	LIMS can handle calculations with factors such as dilutions, sample volumes, and weights when some instruments provide results with these factors already applied and some do not. LIMS must present these results in a unified fashion so that results are never compared with and without factors applied.	Required
12	LIMS Stores minimum and maximum quantitation limits and related values such as detection limits and the upper end of the linear dynamic range and can manage reporting beyond the quantifiable range with reportable results such as Non-Detect (ND), less than the Minimum Reporting Limit (<MRL), or with appropriate qualifiers. LIMS also appropriately handles QC results and calculations in relation to results outside the quantifiable range. Examples include:	Required

	--Recovery limits for low-range QC check standards that fall below the quantifiable range --Comparisons of duplicates, matrix spikes, and matrix spike duplicates to values that are above, below, or straddle the quantitation limits.	
13	Raw values are rounded to the correct number of reportable decimal places before evaluating them against quantitation or QC limits. --Values that equal QC limits are not considered exceedances/failures --Values that equal the MRL are quantifiable	Required
14	The lab can configure the order that analytes in a method are displayed on-screen and in reports. The preference is to store this order in one database location and reference it throughout the system.	Required
15	LIMS allows the many-to-many use of QC samples, calibration, IS, injections, etc. in relation to prep and analytical batches and results. Examples: --Methods with ongoing calibrations that will apply to multiple analytical batches. --Prep batches split into multiple analytical batches and only one analytical batch contains the LRB and LFBs from the prep batch, and the LRB and LFBs must be traceable to all samples in all analytical batches that were in that prep batch.	Required
16	LIMS performs QC calculations and displays them for review even when the injection with the QC spike was not selected for reporting. Example: A sample with wide historical range was prepped with serial dilutions. The matrix spike was created from the neat aliquot, but a diluted aliquot ended up being reported since it was in the calibration range. The spiked samples in the QC calculations should be compared to the neat field sample result.	Required
17	LIMS calculates IS results based on either the calibration standards or the last CCS. Some methods require both comparisons.	Required
18	LIMS can perform blank correction as applicable based on either method blanks, instrument blanks, or color blanks (samples injected without reagents).	Required
19	LIMS allows the lab to customize rounding rules and reporting format. --Banker's rounding rules can be used --The number of decimal places displayed can be conditionally configured both by significant figures and a set number of decimal places, based on the magnitude of the result (e.g. 99.9% and 101.1%) --Data can be reported non-numerically, such as <MDL, >MDL but < RL, NA, etc.	Required
20	LIMS can convert dilution values and positive well counts data to MPN based on *Standard Methods* 9223.	Required

	Data Review and Approval	**Scope**
1	LIMS provides a notification or has a dashboard that alerts data reviewers and approvers that data is ready to review/approve.	Required
2	LIMS has modules for data review and approval by analyst, peer reviewer, and supervisor. There are context-appropriate views of data and results at analyte, batch, and sample level.	Required
3	Data review may happen at multiple points during and after sample prep and analysis. Review requirements may be set at each review event (e.g. peer review required but not supervisor approval).	Required
4	LIMS has configurable user roles and security to determine who can review and approve data. Examples include: --Analysts cannot approve their own data. --Supervisors generally give final approval before reporting results data. --Reviewers and approvers cannot edit the data they are reviewing/approving.	Required
5	LIMS performs QC calculations for recovery and RPDs against pre-configured standard true values and limits and displays the results of these data quality checks during review.	Required

6	LIMS allows for configuration of data validation by the lab. Examples: --Results outside two standard deviations from historical mean at a sampling location. --Analysis times before prep times. --Filtered sample results that are significantly higher than unfiltered results.	Required
7	LIMS will highlight results affected by QC calculation and data validation failures.	Required
8	LIMS can automatically apply basic qualifiers to results based on configured conditions (pH samples where 15-minute hold time is impossible to meet, basic QC failures)	Desired
9	LIMS allows qualifiers to be selected for each result. LIMS also allows batch-application of qualifiers to whole worksheets, samples, all results for analyte X in a worksheet, etc., based on user selected inputs.	Required
10	Qualifier data can be searched or put into reports to check qualifier use and trends over time.	Required
11	LIMS provides historical trend data for an analyte at a sample location without the analyst having to leave the review module or view one sample/analyte's data at a time by inputting search parameters. A linked pop-up or adjacent tab is acceptable if it is simple to return to the main review module.	Required
12	LIMS can display and/or store as linked attachments everything needed for a digital data packet, including things like: --Summary of qualifiers and comments --Result summary --QC check outcomes for recoveries, RPDs, IS, Surrogates, etc. --Data review checklists and electronic signatures --Relevant traceability data for sample prep and analysis --Instrument raw data with any manual integrations or analyst comments attached --Sample prep logs --A reference to the versions of the relevant procedures (SOPs) in use at the time of sample prep and analysis --Images or videos --Typical file types for the above documents (MS Office, PDF, JPG, PNG, etc..)	Desired
13	Review and approval can be performed on batches that have QC samples only (like for MDLs, DOCs, or initial calibrations)	Required

	Reporting Tools and Queries	**Scope**
1	Software is available or provided with LIMS to edit or make complex reports like QC Charts or Data Validation Reports. The software would be something like Crystal Reports or SQL Server Reporting Services.	Required
2	In LIMS, it will be possible for the average user to make simpler ad hoc queries or data searches with search parameters like sample location, method/analyte, date ranges, analyst, etc.	Required
3	Ad hoc data searches can be saved for future use so that routine searches can be performed without building each one from scratch.	Desired
4	Ideally, ad hoc data searches include formatting options such as data grouping, conditional formatting, user layout customization, etc.	Desired
5	LIMS can output reports and data searches as PDFs, MS Office (Word and Excel), or print them directly to networked printers.	Required
6	LIMS will be able to send reports via email in conjunction with configured alerts (based on things like results above a set concentration or first-time quantifiable results at a specific sampling site).	Required
7	LIMS Reports can be scheduled to run automatically, and either be sent via email or stored on an OCWD network drive.	Required

8	LIMS must provide an interface for LIMS data for other OCWD departments to view data and request analyses. This should not incur extra licensing fees.	Required
9	LIMS must create EDDs to send to WRMS (in-house Oracle database for monitoring). Data is sent to WRMS after samples have been logged into LIMS (COC data and field test results) and then again after analysis is completed and approved.	Required
10	LIMS must create EDDs to send to EPA's CDX/SDWARS for UCMR and Proficiency Testing sample providers.	Required
11	Samples with approved results in LIMS transfer automatically to WRMS, but a manual review and transfer screen is also necessary.	Required

	Data Audit Trail	**Scope**
1	LIMS shall keep an audit trail of any changes made to static data (analysis codes, location codes, etc.) and dynamic data (sample results, analysis metadata, calculated values, etc.) as well as changes made to the approval status of tests.	Required
2	Audit trails in LIMS store at a minimum, name of person making change, date/time of change, new and previous value, and change reason for data changes.	Required
3	Change reason can be configured to be required or optional.	Required
4	Audit trail data must be available for at least 5 years.	Required
5	LIMS will have a module to view the audit trail with search parameters. Visibility will be restricted to roles like supervisors, QA/QC, and Administrators.	Required

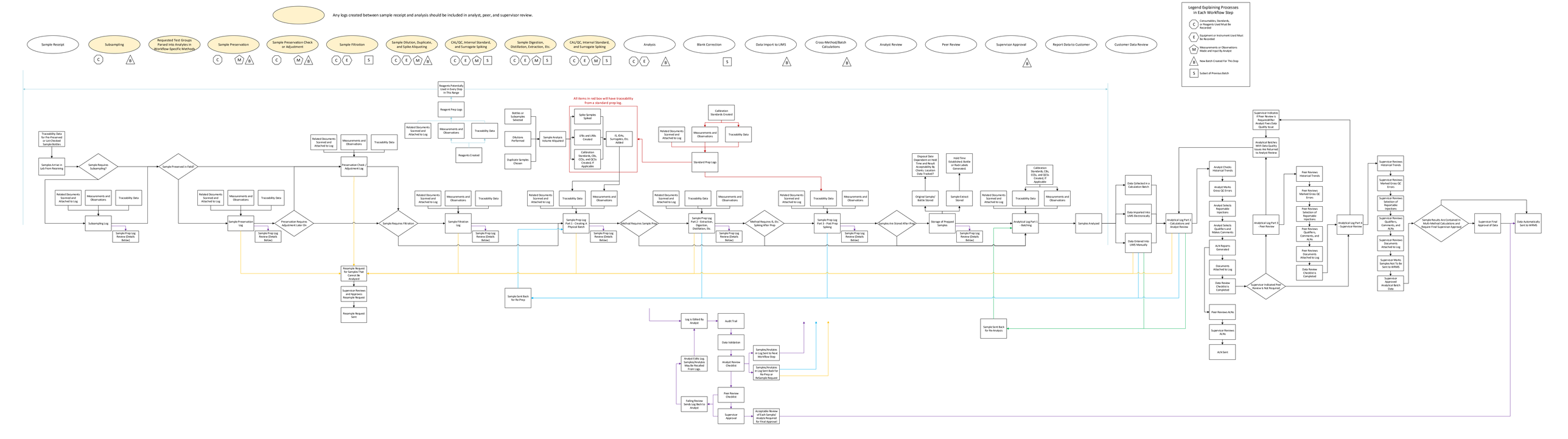
	Security, User Accounts, and Roles	**Scope**
1	User/role/group security is provided in the LIMS and configurable by an OCWD LIMS Administrator. OCWD's current LIMS has users in groups set up for the Lab, R&D, and Water Quality departments and those groups are used to provide context-specific information in some modules. A LIMS user may be in multiple roles, with each role allowing (or disallowing) access to certain modules or privileges to create, update, or delete certain records.	Required
2	LIMS must be able to apply security at the menu, file, function, record and/or field level	Required
3	User accounts can be inactivated/deactivated separately from the content of user lists found in search parameter fields or data filtering. For example, we may still want to search for data of somebody who left just a few months ago, but we should be able to remove a user who left 5 years ago.	Required
4	User accounts, roles, and security can all be configured by a LIMS administrator at OCWD.	Required
5	User login will be by SSO via Microsoft accounts. If not feasible, the LIMS' password complexity requirements and expirations are configurable.	Required

	Other LIMS Capabilities	**Scope**
1	LIMS displays workflow-related checklists or analyst instructions on-screen or via link	Desired
2	External files (like SOPs or manufacturer's user guides) may be uploaded to LIMS and linked or referenced in various workflows OR be stored in Ideagen and linked to LIMS via Ideagen document ID.	Required
3	LIMS will have the capability to include tooltips or other on-screen user help to guide users through LIMS' use.	Desired
4	The tooltips or user help guides can be customized by the LIMS Administrator.	Desired

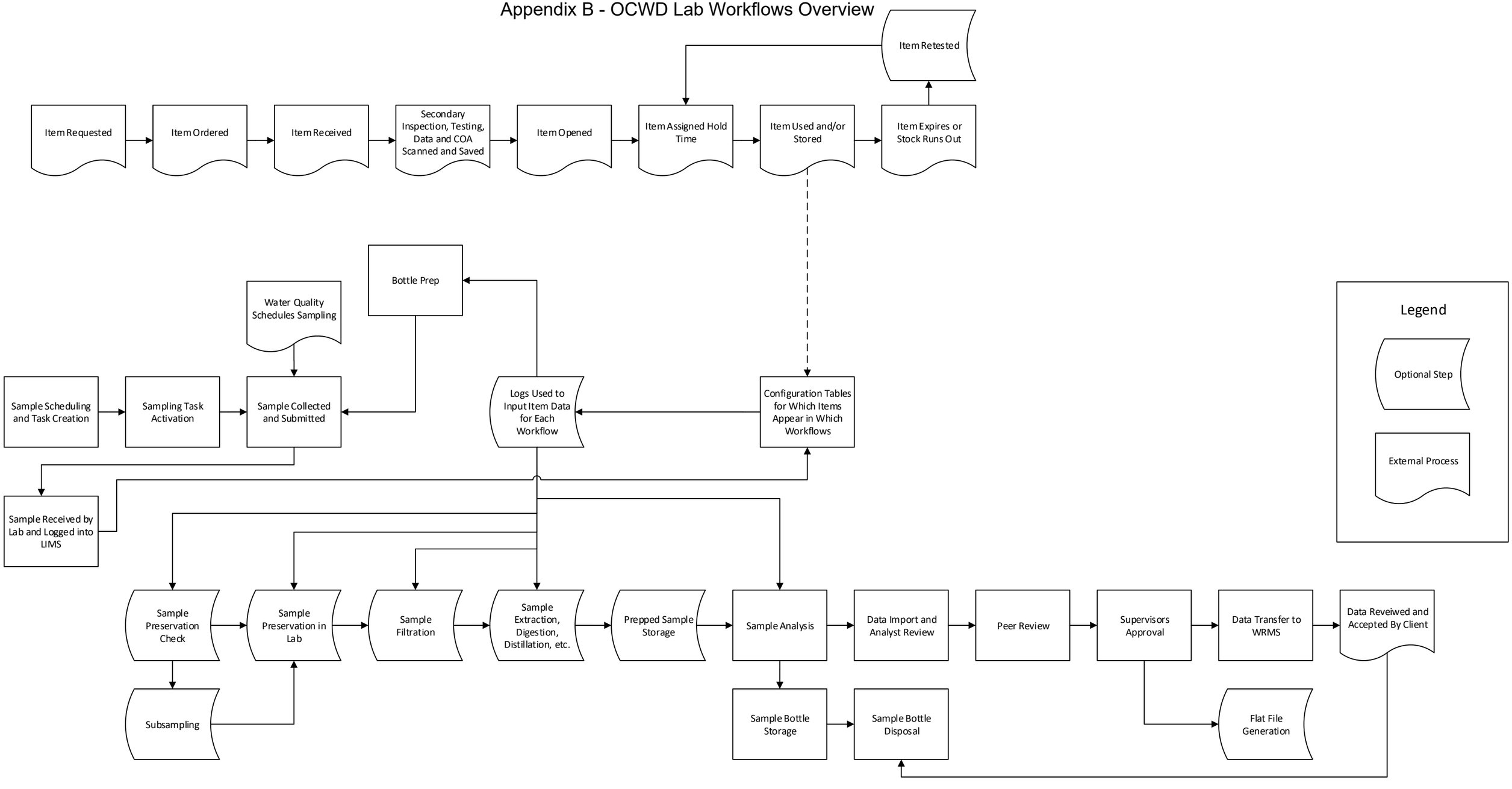
5	Overall, LIMS workflows should function with the minimal amount of mouse clicks. Multi-layer drill-downs should be avoided. Links should appear for the logical next step at the end of a step. Tabbing, arrows, and keyboard shortcuts should be utilized when entering data.	Required
6	Where data is presented as a table or spreadsheet, it can be keyword searched, sorted, and filtered	Required
7	Where data is presented as a table or spreadsheet, drag and drop, copy/paste, freeze pane, home/end, and page up/down functionality similar to Excel is available	Desired
8	Ideally, the LIMS could manage internal LIMS support requests from staff for the OCWD LIMS Administrator.	Desired
9	LIMS includes or can build on-demand QC charts and historical result summaries/graphs for comparisons to current results.	Required
10	LIMS can also generate QC charts on an automated schedule for periodic QA/QC review.	Required
11	LIMS will provide alerts to customers before final data reporting happens when lab staff indicate that a sample could not be analyzed or has quality issues and may need to be resampled	Required
12	LIMS provides alerts to lab staff and customers when results exceed configured alert limits	Required
13	LIMS improves the lab's ability to meet the extensive QC requirements for microbiology per Standard Methods section 9020. LIMS should keep a record of inventories by lot number, their QC checks, and set reminders and/or bar use of expired items.	Required
14	LIMS prevents concurrent editing of a record by multiple users, or if LIMS allows concurrent editing of a record by multiple users, a data conflict resolution mechanism is provided. The conflict resolution should alert both users and allow changes to be cancelled, combined, edited and/or overwritten.	Required
15	LIMS must either remain open indefinitely or save data before ending a session if a user walks away from an active session.	Required
16	LIMS will work on Windows laptops in use by laboratory staff. Laptops in use in the laboratory will be the primary means of data entry besides those that occur by electronic transfer.	Required

Appendix B - OCWD Lab Workflows Overview

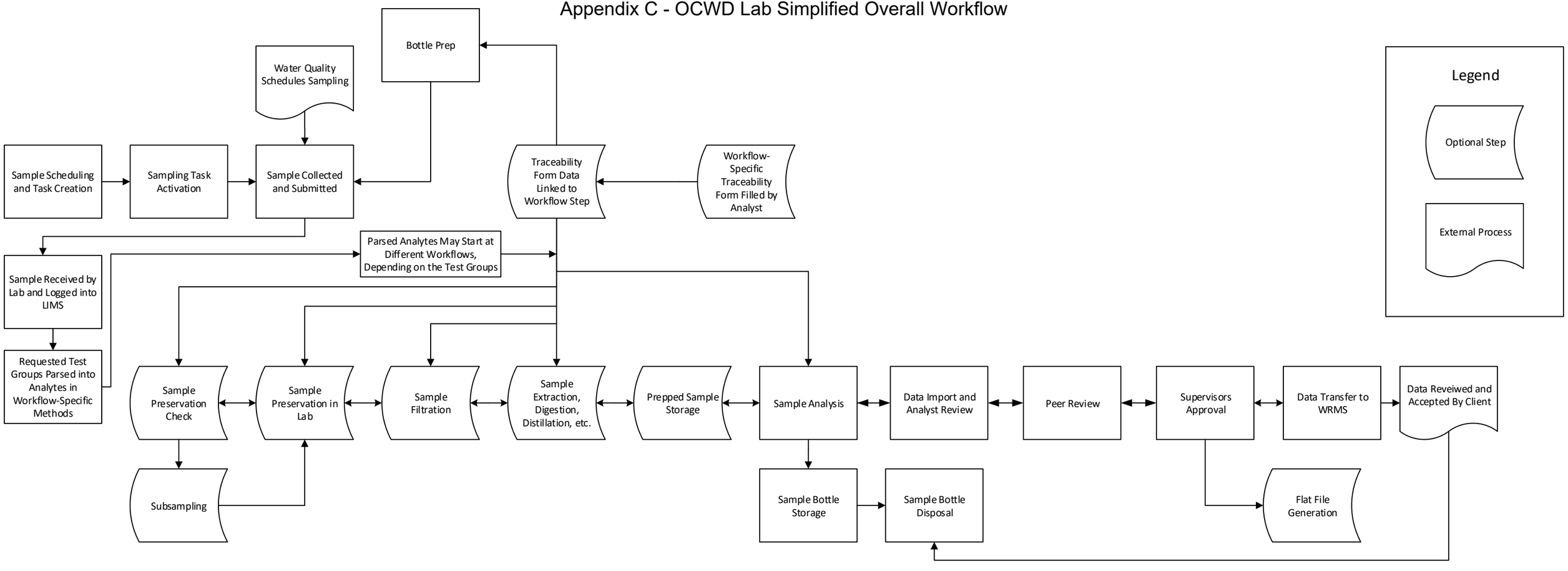
OCWD Laboratory LIMS-Related Workflows



Appendix B - OCWD Lab Workflows Overview



Appendix C - OCWD Lab Simplified Overall Workflow



OCWD Laboratory
Review and Approval of Sample Data Proposed Workflow for New LIMS

1) **Documentation and Analyst Review of Sample Preparation**
   a) Each step of sample preparation gets recorded in a log. Steps vary from method to method but include:
      i) Subsampling
      ii) Sample preservation
      iii) Sample preservation checks and preservation adjustments
      iv) Sample filtration
      v) Prep batch layout (sample bottles are selected along with calibration standards, QC samples, spikes, duplicates, and dilutions)
      vi) Reagent Preparation
      vii) Standard preparation
      viii) Spiking samples with standards (calibration standards, spikes, QC samples, IS, and surrogate)
      ix) Sample digestion, distillation, extraction, etc.
   b) Multiple prep steps may be included in a single log, but many methods will require multiple kinds of prep logs before samples are analyzed. This will depend on whether batches of samples are split or combined in logs and if we will split logs if the work is done by multiple analysts or takes place over multiple days.
   c) When a prep step involves a subset of an existing batch, it may be possible to include it in the existing log. For instance, if only some samples need filtration, a "Sample Filtered?" column could appear on the preservation log to indicate the sample was filtered after reservation. Any traceability or observations related to filtration could go on the preservation log.
   d) Analysts are provided with screens to batch samples into prep logs, enter or link traceability data, and record measurements, observations, and comments
   e) LIMS performs data validation, looking for samples out of hold time, results that are unacceptable (e.g. a pH that was not adjusted to within the correct range) or for the use of expired or unverified standards/reagents/equipment, or for analysts without a valid DOC.
   f) When work is concluded, analysts are provided with summary screen(s) to review batch contents, data/observations, traceability data, and any data validation failures.
   g) If a sample cannot be analyzed, due to factors such as field preservation errors, hold time exceedance, or lab error, Resample Request workflows may be launched
      i) These requests will be separate workflows that will immediately be sent to the supervisor to allow the data to be quickly and separately investigated so that the requests are sent out ASAP.
      ii) Ideally, some data validation failures would already be marked for a resample request.
   h) Analysts scan and/or upload any physical or external documents into LIMS that will be associated with the prep batch

i) Analysts make any edits necessary
j) Audit trails are kept on any changes made by analyst
k) Analysts mark any analytes or samples that need re-prep
l) For samples going forward with more prep or to analysis, LIMS performs data validation on any edits made.
m) Data review checklist is completed by analyst in LIMS and linked to the prep log (the current review checklist will be broken up into sections for each log in the workflow)
n) Completion of review checklist by analyst puts analytical batch in queue for peer review
o) Samples in the prep log will be available for the next step in the workflow. If errors are found during review, they will be flagged in whichever log or backlog they are currently in to be sent back, if needed.

2) Sending Analytes/Samples Back for Re-Prep or Re-Analysis

a) At any step in the sample life cycle, a sample, or analyte(s) from that sample, can be sent back for re-prep or re-analysis.
   i) Analysts must indicate which step analytes or samples need to go back to.
   ii) Comments are provided by the analyst to explain why analytes/samples are being sent back.
      (1) A picklist of frequently used reasons would be helpful.
      (2) Batch-tagging analytes/samples by different filtering parameters is a necessity.
   iii) Analytes/samples selected for re-prep or re-analysis then appear in the appropriate prep/analysis batching queue
   iv) Re-prep or re-analysis may require further sub-sampling or selection of a different sample bottle than the original prep/analysis.
b) If the current batch's sample prep or analysis is unfit for reporting data, it can be marked invalid for the entire batch or for selected analytes/samples.
   i) Those analytes/samples are still linked to the prep/analysis log to preserve the sequence of events, but that batch and its traceability can no longer be linked to the reported results for the analytes/samples that were sent back
   ii) Data validation of this prep log is no longer required for those analytes'/samples' result approval.
   iii) If a prep/analysis log is marked invalid and the analyte/sample is sent back multiple steps, the intervening steps will also be marked invalid.
c) If the current batch's sample prep or analysis is marked as still potentially viable for reporting data, then the result that is reported may come from the sent-back prep/analysis or the original prep/analysis.
   i) For instance, results often need confirmation. If the second analysis confirms the original result, the original result will be used.
   ii) If the original prep batch and analysis are still valid for an analyte, the result in the original analytical batch and its traceability will remain on hold until the re-analysis is completed.

iii) In the original analytical batch, the analytes/samples that have been sent back will be put on hold but will not keep the rest of the batch from being reviewed and approved.
iv) In the reanalysis analytical batch, the re-prepped analytes/samples need to be highlighted so that the analyst can evaluate both results (likely in a pop-up) and decide which to report.
v) ALNs cannot be sent until it is decided which result to report.

3) Sample Preparation Log Review and Data Validation

a) Prep Logs will not require review from peer analysts or supervisors.
b) If LIMS' data validation checks are passing and analytical review checklist is completed, analytes/samples in the prep batch may move to the next step in the sample life cycle.
c) LIMS will have a module to review prep logs and their associated data.
d) The prep log review module will allow a supervisor to override data validation errors and allow prep/analysis to proceed.

4) Post-Prep or Post-Analysis Sample Storage

a) Sample bottles will be stored after aliquots are taken for prep/analysis. Samples are disposed of after:
   i) Hold time has expired AND
   ii) Sample results have been approved by clients
b) Sample aliquots may be stored after prep while awaiting analysis or after analysis, if the method allows for re-analysis or dilution of prepped samples.
   i) Analysts may need to generate vial/bottle or sample rack labels for storage.

5) Analytical Data Import, Data Reduction, and Analyst Review

a) A data file from the instrument imported into LIMS or data is input directly by the analyst when there is not an instrument or the instrument cannot output a digital file.
b) Where there are multiple injections on the same sample, all data is imported. All data gets calculated and displayed.
c) LIMS performs calculations on imported data
   i) Factors such as dilution, sample volume, weight, and unit conversion are applied to results and reporting limit
   ii) Results are formatted with appropriate significant figures and rounding (banker's rounding rules, SM2130B Turbidity rounding rules, SM9223B MPN tables).
   iii) For field samples, LIMS algorithms select data to be reported when there are multiple injections per analyte/sample.
   iv) QC samples have % recovery and RPD calculated
   v) Any calibration evaluation that is practical for LIMS to import/calculate and display
   vi) IS and surrogates ranges and recoveries
   vii) Other method-specific calculations occur

viii) Automated qualifiers are added (e.g. 15-minute hold time violations)

d) Analysts review data, they should be able to see:
   i) Results for all injections with an indication of which result the LIMS' algorithms have selected for reporting
   ii) The results as raw values
   iii) Factors that will impact the result (like dilutions factor, reporting limit)
   iv) The result as it will be reported
   v) Quality control sample percent recoveries and RPDs
   vi) Calibration sample data and the results of calculations/evaluation of calibration data
   vii) IS and surrogate comparisons/recoveries
   viii) Results of any method-specific calculations
   ix) Traceability data relevant to the analytical batch
   x) Links back to logs from sample prep steps for any analyte/sample in the analytical batch.
e) Analysts will be able to select data to be reported when there are multiple injections per analyte/sample (potentially overriding LIMS' selection). The analyst may choose not to report any injections (if none are suitable and the reported result will come from another batch).
f) The analyst will be able to input any required data or add or link any traceability records needed as well as edit data where appropriate.
g) Comments may be entered at the analyte/injection, sample, or batch level.
h) An audit trail is kept for all data changes made by analysts
i) LIMS performs data validation
   i) Check that all results have records of all appropriate/necessary prep logs and related traceability data.
   ii) Analytical batch traceability data exists in LIMS as required in method configuration
   iii) From existing automated sample check report
      (1) Dissolved results that are significantly higher than total results or other result relationships are not as expected
      (2) Check that collect/received/prep/analysis times are sequential
      (3) Results are compared when the same analyte is run in multiple methods (including field results)
   iv) From existing exception report
      (1) The current result is 2SD outside of historical average (5 years)
      (2) Reporting limit exceeds state DLR
j) Analysts are provided with screens or reports to review data validation results.
k) Analysts may perform their own historical data checks using data searches
l) Analysts mark any analytes or samples that need re-prep or re-analysis and indicate which step they need to go back to. Comments are provided by the analyst to explain why. The analytes/samples that were sent back will appear in the appropriate prep or analytical queues

m) Analysts indicate any QC results that are gross failures and will not be part of ongoing QC monitoring (such as MDL calculations and QC charts)
n) For analyte results that will be reported, qualifiers or comments are added in LIMS to explain failing or unusual results.
o) LIMS performs data validation on any changes made and checks that qualifiers/comments are included for NA results or QC failures
p) Analysts will perform a final check at the data review page. Analysts must be able to filter out results that are not being reported for clarity.
q) Based on LIMS' data validation and analyst review, LIMS and/or analysts mark results that will launch an Action Level Notification or a Resample Request.
    i) Resample Requests will launch separate workflows that will immediately be sent to the supervisor to allow the data to be quickly and separately investigated and the Resample Requests sent out ASAP once supervisor-approved.
r) Analysts scan and/or upload any physical or external documents into LIMS that will be associated with the analytical batch
    i) Instrument reports/chromatograms included in data packets
    ii) Manual integrations performed (if needed) and documented
    iii) Analyst narratives or email exchanges explaining unusual occurrences
s) Data review checklist is completed by analyst in LIMS and linked to analytical batch
t) Completion of checklist by analyst puts analytical batch in queue for peer review
u) Completion of checklist will send all ALNs for results that were marked.

6) Peer Review of Analytical Batches

a) Peer analysts review analytical data, they should be able to see:
    i) Results for all injections with an indication of which result were ultimately selected for reporting – ability to filter out results that are not being reported is required
    ii) The results as raw values
    iii) Factors that will impact the result (like dilutions factor, reporting limit)
    iv) The result as it will be reported
    v) Quality control sample percent recoveries and RPDs
    vi) Calibration sample data
    vii) IS and surrogate comparisons/recoveries
    viii) Results of any method-specific calculations
    ix) Traceability data relevant to the analytical batch
    x) Data validation results
    xi) Qualifiers and comments
    xii) All attached documents
    xiii) Audit trail for any data changed by analyst
    xiv) A recap of ALN or Resample Request workflows launched from the analytical batch.
b) Data review checklist is completed by peer reviewer in LIMS and linked to analytical batch

c) If there are issues, the batch can be rejected with comments and sent back to the analyst review step. If it's a data error, the analyst will resolve the issue. If the sample must be pre-prepped or reanalyzed, the analyst will send the analytes/samples back. After issues are resolved by the analyst, the batch will go back to peer review.
    i) Since ALNs were already sent before the original peer review, it's important that the system does NOT re-send ALNs that were already sent the first time around.
d) Otherwise, when the checklist is completed, the batch goes to the supervisor approval queue.

7) Supervisor Review of Analytical Batches

a) The data packet is provided to the supervisor for review, they should be able to see:
    i) Results for all injections with an indication of which result were ultimately selected for reporting – ability to filter out results that are not being reported is required
    ii) The results as raw values
    iii) Factors that will impact the result (like dilutions factor, reporting limit)
    iv) The result as it will be reported
    v) Quality control sample percent recoveries and RPDs
    vi) Calibration sample data
    vii) IS and surrogate comparisons/recoveries
    viii) Results of any method-specific calculations
    ix) Traceability data relevant to the analytical batch
    x) Data validation results
    xi) Qualifiers and comments
    xii) All attached documents
    xiii) Audit trail for any data changed by analyst
    xiv) A recap of ALN or Resample Request workflows launched from the analytical batch.
    xv) The data review checklist(s) completed by analyst and peer reviewer
b) If there are issues, the batch can be rejected with comments and sent back to the analyst review step. If it's a data error, the analyst will resolve the issue. If the sample must be pre-prepped or reanalyzed, the analyst will send the analytes/samples back.
    i) Supervisors may choose whether the analytical batch needs to go through peer review again or come directly back to the supervisor.
    ii) Since ALNs were already sent before the original peer review, it's important that the system does NOT re-send ALNs that were already sent the first time around.
c) Any data that will not be reported to WRMS ***must*** be marked at this time (if not earlier) to prevent WRMS transfer.
d) If all is acceptable, the supervisor approves the analytical batch data.

8) Multi-Analyte Calculations

a) Many reported results come from calculations made by adding, subtracting, or factoring the results of multiple analytes.
b) If the calculation's constituents are in the same analytical method, they're likely to appear in the same analytical batch.
    i) A system for viewing calculated values in line with the other analytical results must be provided so that raw results and calculated values can be seen together to ensure calculations are correct.
c) If the calculation's constituents are in the same analytical method, but end up in a separate analytical batch, the system must be able to manage:
    i) Indicating in earlier analytical batches that calculated values are pending additional data
    ii) Indicating in later analytical batches that the results for all constituents are available and the calculation is ready for review.
    iii) A system for viewing calculated values in line with the other analytical results must be provided so that raw results and calculated values can be seen together to ensure calculations are correct.
    iv) It's possible that a single constituent may appear in multiple preps or analytical batches, LIMS must have a system to recognize those that are meant to be reported and select those for calculations.
d) If the calculation's constituents are in different analytical methods:
    i) Where calculations are simple, such as NO3-N or UV/TOC, handling of constituent analytes and calculations can work like they do in c) above for single-method calculations split into separate worksheets.
    ii) Where calculations are more complex, such as Ion Balance, LIMS should be able to create a calculation batch to display the calculated values along with the results of the constituents.
    iii) Calculation batches will be created by LIMS on-demand for any calculation where constituents are ready (for instance, all constituents are in a batch that has been through peer review).
    iv) Analysts will create these batches, and they will go through peer review and supervisor approval.
e) If calculations are not ready due to pending constituent results or lack of review/approval, then the constituent result does not qualify for final approval and reporting.

9) Final Approval of Results

a) Where analytes are not part of a multi-analyte calculation, final approval happens simultaneously with supervisor approval of their analytical batch.
b) Where analytes are part of a multi-analyte calculation, final approval happens when:
    i) The calculation batch receives supervisor approval, or
    ii) The analytical batch containing the last analyzed analyte(s) and the review of the calculated value receives supervisor approval.

10) Sending Data to WRMS

a) All results with final approval will automatically be sent to WRMS, unless marked not to be sent to WRMS
b) Dashboards or reports can be used to monitor any analytes that are not complete for a sample.

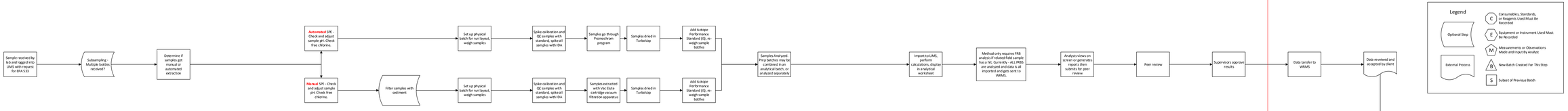
11) Data Storage

a) LIMS will be the lab's primary data storage system.
b) Ideagen will still be used for document control and distribution.
c) Paper records related to any lab activities documented in LIMS will be scanned and imported into LIMS as much as practical.
d) Electronic and scanned paper documents and records not related to LIMS activities will be stored in the lab's network drive or other electronic storage provided by the District.
e) Physical documents that cannot be practically scanned (such as posters, pamphlets, books, etc.) will be stored in the lab and managed in Ideagen.

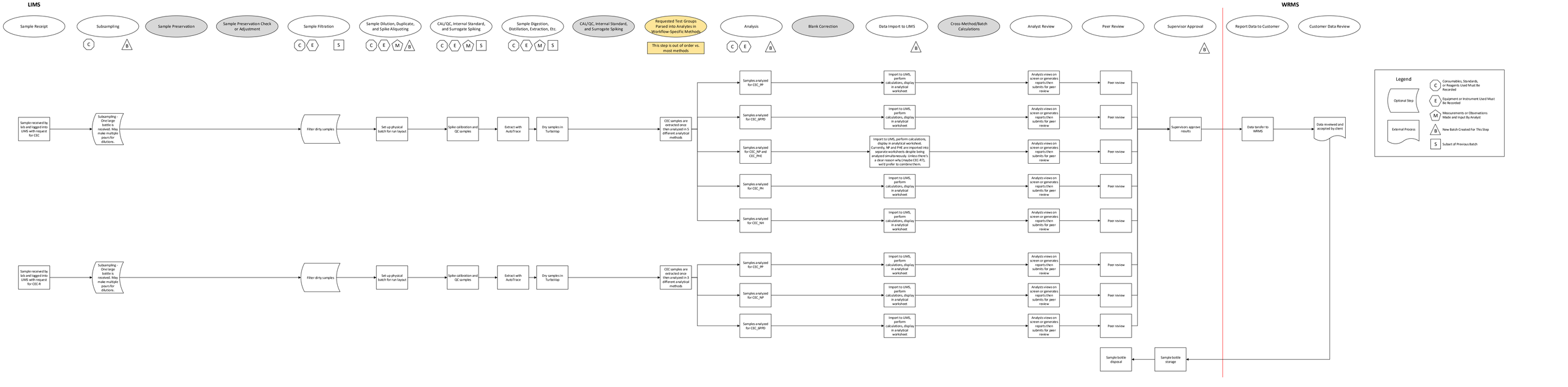
Appendix F - Method Workflow - EPA 533

LIMS

WRMS



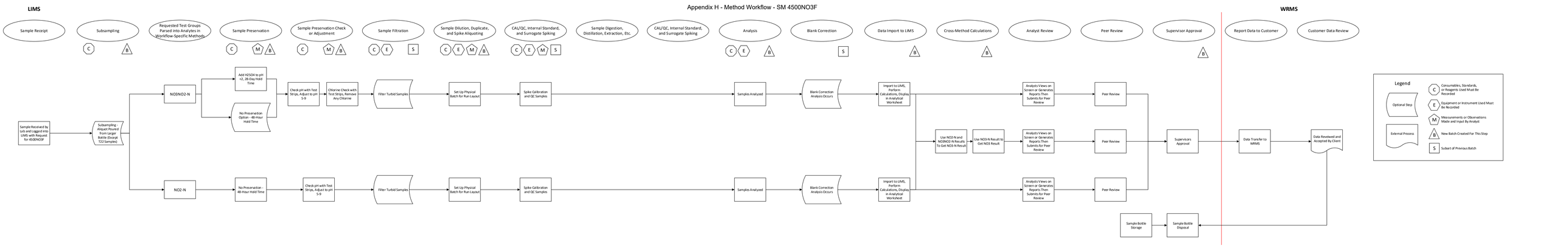
Appendix G - Method Workflow - CEC



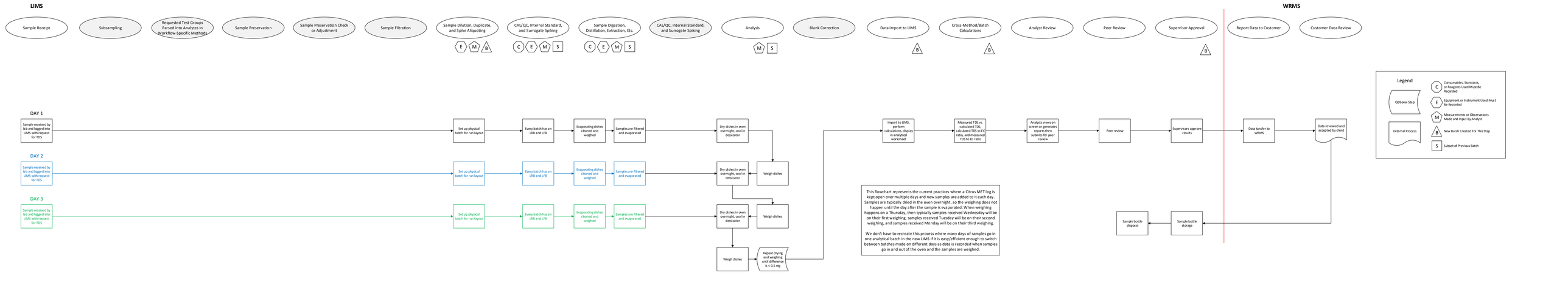
Appendix H - Method Workflow - SM 4500NO3F

LIMS

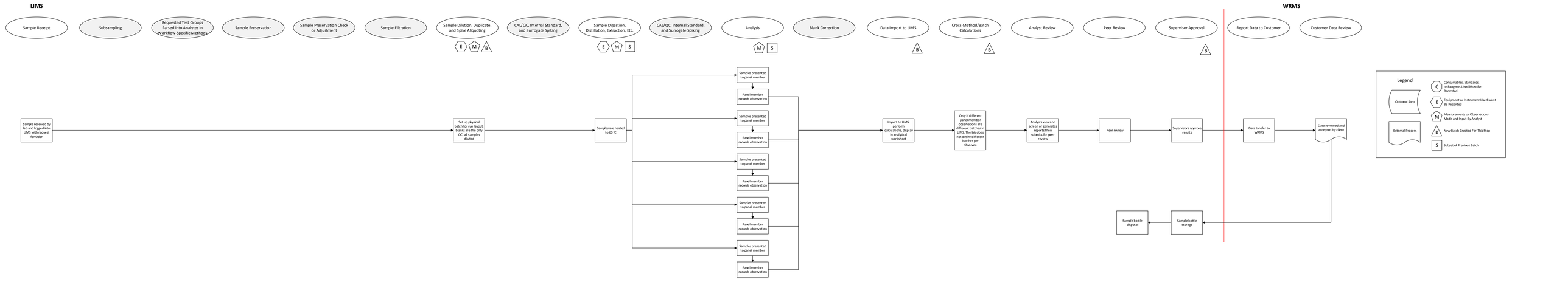
WRMS



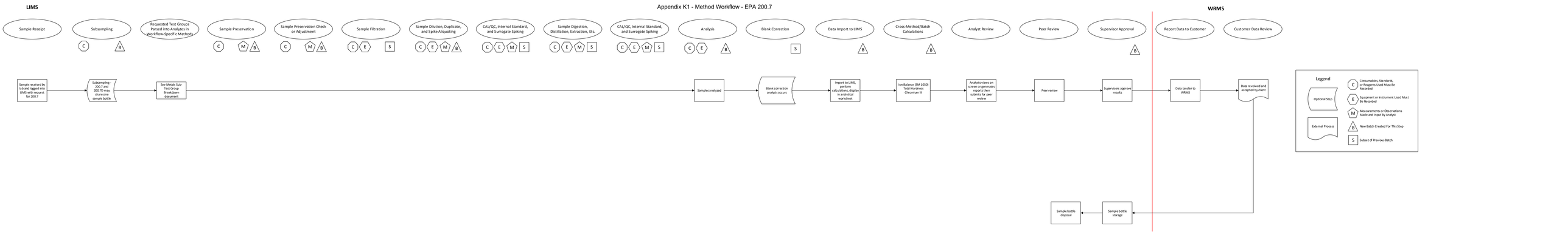
Appendix I - Method Workflow - SM2540C TDS



Appendix J - Method Workflow - SM2120B Odor

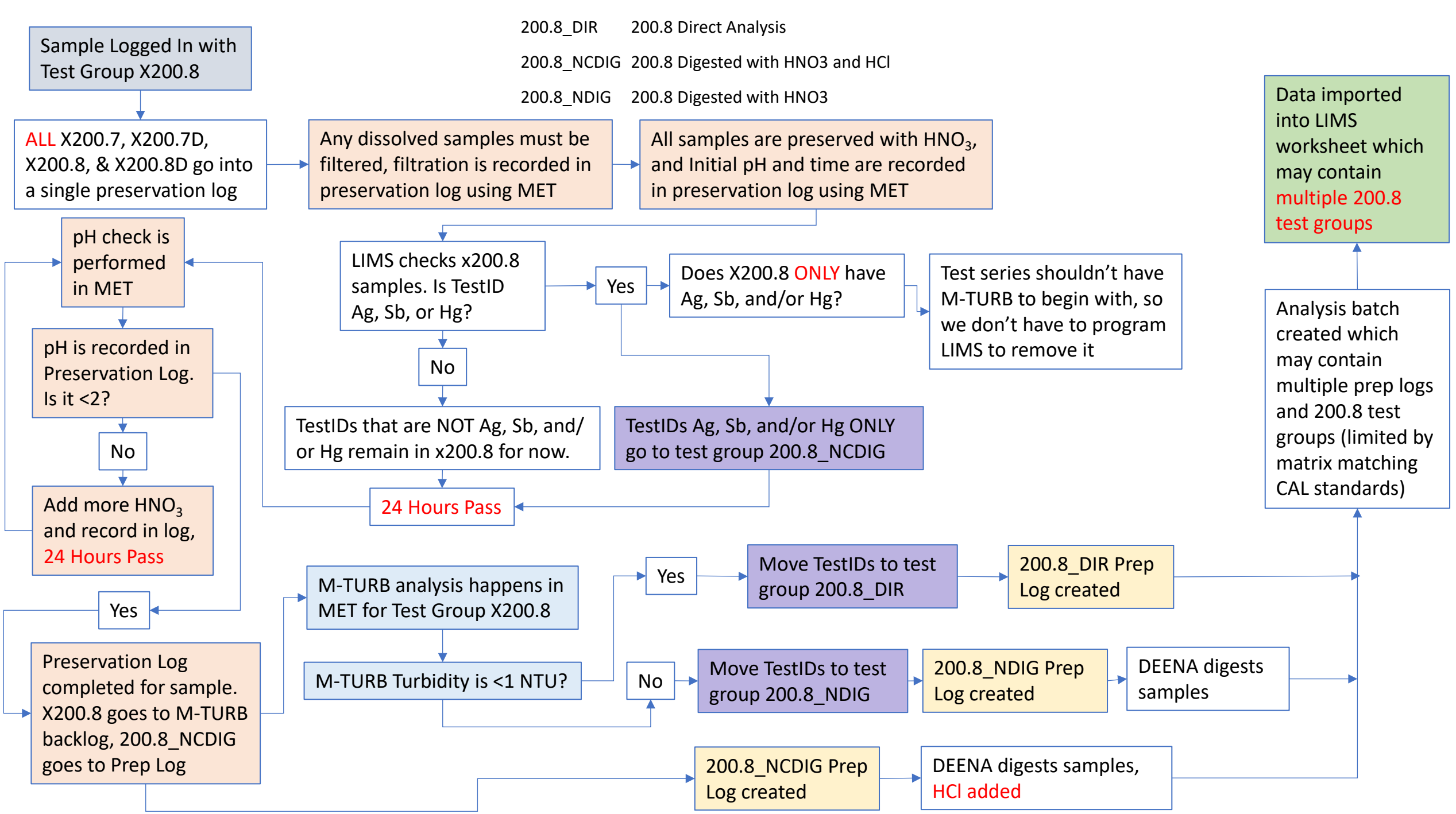


Appendix K1 - Method Workflow - EPA 200.7



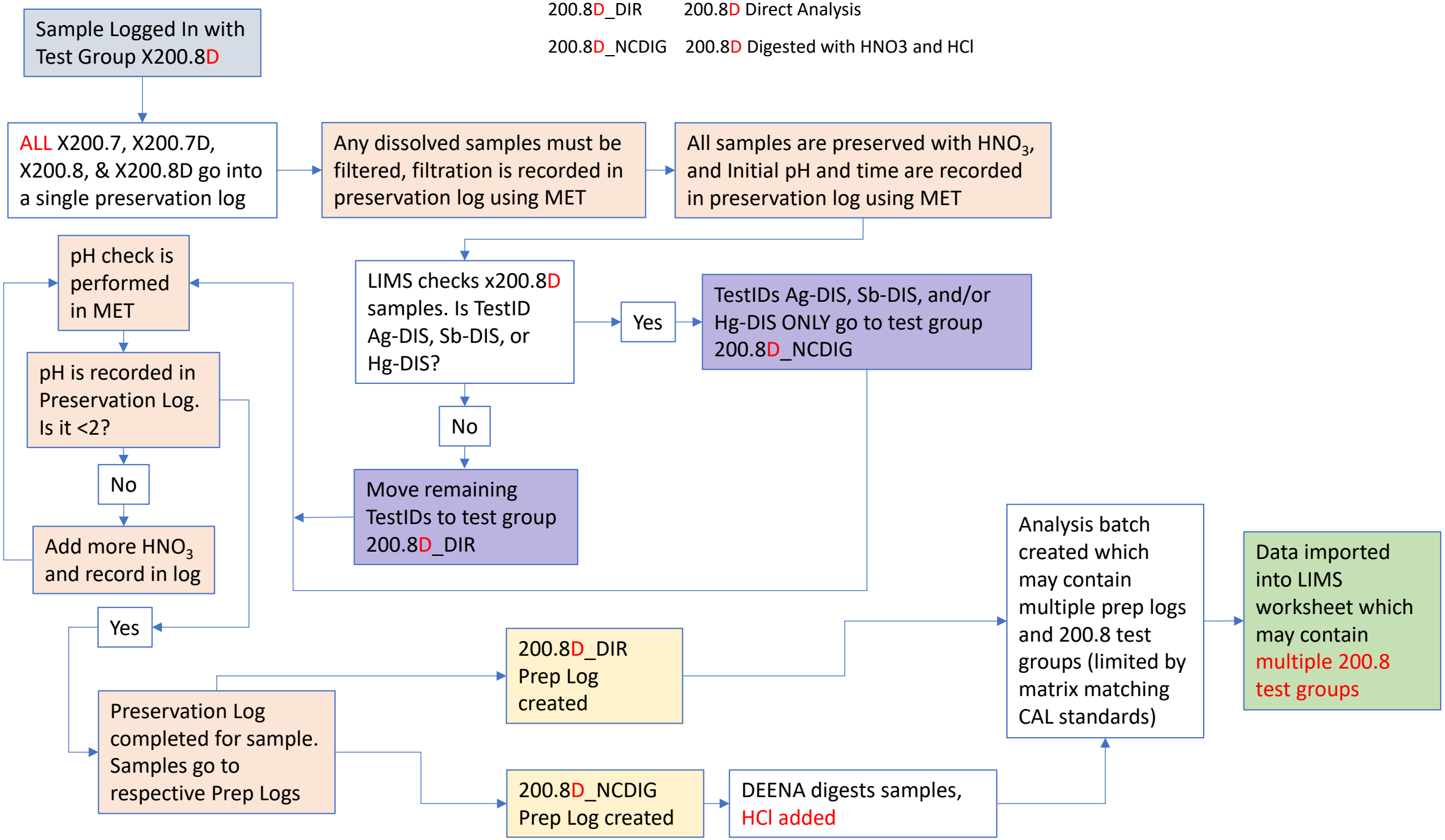
Metals Sub-Test Group Breakdown

- 200.8_DIR — 200.8 Direct Analysis
- 200.8_NCDIG — 200.8 Digested with HNO_3 and HCl
- 200.8_NDIG — 200.8 Digested with HNO_3
- 200.8D_DIR — 200.8D Direct Analysis
- 200.8D_NCDIG — 200.8D Digested with HNO_3 and HCl
- 200.7_DIR — 200.7 Direct Analysis
- 200.7_DIG — 200.7 Digested with HNO_3 and HCl
- 200.7D_DIR — 200.7D Direct Analysis
- 200.7U5 — 200.7 for UCMR5

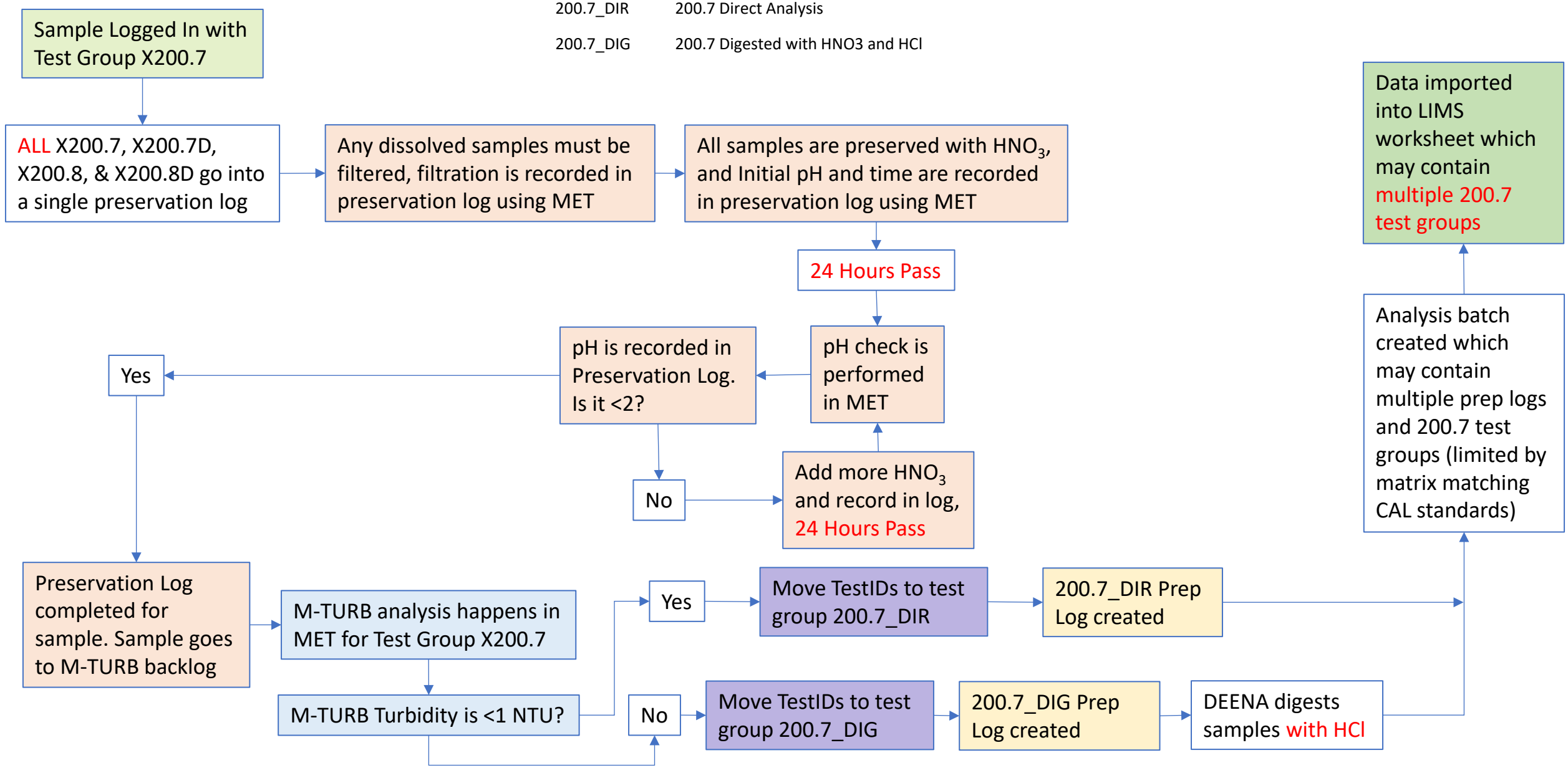

200.8_DIR 200.8 Direct Analysis
200.8_NCDIG 200.8 Digested with HNO3 and HCl
200.8_NDIG 200.8 Digested with HNO3
Sample Logged In with Test Group X200.8
ALL X200.7, X200.7D, X200.8, & X200.8D go into a single preservation log
Any dissolved samples must be filtered, filtration is recorded in preservation log using MET
All samples are preserved with HNO3, and Initial pH and time are recorded in preservation log using MET
Data imported into LIMS worksheet which may contain multiple 200.8 test groups
pH check is performed in MET
LIMS checks x200.8 samples. Is TestID Ag, Sb, or Hg?
Yes
Does X200.8 ONLY have Ag, Sb, and/or Hg?
Test series shouldn't have M-TURB to begin with, so we don't have to program LIMS to remove it
No
pH is recorded in Preservation Log. Is it <2?
No
TestIDs that are NOT Ag, Sb, and/ or Hg remain in x200.8 for now.
TestIDs Ag, Sb, and/or Hg ONLY go to test group 200.8_NCDIG
Add more HNO3 and record in log, 24 Hours Pass
24 Hours Pass
Analysis batch created which may contain multiple prep logs and 200.8 test groups (limited by matrix matching CAL standards)
Yes
M-TURB analysis happens in MET for Test Group X200.8
Yes
Move TestIDs to test group 200.8_DIR
200.8_DIR Prep Log created
Preservation Log completed for sample. X200.8 goes to M-TURB backlog, 200.8_NCDIG goes to Prep Log
M-TURB Turbidity is <1 NTU?
No
Move TestIDs to test group 200.8_NDIG
200.8_NDIG Prep Log created
DEENA digests samples
200.8_NCDIG Prep Log created
DEENA digests samples, HCl added

200.8D_DIR 200.8D Direct Analysis

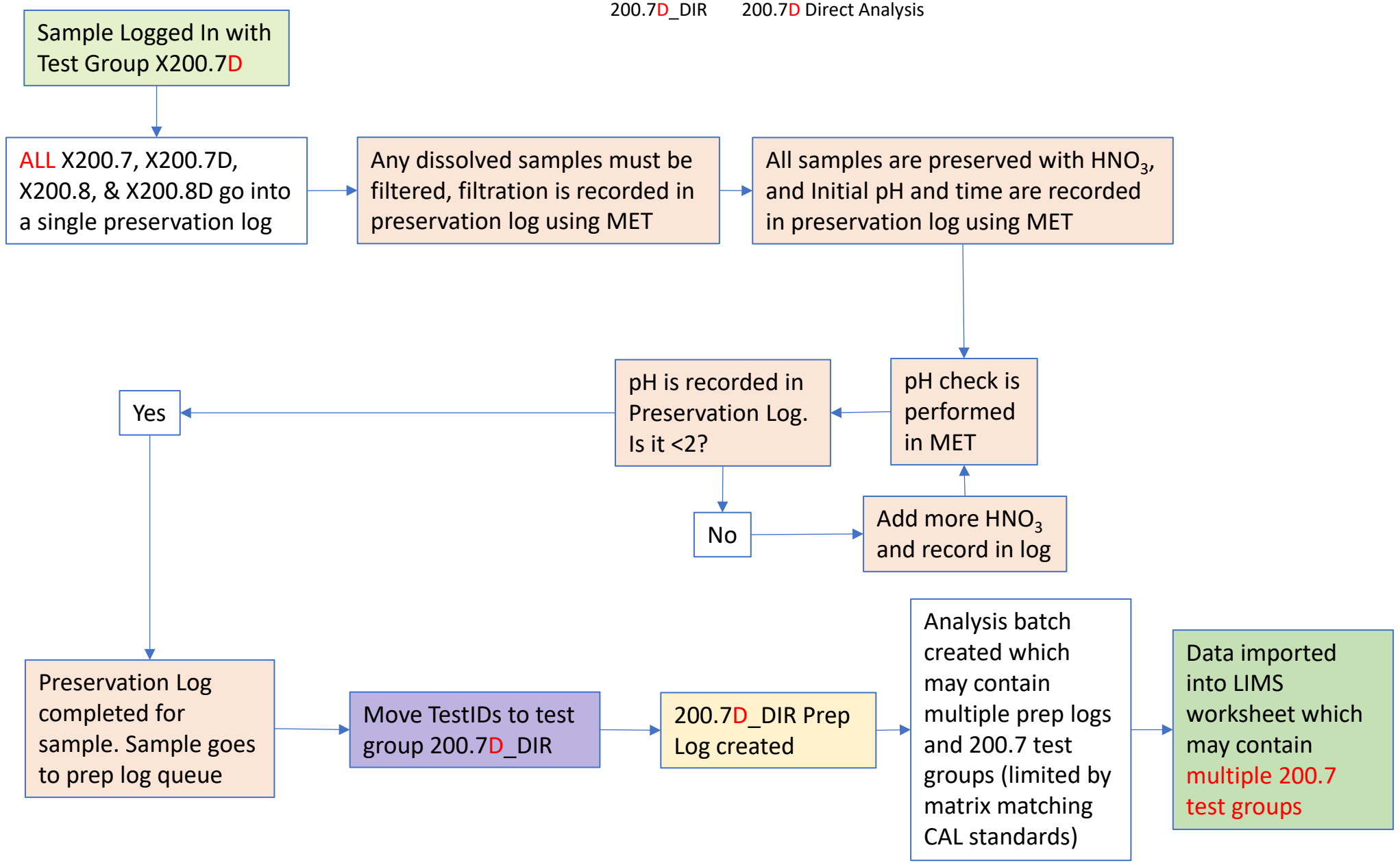
200.8D_NCDIG 200.8D Digested with HNO3 and HCl



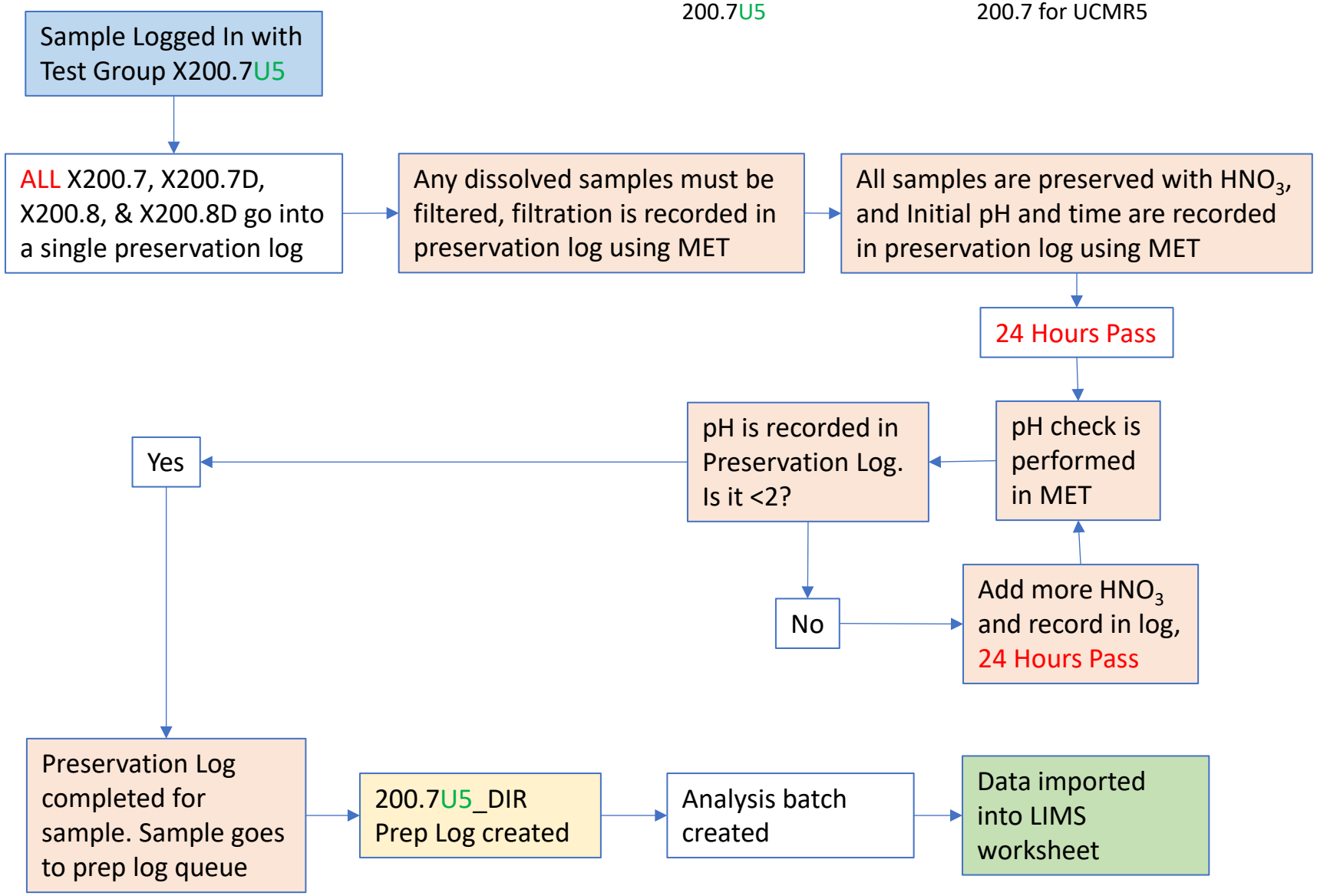
200.7_DIR	200.7 Direct Analysis
200.7_DIG	200.7 Digested with HNO3 and HCl



200.7D_DIR 200.7D Direct Analysis

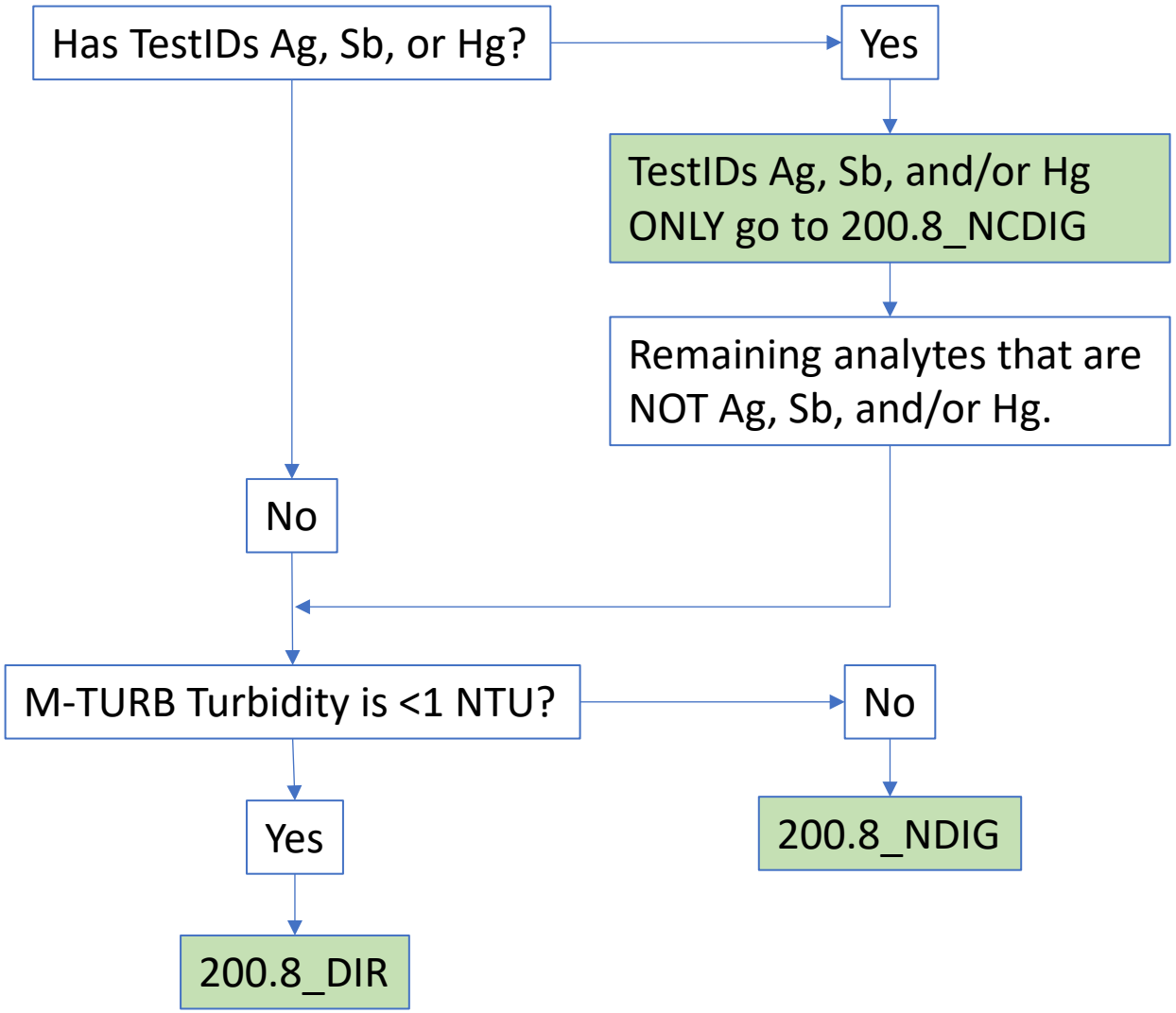


200.7U5 200.7 for UCMR5

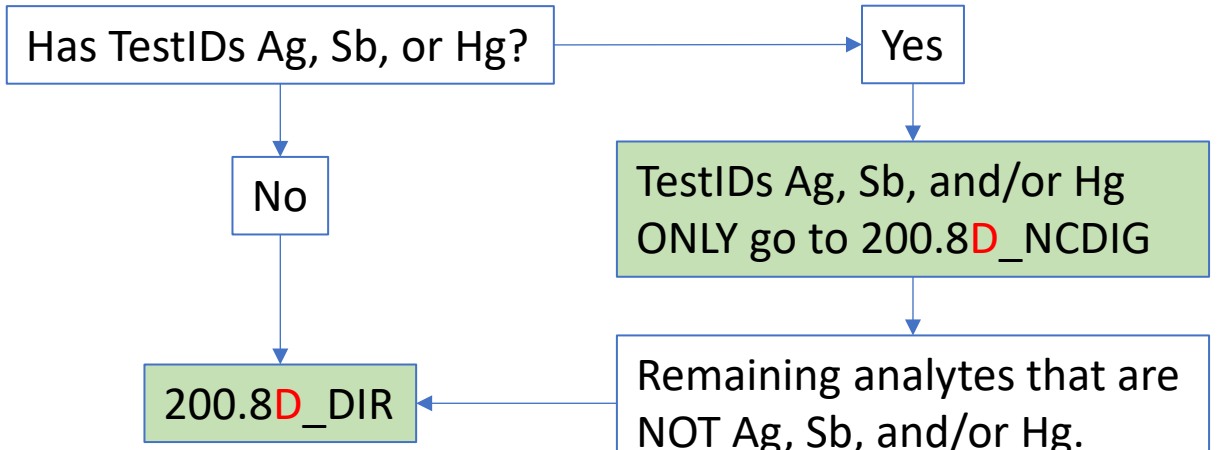


SIMPLIFIED FLOWCHARTS

X200.8 Samples



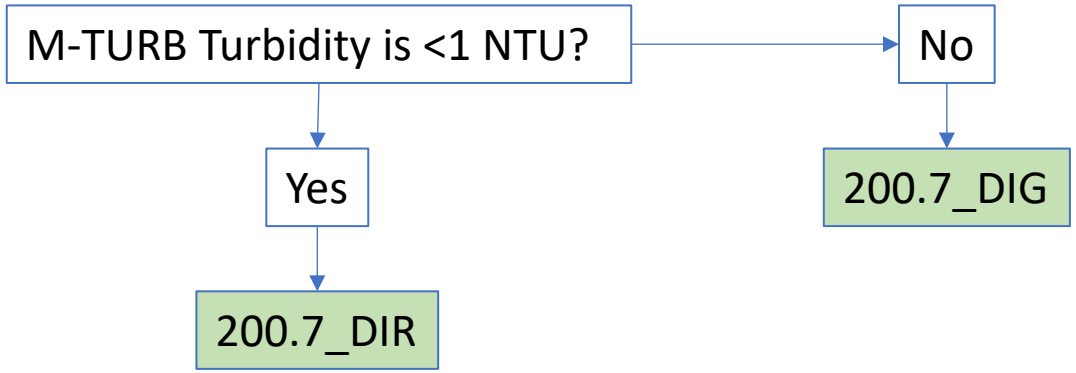
X200.8D Samples



200.8_DIR	200.8 Direct Analysis
200.8_NCDIG	200.8 Digested with HNO_3 and HCl
200.8_NDIG	200.8 Digested with HNO_3
200.8D_DIR	200.8D Direct Analysis
200.8D_NCDIG	200.8D Digested with HNO_3 and HCl

SIMPLIFIED FLOWCHARTS

X200.7 Samples



X200.7D Samples

200.7D_DIR

200.7_DIR	200.7 Direct Analysis
200.7_DIG	200.7 Digested with HNO_3 and HCl
200.7D_DIR	200.7D Direct Analysis

ORGANIC MAJOR EQUIPMENT LIST

Vendor/ Manufacturer	OCWD Equip. ID	Related Method	Instrument Type	Model
Agilent	7890B-1	EPA 552.2	GC ECD	7890B GC System
Agilent	7890B-1	EPA 552.2	GC ECD	7693A Autosampler
Agilent	7890B-1	EPA 552.2	GC ECD	7693A Autoinjector
Agilent	7890B-1	EPA 552.2	GC ECD	7693A Autoinjector
Agilent	7890B-2	EPA 504.1, 551.1-R	GC ECD	7890B GC System
Agilent	7890B-2	EPA 504.1, 551.1-R	GC ECD	7693A Autosampler
Agilent	7890B-2	EPA 504.1, 551.1-R	GC ECD	7693A Autoinjector
Agilent	7890B-2	EPA 504.1, 551.1-R	GC ECD	7693A Autoinjector
Waters	HPLC-4	EPA 531, 547, 549.2	HPLC	e2695 Separations Module
Waters	HPLC-4	EPA 531, 547, 549.2	HPLC-Post Column	Post-column Reaction Module
Waters	HPLC-4	EPA 531, 547, 549.2	HPLC-PDA Detector	2998 Photodiode Array Detector
Waters	HPLC-4	EPA 531, 547, 549.2	HPLC-F Detector	2475 Multi Wavelength Fluorescence Detector
Agilent	MS1	EPA 524.2	GCMS	7820A GC System
Agilent	MS1	EPA 524.2	GCMS	5977E MSD
Teledyne Tekmar	MS1	EPA 524.2	GCMS	Aquatek Liquid Vial Autosampler
Teledyne Tekmar	MS1	EPA 524.2	GCMS	Lumin P&T Concentrator
Agilent	MS2	EPA 524.2	GCMS	7820A GC System
Agilent	MS2	EPA 524.2	GCMS	5977B MSD
Teledyne Tekmar	MS2	EPA 524.2	GCMS	Aquatek 100
Teledyne Tekmar	MS2	EPA 524.2	GCMS	Lumin P&T Concentrator
Agilent	MS3_SV	EPA 522	GCMS	7890B GC System
Agilent	MS3_SV	EPA 522	GCMS	5977B MSD
Agilent	MS3_SV	EPA 522	GCMS	7693A Autoinjector
Agilent	MS3_SV	EPA 522	GCMS	7693A Autosampler
Agilent	MS4_SV	EPA 525.2	GCMS	7890B GC System
Agilent	MS4_SV	EPA 525.2	GCMS	5977B MSD
Agilent	MS4_SV	EPA 525.2	GCMS	7693A Autoinjector
Agilent	MS4_SV	EPA 525.2	GCMS	7693A Autosampler

Agilent	MS5	EPA 524.2	GCMS	8890 GC System
Agilent	MS5	EPA 524.2	GCMS	5977B GC/MSD
EST Analytical	MS5	EPA 524.2	GCMS	Centurion
EST Analytical	MS5	EPA 524.2	GCMS	Evolution P&T Concentrator
Agilent	MS6_SV	EPA 525.2	GCMS	8890 GC System
Agilent	MS6_SV	EPA 525.2	GCMS	5977B GC/MSD
Agilent	MS6_SV	EPA 525.2	GCMS	7693A Autoinjector
Agilent	MS6_SV	EPA 525.2	GCMS	7693A Autosampler
Agilent	MS7	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GCMS	8890 GC System
Agilent	MS7	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GCMS	5977C GC/MSD
EST Analytical	MS7	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GCMS	Centurion
EST Analytical	MS7	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GCMS	Evolution P&T Concentrator
Agilent	MS8	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GCMS	8890 GC System
Agilent	MS8	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GCMS	5977C GC/MSD
EST Analytical	MS8	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GC	Centurion
EST Analytical	MS8	1,4-DIOX, 1,4-DIOX-R, 123TCP, DWRL-TCP	GC	Evolution
Sciex	QTRAP 5500	EPA 537.1, CEC	LCMSMS	QTRAP5500
Agilent	QTRAP 5500	EPA 537.1, CEC	LCMSMS-LC	1260 Infinity Binary Pump
Agilent	QTRAP 6500+	EPA 533, 537.1	LCMSMS	QTRAP6500+
Agilent	QTRAP 6500+	EPA 533, 537.1	LCMSMS-LC	1260 Infinity Binary Pump
Sciex	QTRAP6500+A	EPA 533, 537.1	LCMSMS	QTRAP6500+
Agilent	QTRAP6500+A	EPA 533, 537.1	LCMSMS-LC	1260 Infinity II Binary Pump
Varian	S4E	1,4-DIOX, 1,4-DIOX-R, 123TCP	GCMS	450-GC
Varian	S4E	1,4-DIOX, 1,4-DIOX-R, 123TCP	GCMS	240-MS
EST Analytical	S4E	1,4-DIOX, 1,4-DIOX-R, 123TCP	GCMS	Centurion
EST Analytical	S4E	1,4-DIOX, 1,4-DIOX-R, 123TCP	GCMS	Evolution
Agilent	TQ1_SV	EEA 521.1, NDMA, Nitrosamines	GCMS	7890B GC System
Agilent	TQ1_SV	EEA 521.1, NDMA, Nitrosamines	GCMS	7010B GC/MS Triple Quad
Agilent	TQ1_SV	EEA 521.1, NDMA, Nitrosamines	GCMS	7693A Autosampler
Agilent	TQ1_SV	EEA 521.1, NDMA, Nitrosamines	GCMS	7693A Autoinjector

END OF LIST

INORGANIC MAJOR EQUIPMENT LIST

OCWD Equip. ID	Instrument	Vendor/ Manufacturer	Model	*Part Number	Related Method
COD 2	COD Colorimeter	YSI	910 COD Colorimeter	250910Y	SM 5220D
DA 1	Discrete Analyzer	SEAL	AQ300		EPA 365.1
EC Meter 1	EC Probe	Thermo Scientific	Orion 013005MD		SM 2510B
EC Meter 1	EC Meter	Thermo Scientific	Orion Star A212	STARA2126	SM 2510B
FIA 1	Flow Injection Analyzer	Lachat Instruments (Hach)	QuikChem 8500 Series 2	65454	SM 4500NO3F, Cyanide
FIA 2	Flow Injection Analyzer	OI Analytical	FS3700	330113	SM 4500NO3F, Cyanide
IC 1	IC	ThernoFisher Scientific	DIONEX INTEGRION RFIC	22153-60315	EPA 300.0
IC 2	AXP	ThermoFisher Scientific	DIONEX AXP	MX010PFT3ADX	EPA 218.6/7
IC 2	IC	Thermo Scientific	DIONEX ICS-6000 DC-6	22181-60040	EPA 218.6/7, EPA 300.1
IC-MS 1	AXP	Thermo Scientific	DIONEX AXP	MX010PFT3ADX	EPA 332.0
IC-MS 1	AXP	Thermo Scientific	DIONEX AXP	V10PFT03DX2	EPA 332.0
IC-MS 1	AXP-MS	Thermo Scientific	DIONEX AXP-MS	V10PFT02DX2	EPA 332.0
IC-MS 1	IC - Dual Channel	ThermoFisher Scientific	ICS-5000+DC	75940	EPA 332.0
IC-MS 1	MSQ Plus	ThermoFisher Scientific	Surveyor MSQ		EPA 332.0
ICP-MS 1	ICP-MS	Perkin Elmer	NexION 2000	N8150044	EPA 200.8
ICP-OES 1	ICP-OES	Agilent	2800 VDV		EPA 200.7
SFA 1	HR Colorimeter	SEAL	AA3		EPA 351.2
Spec 1	UV-VIS Spectrophotometer	Agilent	Cary 60 Spectrometer	G6860A	4500H2O2, SM 4500SiO2 C, SM 5910B, SM 5540C
Spec 2	UV-VIS Spectrophotometer	ThermoFisher Scientific	Thermo Evolution 201	840-210600	4500H2O2, SM 4500SiO2 C, SM 5910B, SM 5540C
Spec 3	UV-VIS Spectrophotometer	Agilent	Cary 60 Spectrometer	G6860A	4500H2O2, SM 5910B, SM 5540C
Spec 4	Spectrophotometer	HACH	DR3900	LPG440.99.00012	4500H2O2, SM 5220D, HACH 10242
H2O2 1	SAM H2O2 Detector	CHEMetrics	I-2016	I-2016	SM 4500H2O2 B
TOC 2	TOC Analyzer	GE Analytical Instruments	Sievers 5310C Lab		SM 5310C
TOC 3	TOC Analyzer	GE Analytical Instruments	Sievers M5310C Laboratory		SM 5310C
TOC 4	TOC Analyzer	Veolia	Sievers M3510C		SM 5310C
Turb 1	Nephelometer/Turbidimeter	HACH	2100AN Turbidimeter	47001-60	SM 2130B
Turb 3	Nephelometer/Turbidimeter	HACH	TL2350 Laboratory Turbidimeter	9680100	SM 2130B
Turb 4	Nephelometer/Turbidimeter	HACH	TL2350 Laboratory Turbidimeter	9680100	M-TURB, M-TURB-D

END OF LIST

Master List of Analytical Balances for OCWD

NOTE: This list includes balances from multiple departments for ease of coordination when scheduling annual balance calibrations. The OCWD Lab is not responsible for maintenance of equipment outside of the OCWD Lab department.

Count	Department	Model	Serial #	Location
1	Laboratory	Mettler Toledo XSR205DU	B929963336	ID 221-B1, Room #221 - Organic Extraction
2	Laboratory	Sartorius BCA32032I-1S	0043804301	ID 220-B3, Room #220 - Organic Extraction
3	Laboratory	Sartorius CPA3202S	24650383	ID 220-B2, Room #220 - Organic Extraction
4	Laboratory	Sartorius BP300S	61105111	ID 120-B2, Room #120 - Inorganic - Metal Prep
5	Laboratory	Sartorius QUINTIX224-1S	37850177	ID 120-B1, Room #120 - Inorganic - Metal Prep
6	Laboratory	Sartorius CPA225D	28350327	ID 125-B3, Room #125 - Inorganic Wet Chem
7	Laboratory	Sartorius CP3202S	18350575	ID 125-B1, Room #125 - Inorganic Wet Chem
8	Laboratory	Sartorius CP225D	18202441	ID 125-B2, Room #125 - Inorganic Wet Chem
9	Laboratory	Sartorius Entris 153-1S	33504816	ID 122-B1, Room #122 - Inorganic - Micro Lab
10	Operations	Sartorius BA210S	11203684	Operations Lab
11	R & D	Sartorius BL 610	14607358	R&D Lab Room #207
12	R & D	Sartorius 1801	3411119	R&D Lab Room #207
13	R & D	Mettler Toledo ML802E	B124151349	R&D Lab Room #208
14	R & D	A&D ER120N	3502009	R&D Lab Room #210
15	Research Center	Sartorius AC 210 P	11200399	Research Center Lab
16	Research Center	Sartorius QUINTIX 2102-1S	31550184	Research Center Lab
17	Field Research	Ohaus Voyager	G0531121063302	Field Research Front Lab Trailer
18	Field Research	Sartorius PT-6	38020230	Field Research Back Lab Trailer
19	Field Research	Sartorius TE4100	23250836	Field Research Back Lab Trailer
20	Field Research	Ohaus Voyager	G189112122639P	Field Research Back Lab Trailer
21	Field Research	Sartorius BP 610	81102871	Field Research Front Lab Trailer
22	Field Research	Tree Electronic Precision Balance	HRB1610673	Field Research Front Lab Trailer

Contact List:

- Laboratory (*Building C*) – Prem Parmar, Jeremy Davis, Denny Tran, Lily Sanchez, Carolyn Carroll
- Operations (*Building G*) – Cristhian Alvarez
- Research Center (*Near Building G*) – Han Gu
- R & D Lab (*Building L*) – Andrew Huang
- Field Research (*Anaheim, Field Headquarters*) – Meeta Pannu

Main OCWD Buildings: 18700 Ward Street, Fountain Valley, CA 92708
Field Headquarters: 4030 East La Palma, Anaheim CA 92807

OCWD Accredited Analytical Methods

FOA Subgroup	Analyte Code	FOA Analyte	LIMS Test	FOA Method	LIMS Test Group
101.050	003	Total Coliform (Enumeration)	TCOLIQ	SM 9223 B Colilert	9223B
101.050	004	E. coli (Enumeration)	ECOLIQ	SM 9223 B Colilert	
107.068	001	E. coli (Enumeration)	ECOLIQ	SM 9223 B-2016 Colilert	9223B
n/a	n/a	Total Coliform (Enumeration)	TCOLIQ	SM 9223 B-2016 Colilert	
102.030	003	Chloride	Cl	EPA 300.0	X1-300.0
102.030	005	Fluoride	F		
102.030	006	Nitrate (as N)	NO3-N		
102.030	009	Sulfate (as SO4)	SO4		
102.070	001	Phosphate,Ortho (as P)	PO4-P	EPA 365.1	365.1
n/a	n/a	Nitrate + Nitrite (as N)	NO3NO2-N	SM 4500-NO3 F-2000	4500NO3F
102.234	002	Nitrate (as N)	NO3-N		
n/a	n/a	Nitrite (as N)	NO2-N		
102.234	001	Nitrite (as N)	NO2-N	SM 4500-NO3 F-2000	4500NO3F
102.174	001	Chlorine, Free	FRCL2	SM 4500-Cl F-2000	4500CLF
102.174	002	Chlorine, Total Residual	TOTCL2		
102.565	001	Cyanide, Total	CN	Quickchem 10-204-00-1-X	X1-335.4
n/a	n/a	Color	APCOLR	SM 2120 B-2011	2120B
102.130	001	Specific Conductance	EC	SM 2510 B-1997	2510B
n/a	n/a	Corrosivity (Langelier Index)	CORROS	SM 2330 B-2005	CORROSIV
102.030	001	Bromide	Br	EPA 300.0	X1-300.0
102.040	001	Bromide	Br	EPA 300.1	300.1B
102.040	004	Bromate	BrO3		
102.040	003	Chlorate	CLO3	EPA 300.1	300.1B
102.040	002	Chlorite	CLO2		
102.270	001	Surfactants	MBAS	SM 5540C-2000	5540C
102.026	001	Calcium	Ca	EPA 200.7	X200.7
102.026	002	Magnesium	Mg		
102.026	003	Potassium	K		
102.026	005	Sodium	Na		
n/a	n/a	Calcium Hardness as CaCO3	CaHRD	SM 2340 B-1997	X200.7
102.120	001	Hardness (Calculation)	TOTHRD		
102.100	001	Alkalinity	TOTALK	SM 2320 B-1997	2320B
102.048	001	Perchlorate	CLO4	EPA 332.0	CLO4_MS
102.203	001	Hydrogen Ion (pH)	pH	SM 4500-H\+\ B-2000	4500H+B
n/a	n/a	Temperature	TEMP		
102.242	001	Silica	SIO2	SM 4500-SiO2 C-1997	4500SiOC
102.140	001	Residue, Filterable TDS	TDS	SM 2540 C-1997	2540C
n/a	n/a	Residue, Non-filterable TSS	SUSSOL	SM 2540 D-2011	2540D
102.263	001	Dissolved Organic Carbon (DOC)	DOC	SM 5310C-2000	5310C
102.262	001	Organic Carbon-Total (TOC)	TOC		
102.095	001	Turbidity	TURB	SM 2130B-2001	2130B
102.280	001	UV254	UVAB	SM 5910B-2011	5910B
103.311	001	Chromium VI (Hexavalent Chromiu	CrVI	EPA 218.7	X1-218.7

103.140	011	Mercury	Hg	EPA 200.8	X200.8
103.130	009	Iron	Fe	EPA 200.7	X200.7
103.130	018	Boron	B		
103.140	001	Aluminum	Al	EPA 200.8	X200.8
103.140	002	Antimony	Sb		
103.140	003	Arsenic	As		
103.140	004	Barium	Ba		
103.140	005	Beryllium	Be		
103.140	006	Cadmium	Cd		
103.140	007	Chromium	Cr		
103.140	008	Copper	Cu		
103.140	009	Lead	Pb		
103.140	010	Manganese	Mn		
n/a	n/a	Molybdenum	Mo		
103.140	012	Nickel	Ni		
103.140	013	Selenium	Se		
103.140	014	Silver	Ag		
103.140	015	Thallium	Tl		
103.140	016	Zinc	Zn		
103.140	018	Vanadium	V		
n/a	n/a	Uranium	U	EPA 200.8	X200.8
103.140	019	Strontium	Sr	EPA 200.8	X200.8
108.109	001	Chlorine, Total Residual	FRCL2	SM 4500-Cl F-2011	4500CLF
108.109	002	Chlorine, Free	TOTCL2		
108.337	001	Cyanide, Total	CN	Quickchem 10-204-00-1-X	X1-335.4
108.055	001	Color	APCOLR	SM 2120 B-2011	2120B
108.069	001	Specific Conductance	EC	SM 2510 B-2011	2510B
108.213	001	Chemical Oxygen Demand	CODUNF	SM 5220 D-2011	5520B
108.216	001	Organic Carbon-Total (TOC)	TOC	SM 5310 C-2014	5310B
108.225	001	Surfactants	MBAS	SM 5540 C-2011	5540B
108.017	001	Bromide	Br	EPA 300.0	X1-300.0
108.017	002	Chloride	Cl		
108.017	003	Fluoride	F		
108.017	008	Sulfate (as SO4)	SO4		
108.019	001	Bromide	Br	EPA 300.1	300.1B
108.063	001	Alkalinity	TOTALK	SM 2320 B-2011	2320B
108.013	001	Calcium	Ca	EPA 200.7	X200.7
108.013	002	Magnesium	Mg		
108.013	004	Potassium	K		
108.013	006	Sodium	Na		
108.065	001	Hardness (Calculation)	TOTHRD	SM 2340 B-2011	
n/a	n/a	Calcium Hardness (as CaCO3)	CaHRD	SM 2340 B-2011	
108.017	004	Nitrate (as N)	NO3-N	EPA 300.0	X1-300.0
108.025	001	Ammonia (as N)	NH3-N	EPA 350.1	350.1
108.035	001	Phosphate,Ortho (as P)	PO4-P	EPA 365.1	365.1
n/a	n/a	Nitrate as N	NO3-N	SM 4500-NO3- F-2016	4500NO3F
108.158	001	Nitrate-Nitrite (as N)	NO3NO2-N		

108.029	001	Kjeldahl Nitrogen,Total (as N)	TKN	EPA 351.2	351.2
108.158	002	Nitrite (as N)	NO2-N	SM 4500-NO3- F-2016	4500NO3F
108.137	001	Hydrogen Ion (pH)	pH	SM 4500-H+ B-2011	4500H+B
n/a	n/a	Temperature	TEMP		
108.184	001	Silica, Dissolved	SIO2	SM 4500-SiO2 C-2011	4500SIOC
108.072	001	Residue, Filterable TDS	TDS	SM 2540 C-2015	2540C
108.074	001	Residue, Non-filterable TSS	SUSSOL	SM 2540 D-2015	2540D
108.059	001	Turbidity	TURB	SM 2130 B-2011	2130B
109.629	001	Chromium VI (Hexavalent Chromiu	CrVI	EPA 218.6	X1-218.6
n/a	n/a	Mercury	Hg	EPA 200.8	X200.8
109.623	006	Boron	B	EPA 200.7	X200.7
109.623	011	Iron	Fe		
109.625	001	Aluminum	Al	EPA 200.8	X200.8
109.625	002	Antimony	Sb		
109.625	003	Arsenic	As		
109.625	004	Barium	Ba		
109.625	005	Beryllium	Be		
109.625	007	Cadmium	Cd		
109.625	008	Chromium	Cr		
109.625	009	Cobalt	Co		
109.625	010	Copper	Cu		
109.625	013	Lead	Pb		
109.625	014	Manganese	Mn		
109.625	015	Molybdenum	Mo		
109.625	016	Nickel	Ni		
109.625	017	Selenium	Se		
109.625	018	Silver	Ag		
109.625	019	Thallium	Tl		
109.625	022	Vanadium	V		
109.625	023	Zinc	Zn		
n/a	n/a	Strontium	Sr		
n/a	n/a	Uranium	U	EPA 200.8	X200.8
104.200	027	Ethyl tert-butyl Ether (ETBE)	ETBE	EPA 524.2	524
104.200	037	t-Butyl alcohol (2-Methyl-2-propano	TBA		
104.200	038	tert-Amyl Methyl Ether (TAME)	TAME		
104.200	046	Trichlorotrifluoroethane	Cl3F3E		
n/a	n/a	Diisopropyl ether	DIPE		
n/a	n/a	1-phenylpropane	PRPBNZ		
104.200	019	Carbon Disulfide	CS2	EPA 524.2	524
104.200	030	Methyl isobutyl ketone (MIBK, 4-M	MIBK		
104.030	001	1,2-Dibromoethane (EDB)	EDB	EPA 504.1	504
104.030	002	1,2-Dibromo-3-chloropropane (DBC	DBCP		
n/a	n/a	1,2,3-Trichloropropane (TCP)	123TCP		
104.200	201	Bromodichloromethane	CHBrCl	EPA 524.2	524
104.200	202	Bromoform	CHBr3		
104.200	203	Chloroform	CHCl3		
104.200	204	Dibromochloromethane (Chlorodibr	CHBr2C		

n/a	n/a	Total Trihalomethanes	TTHM		
104.200	001	1,1,1,2-Tetrachloroethane	1112PC		
104.200	003	1,1,2,2-Tetrachloroethane	1122PC		
104.200	005	1,1-Dichloroethane	11DCA		
104.200	007	1,2,3-Trichlorobenzene	123TCB		
104.200	009	1,2,4-Trimethylbenzene	124TCB		
104.200	013	1,3,5-Trimethylbenzene	135TMB		
104.200	014	1,3-Dichlorobenzene	13DCB		
104.200	016	2-Chlorotoluene	2CLTOL		
104.200	017	4-Chlorotoluene	4CLTOL		
104.200	023	cis-1,3-Dichloropropylene (cis 1,3 D	C13DCP		
104.200	024	Dichlorodifluoromethane	CCl2F2		
104.200	029	Isopropylbenzene	ISPBNZ		
104.200	031	Methyl tert-butyl Ether (MTBE)	MTBE		
104.200	032	Naphthalene	NAP		
104.200	033	n-Butylbenzene	nBBENZ		
104.200	034	N-propylbenzene	PRPBNZ		
104.200	035	sec-Butylbenzene	sBBENZ	EPA 524.2	524
104.200	039	tert-Butylbenzene	tBBENZ		
104.200	043	trans-1,3-Dichloropropylene (trans-1	t13DCP		
104.200	045	Trichlorofluoromethane	CCl3F		
n/a	n/a	Bromobenzene	BRBENZ		
n/a	n/a	Bromochloromethane	CH2BrC		
n/a	n/a	Bromomethane	CH3Br		
n/a	n/a	Chloroethane	ClETHA		
n/a	n/a	Chloromethane	CH3Cl		
n/a	n/a	Dibromomethane	CH2Br2		
n/a	n/a	1,3-Dichloropropane	13DCP		
n/a	n/a	2,2-Dichloropropane	22DCP		
n/a	n/a	1,1-Dichloropropene	11DCP		
n/a	n/a	Hexachlorobutadiene	HClBut		
n/a	n/a	4-Isopropyltoluene	4IPTOL		
n/a	n/a	1,2,3-Trichloropropane (TCP)	123TCP		
n/a	n/a	Acrolein	ACROLN		
n/a	n/a	Acrylonitrile	ACRYLO		
104.200	002	1,1,1-Trichloroethane	111TCA		
104.200	004	1,1,2-Trichloroethane	112TCA		
104.200	006	1,1-Dichloroethylene (1,1-Dichloroe	11DCE		
104.200	008	1,2,4-Trichlorobenzene	125TCB		
104.200	010	1,2-Dichlorobenzene	12DCB		
104.200	011	1,2-Dichloroethane (Ethylene Dichlo	12DCA		
104.200	012	1,2-Dichloropropane	12DCP		
104.200	015	1,4-Dichlorobenzene	14DCB		
104.200	018	Benzene	BENZ		
104.200	020	Carbon Tetrachloride	CCl4		
104.200	021	Chlorobenzene	CLBENZ		
104.200	022	cis-1,2-Dichloroethylene (cis 1,2 Dic	c12DCE	EPA 524.2	524

104.200	025	Dichloromethane (Methylene Chlori	CH2Cl2		
104.200	028	Ethylbenzene	EtBENZ		
104.200	036	Styrene	STYR		
104.200	040	Tetrachloroethylene (Tetrachloroeth	PCE		
104.200	041	Toluene	TOLU		
104.200	042	trans-1,2-Dichloroethylene (trans- 1,	t12DCE		
104.200	044	Trichloroethylene (Trichloroethene)	TCE		
104.200	047	Vinyl Chloride	VNYLCL		
104.200	102	m+p-Xylene	mp-XYL		
104.200	103	o-Xylene	o-XYL		
n/a	n/a	Total Xylenes	TOTALX		
104.036	001	1,2,3-Trichloropropane (TCP)	123TCP	DWRL-123TCP	DWRL-TCP
n/a	n/a	Trichloroacetonitrile	TCAN	EPA 551.1	551.1-R
n/a	n/a	Dichloroacetonitrile	DCAN		
n/a	n/a	1,1-Dichloro-2-Propanone	11DC2P		
n/a	n/a	Chloropicrin	ClPICR		
n/a	n/a	Bromochloroacetonitrile	BCAN		
n/a	n/a	1,1,1-Trichloro-2-Propanone	111TCP		
n/a	n/a	Dibromoacetonitrile	DBAN		
105.235	001	N-Nitrosodimethylamine	NDMA	EEA Agilent 521.1	EEA_521.1
105.235	002	N-Nitrosomethylethylamine	NMEA		
105.235	003	N-Nitrosodiethylamine	NDEA		
105.235	004	N-Nitroso-di-n-propylamine	NDPA		
105.235	005	N-Nitrosomorpholine	NMOR		
105.235	006	N-Nitrosopyrrolidine	NPYR		
105.235	007	N-Nitrosopiperidine	NPIP		
105.235	008	N-Nitroso-di-n-butylamine	NDBA		
105.902	001	N-Nitrosodimethylamine	NDMA	OCWD Nitrosamines	Nitrosamines
105.902	002	N-Nitrosomethylethylamine	NMEA		
105.902	003	N-Nitrosodiethylamine	NDEA		
n/a	n/a	N-Nitroso-di-n-propylamine	NDPA		
n/a	n/a	N-Nitroso-di-n-butylamine	NDBA		
n/a	n/a	N-Nitrosopiperidine	NPIP		
n/a	n/a	N-Nitrosopyrrolidine	NPYR		
105.902	004	N-Nitrosomorpholine	NMOR		
105.101	001	Carbofuran (Furadan)	CARBOF	EPA 531.2	531
105.101	002	Oxamyl	OXAMYL		
105.101	003	Aldicarb (Temik)	ALDI		
105.101	004	Aldicarb Sulfone	ALDISN		
105.101	005	Aldicarb Sulfoxide	ALDISX		
105.101	006	Carbaryl (Sevin)	CARBAR		
105.101	007	3-Hydroxycarbofuran	HYDCFR		
105.101	008	Methomyl (Lannate)	MTHOMY		
n/a	n/a	Baygon	BAYGON		
n/a	n/a	Methiocarb	MTHCRB		
105.090	006	Chlordane	n/a	EPA 525.2	n/a
n/a	n/a	Pentachlorophenol	PCP	CEC	CEC_PHE

105.090	023	Pentachlorophenol	PCP	EPA 525.2	525.2
n/a	n/a	Dacthal diacid (DCPA)	DCPA		
105.200	004	Dalapon	DALAPN	EPA 552.2	552
105.200	001	Bromoacetic Acid	MBAA	EPA 552.2	552
105.200	003	Chloroacetic Acid	MCAA		
105.200	005	Dibromoacetic Acid	DBAA		
105.200	006	Dichloroacetic Acid	DCAA		
105.200	007	Trichloroacetic Acid	TCAA		
n/a	n/a	Bromochloroacetic acid	BCAA		
n/a	n/a	Atrazine	ATRAZ	CEC	CEC_PP
n/a	n/a	Simazine	SIMAZ		
105.090	001	Alachlor	ALACHL	EPA 525.2	525.2
105.090	002	Aldrin	ALDRIN		
105.090	003	Atrazine	ATRAZ		
105.090	005	Butachlor	BUTACL		
105.090	007	Dieldrin	DIELDR		
105.090	013	Endrin	ENDRIN		
105.090	014	Heptachlor	HEPTA		
105.090	015	Heptachlor Epoxide	HEPEPX		
105.090	016	Hexachlorobenzene	HEXCLB		
105.090	017	Hexachlorocyclopentadiene	HClCPD		
105.090	018	Lindane (HCH-gamma)	LINDNE		
105.090	019	Methoxychlor	METHOX		
105.090	022	Molinate	MOLINT		
105.090	025	Simazine	SIMAZ		
105.090	028	Thiobencarb	THIO		
n/a	n/a	Metolachlor	METOCL		
n/a	n/a	Metribuzin	MTRBZN		
n/a	n/a	Propachlor	PROPCL		
n/a	n/a	Trifluralin	TRFLRN		
n/a	n/a	Bromacil	BROMAC		
n/a	n/a	Chlorothalonil	CLTNIL		
n/a	n/a	Diazinon	DIAZI		
n/a	n/a	Dimethoate	DMTH		
n/a	n/a	Prometryn	PROMET		
105.103	001	11-Chloroeicosafluoro-3-oxaundecar	11CLPF		
105.103	002	9-Chlorohexadecafluoro-3-oxanonan	9CLPF3		
105.103	003	4,8-Dioxa-3H-perfluorononanoic aci	ADONA		
105.103	004	Hexafluoropropylene Oxide Dimer A	HFPODA		
105.103	005	Nonafluoro-3,6-dioxaheptanoic acid	NFDHA		
105.103	006	Perfluorobutanoic Acid (PFBA)	PFBA		
105.103	007	Perfluorobutane Sulfonic Acid (PFB	PFBS		
105.103	008	1H,1H, 2H, 2H-Perfluorodecane sul	8:2FTS		
105.103	009	Perfluorodecanoic Acid (PFDA)	PFDA		
105.103	010	Perfluorododecanoic Acid (PFDoA)	PFDoA		
105.103	011	Perfluoro(2-ethoxyethane) sulfonic a	PFEESA		
105.103	012	Perfluoroheptane Sulfonic Acid (PFI	PFHpS		

105.103	013	Perfluoroheptanoic Acid (PFHpA)	PFHpA	EPA 533	533
105.103	014	1H,1H, 2H, 2H-Perfluorohexane sul	4:2FTS		
105.103	015	Perfluorohexane Sulfonic Acid (PFH	PFHxS		
105.103	016	Perfluorohexanoic Acid (PFHxA)	PFHxA		
105.103	017	Perfluoro-3-methoxypropanoic acid (	PFMPA		
105.103	018	Perfluoro-4-methoxybutanoic acid (P	PFMBA		
105.103	019	Perfluorononanoic Acid (PFNA)	PFNA		
105.103	020	1H,1H, 2H, 2H-Perfluorooctane sulf	6:2FTS		
105.103	021	Perfluorooctane Sulfonic Acid (PFO	PFOS		
105.103	022	Perfluorooctanoic Acid (PFOA)	PFOA		
105.103	023	Perfluoropentanoic Acid (PFPeA)	PFPeA		
105.103	024	Perfluoropentane Sulfonic Acid (PFI	PFPeS		
105.103	025	Perfluoroundecanoic Acid (PFUnDA	PFUnA		
105.106	001	11-Chloroeicosafluoro-3-oxaundecar	11CLPF	EPA 537.1	537.1
105.106	002	9-Chlorohexadecafluoro-3-oxanonan	9CLPF3		
105.106	003	4,8-Dioxa-3H-perfluorononanoic aci	ADONA		
105.106	004	Hexafluoropropylene Oxide Dimer A	HFPODA		
105.106	005	N-ethyl perfluorooctanesulfonamido	EtFOSA		
105.106	006	N-methyl perfluorooctanesulfonamic	MeFOSA		
105.106	007	Perfluorobutane Sulfonic Acid (PFB	PFBS		
105.106	008	Perfluorodecanoic Acid (PFDA)	PFDA		
105.106	009	Perfluorododecanoic Acid (PFDoA)	PFDoA		
105.106	010	Perfluoroheptanoic Acid (PFHpA)	PFHpA		
105.106	011	Perfluorohexane Sulfonic Acid (PFH	PFHxS		
105.106	012	Perfluorohexanoic Acid (PFHxA)	PFHxA		
105.106	013	Perfluorononanoic Acid (PFNA)	PFNA		
105.106	014	Perfluorooctanoic Acid (PFOA)	PFOA		
105.106	015	Perfluorooctane Sulfonic Acid (PFO	PFOS		
105.106	016	Perfluorotetradecanoic Acid (PFTA)	PFTA		
105.106	017	Perfluorotridecanoic Acid (PFTrDA	PFTrDA		
105.106	018	Perfluoroundecanoic Acid (PFUnDA	PFUnA		
105.090	004	Benzo(a)pyrene	BaPYRE	EPA 525.2	525.2
105.090	008	Di(2-ethylhexyl) Adipate	DEHA		
105.090	009	Di(2-ethylhexyl) Phthalate	DEHP		
n/a	n/a	Acenaphthene	ACNAPE		
n/a	n/a	Acenapthylene	ACENAP		
n/a	n/a	Anthracene	ANTHRA		
n/a	n/a	Benzo(a)anthracene	BaANTH		
n/a	n/a	Benzo(b)fluoranthene	BbFLUR		
n/a	n/a	Benzo(k)fluoranthene	BkFLUR		
n/a	n/a	Benzo(g,h,i)perylene	BghiPR		
n/a	n/a	Butyl benzyl phthalate	BBP		
n/a	n/a	Chrysene	CHRYS		
n/a	n/a	Di-n-butylphthalate	DnBP		
n/a	n/a	Dibenz(a,h)anthracene	DBahAN		
n/a	n/a	Diethylphthalate	DEP		
n/a	n/a	Dimethylphthalate	DMP		

n/a	n/a	Fluoranthene	FLANTH		
n/a	n/a	Fluorene	FLUOR		
n/a	n/a	Indeno(1,2,3-cd)pyrene	INDPYR		
n/a	n/a	Napthalene	NAP		
n/a	n/a	Di-n-octylphthalate	DnOP		
n/a	n/a	Phenanthrene	PHENAN		
n/a	n/a	Pyrene	PYRENE		
105.120	001	Glyphosate	GLYPHO	EPA 547	547
105.150	001	Diquat	DIQUAT	EPA 549.2	549
n/a	n/a	Paraquat	PARAQT		
105.085	001	1,4-Dioxane	14DIOX	EPA 522	522
105.901	001	1,4-Dioxane	14DIOX	OCWD 14DIOX	14DIOX

Appendix N

List of Active Analytical Methods in the Laboratory

See the *OCWD Lab FOA and PT List* for all OCWD Laboratory methods and analytes that are accredited by California ELAP or part of the annual Proficiency Test. The laboratory also performs analysis or calculations using these methods:

Section	Method ID	Method Name
Inorganic	1030E	Ion Balance
Inorganic	AI	Aggressive Index
Inorganic	CORROS	Corrosivity
Inorganic	SAR	Sodium Adsorption Ratio
Inorganic	2150B	Odor
Inorganic	4500H_2O_2-B	Hydrogen Peroxide (H_2O_2)
Inorganic	5910B	Ultraviolet Percent Transmittance (UV %T)
Organic	14DIOX	OCWD 1,4-dioxane
Organic	CEC_NH	Chemicals of Emerging Concern (CEC) - Negative Hormones
Organic	CEC_NP	Chemicals of Emerging Concern (CEC) - Negative Pharma
Organic	CEC_PH	Chemicals of Emerging Concern (CEC) - Positive Hormones
Organic	CEC_PHE	Chemicals of Emerging Concern (CEC) - Negative Phenol
Organic	CEC_PP	Chemicals of Emerging Concern (CEC) - Positive Pharma
Organic	Nitrosamines	OCWD Nitrosamines

APPENDIX O

OCWD LIMS Reports and Data Searches

This list describes the reports and data searches attached to this RFP. These were all generated by our current LIMS. The OCWD Laboratory ***DOES NOT*** wish to faithfully reproduce these reports in the new LIMS. It is our hope that many can be combined or that they can be replaced entirely by on-screen data displays, better data storage and validation, and better calculations in the new LIMS.

These reports still serve as a useful example of the OCWD Laboratory's data, calculation, and recordkeeping requirements. Despite the many reports attached, the Laboratory still utilizes Excel spreadsheets and hand calculations in some cases where we haven't yet been able to incorporate the specific data needs for some methods into the current LIMS.

Section O-1 Data Packet Reports

The OCWD Laboratory typically summarizes analytical data in data packets. These will include records from sample preparation, raw data reports from the instrument, analyst notes and comments, records of corrective actions, LIMS-generated reports of results, QC samples, method-specific calculations, and data validation. Data packets have fairly recently been converted to an all-electronic format and are no longer physically passed around for review and approval. Still, much of the data review still occurs via viewing these files outside of the current LIMS.

#	Report	Description
1	OCWD Data Packet Cover Page Report.pdf	This cover sheet allows for electronic comments and review/approval stamps in Adobe. However, marking up this sheet is redundant because review and approval also happens in the laboratory's current LIMS. The laboratory still relies on sheets like this because the current LIMS cannot easily summarize the worksheet's status.
2	OCWD QC Samples Recovery Report.pdf	A report summarizing percent recovery of QC samples in an analytical batch with pass/fail indicators.
3	OCWD QC Samples RPD Report.pdf	A report summarizing percent RPD of QC duplicate samples in an analytical batch with pass/fail indicators.
4	OCWD Field Duplicate RPD Report.pdf	A report summarizing percent RPD of duplicate samples collected in the field and logged in as separate samples from the "normal" field sample. A separate report is needed because the field samples and QC samples are stored and treated separately in the current LIMS, so a field sample treated as a QC sample required special programming.
5	OCWD Calibration Standard Report.pdf	A traceability record made in Citrus MET, the laboratory's ELN. The laboratory considered expanding this tool to collect traceability data for all methods, but instead the laboratory decided to find a new LIMS.

6	OCWD Data Review Report.pdf	A report summarizing all the field sample data results in an analytical batch with the last 5 historical data results displayed for a quick trending check of the current result.
7	OCWD Final Data Report.pdf	Another report summarizing all the field sample data results in an analytical batch. Other than being constrained to fitting on an 8.5 x 11 sheet of paper when the laboratory used physical data packets, there may not be a reason why reports 06 and 07 were not combined.
8	OCWD QC Exception Report.pdf	A report that checks Inorganic laboratory data against a set of rules that are detailed at the bottom of the report.
9	OCWD Automated Sample Check Report.pdf	Another report that checks Inorganic laboratory data. This report focuses more on comparing cross-analyte or cross-method calculations. This specific example shows laboratory pH samples being compared to field pH results.
10	OCWD Internal Standard Report vs Avg ICALs.pdf	A report comparing internal standard response against the average of initial calibration standards. The laboratory has a few different IS reports based on different requirements in the reference methods.
11	OCWD Internal Standard Report vs CB.pdf	A report comparing internal standard response against the last calibration blank.
12	OCWD Internal Standard Report vs Last CCS.pdf	A report comparing internal standard response against the last calibration check standard.
13	OCWD Internal Standard Report for CEC.pdf	A report comparing internal standard response for an LC-MS/MS method that analyzes several contaminants of emerging concern. This report is separate mainly because it was formatted differently for efficiency.
14	OCWD Isotope Dilution Analog Report.pdf	A report displaying the recovery of the isotopic dilution analog for EPA 533.
15	OCWD Surrogate Recovery Report.pdf	A report displaying the recovery of surrogate standards added to all samples in some methods.
16	OCWD IDBP - PGF and Surrogate Recovery Report.pdf	A report that checks the peak gaussian factor of the initial calibration check standard and surrogate standard recovery for EPA 300.1.
17	OCWD Isotope Performance Standard Report.pdf	A report displaying the recovery of the isotope performance standard for EPA 533.
18	OCWD Reference Ion Ratio Report.pdf	A report comparing the ratio of the response of the reference ion to the qualifier ion in some mass spectrometry methods.
19	OCWD Field Reagent Blank Report.pdf	A report checking the acceptability of blank samples collected in the field along with regular field samples. A separate report is needed because the field samples and QC samples are stored and treated separately in the current LIMS, so a field sample treated as a QC sample required special programming.
20	OCWD Area Count and RT Report EPA 332.pdf	A report to check the retention time and area count ratio of analyzed samples as required in EPA 332.

21	OCWD TOC Replicate RSD Report.pdf	A report to check the relative standard deviations in replicate injections as required in *Standard Methods* 5310 C.
22	OCWD Nitrosamines FPW Report.pdf	A report to ensure that analysts alert their supervisor and laboratory Director if NDMA appear in the GWRS plant's final product water above a configured concentration.
23	OCWD EPA 524 MTBE Report.pdf	This is a holdover report from a time when MTBE was an issue. It's no longer relevant with method improvements made over the last decade.
24	OCWD Manual Data Report.pdf	This report outputs manual data input into the laboratory's Citrus MET ELN to be used in the data packet for review.
25	OCWD Action Level Notification Email.pdf	Results that exceed a configured concentration level (the action level, typically set at 75% of a regulatory limit) are flagged in the current LIMS and analysts can send these automated emails to internal clients to inform the elevated result.
26	OCWD Action Level Notification Summary Report.pdf	This report summarizes all the ALN emails sent from the current analytical batch.
27	OCWD Data Qualifier Report.pdf	This report summarizes comments and qualifiers related to samples in the current analytical batch.

Section O-2 Data Searches

When the lab's current LIMS was implemented, there was no way for lab staff to create reports. However, the LIMS contains a data search generator that allows data to be searched based on views or stored procedures in the database. For several years, this was the main means by which the lab could make reports. The tool remains the only way the average lab staff has to perform and save ad hoc data searches.

#	Report	Description
28	OCWD Ion Balance Status Data Search.pdf	Data search run weekly to inform Inorganics staff and supervisors of the status of constituent analytes from different methods that are required to perform the Ion Balance calculation.
29	OCWD Prepped Samples Not in Worksheet Data Search.pdf	Data search that is run weekly to track samples that have been batched into a prep log but have not been imported into an analytical worksheet yet. This helps make sure that any samples sent back for re-prep are not forgotten.
30	OCWD Not Peer Reviewed Data Search.pdf	Data search that is run weekly to track sample results that have been imported into a LIMS analytical worksheet but have not been peer reviewed yet. This helps make sure worksheets are not lost on somebody's desk waiting for review.

31	OCWD Analysis Start Date-Time Issues Data Search.pdf	Data search that is run weekly to find samples where the dates or times are out of sequence between sample receipt, analysis start time, and analysis time. A few years ago, the laboratory began tracking the analysis start time (generally when sample prep begins) separate from the analysis time (typically when injected into the instrument) due to an assessment finding that said the laboratory could not prove it was meeting hold time with just the analysis time. The current LIMS provides a data validation warning that the times do not match, but analysts sometimes miss it.
32	OCWD NA Results Not Sent to WRMS Data Search.pdf	A monthly data search to help ensure that NA (not analyzed) results from samples that are not analyzed still get reported to WRMS so that the Water Quality department can account for all samples submitted to the laboratory.
33	OCWD Qualifier Use Count Data Search.pdf	A data search that is not run routinely, but is available to check for patterns in qualifier use. It can help spot trending method problems.
34	OCWD Qualifier Use Details Data Search.pdf	This data search provides details on specific samples and results where qualifiers were used and allows for follow-up on trends seen in the OCWD Qualifier Use Count Data Search above.
35	OCWD Limits Guide Data Search.pdf	Data search that is generally used annually as MDL calculations are completed and MDLs are updated for each method.
36	OCWD QC Limits Data Search.pdf	Data search detailing the QC sample types, true values, and limits for each analyte in a method.
37	OCWD Initial DOC Calculation Data Search.pdf	Data search that gathers data from analyst initial Demonstration of Capability (DOC) analyses and calculates the recovery and RSD to verify analyst performance after training and before being allowed to report data from a method.
38	OCWD Ongoing DOC Calculation Data Search.pdf	Data search that gathers data from analyst ongoing Demonstration of Capability (DOC) analyses and calculates the recovery and RSD to verify analyst performance after training and before being allowed to report data from a method.
39	OCWD Ongoing DOC Data Search.pdf	Data search that gathers QC sample data from input worksheets then data calculates the recovery and RSD to verify analyst performance for their ongoing Demonstration of Capability (DOC).
40	OCWD Test Series Data Search.pdf	The laboratory organizes analytes into test groups (generally, test groups correspond with a method, like EPA 533, or Standard Methods 5310 C) and then test groups into test series that can be ordered for a particular sampling event. This data search allows you to find all the test series that contain a particular analyte or test group.
41	a & b) OCWD Test Group (1/2) Data Search.pdf	A data search that displays all the analytes available in a particular test group.

42	OCWD Prep Log Data Search.pdf	Data search that displays all the prep logs associated with a particular analytical worksheet.
43	Samples and Tests Data Search.pdf	A general sample and results data search. Often used to check historical data for a particular analyte at a particular sampling site.
44	OCWD Matrix Dilution Data Search.pdf	A data search that returns data stored in tables that track past matrix issues or dilutions performed at a particular sampling site.
45	OCWD Worksheets by Analyst Data Search.pdf	A productivity and reference data search displaying all the analytical worksheets by method created by a particular analyst in a selected time frame.
46	OCWD Turnaround Time Data Search.pdf	This data search displays the average turnaround times for various steps in the sample lifecycles per month for a selected test group and time period.
47	OCWD Peer Review Productivity Data Search.pdf	A productivity data search showing how many analytical worksheets were peer-reviewed by an analyst in a given time frame.

Section O-3 General Reports

A few reports existed outside of the Data Packet reports and about two years ago the lab's LIMS Administrator was provided with tools to create reports and deploy them via SQL Server Reporting Services. Since then, several reports have been created and some of the data searches have been replaced. These reports are either generated in LIMS independent of an analytical worksheet, or outside of LIMS using SSRS's ability to create report subscriptions that run and store reports automatically.

#	Report	Description
48	OCWD Flat File for UCMR5 Report.pdf	A flat file (normally a .txt file) generated from LIMS to electronically submit result data to the EPA's Unregulated Contaminant Monitoring Rule program. There is a set of tables in the laboratory's current LIMS to configure EPA-acceptable codes for methods, analytes, sampling points, etc. so that LIMS data can be translated into this format.
49	OCWD Worksheet Status Check Report.pdf	The current LIMS does a poor job of tracking sample status
50	OCWD LIMSWRMS Data Change Request Report.pdf	This report replaced an older form used by the laboratory to request changes to data that was reported incorrectly. It takes user input to select a set of results and related data. The user then exports the report, adds the changes that need to be made, and sends it in an email to the group that approves and makes the changes.
51	OCWD Re-Extraction Request Report.pdf	Another report that is used to make a form. This form is used by the analyst to request that a sample be re-prepared for a repeat analysis. This form is needed in large part because sample tracking is so poor in the current LIMS between login and analysis.

52	OCWD QC Chart Report	Shewhart-type QC chart report generated quarterly by an automated process. The report contains several Westgard rules to look for trends in the data.
53	OCWD Backlog Report.pdf	A report of all samples that have been logged in but not yet put into a prep log. Sample data such as compliance status, hold time, and past dilution is included.
54	OCWD LIMS Data Exported to WRMS Report.pdf	A report that lists all the data fields that are transferred from LIMS to the WRMS database. Since the laboratory primarily reports data electronically to this internal WRMS database, this is the closest thing the laboratory has to an "official" laboratory data report.
55	OCWD Total Nitrogen Status Report.pdf	Total Nitrogen is required in the GWRS permit and it is calculated from results in three different methods: Hach 10242 for TKN, EPA 300.0 for NO3-N, and SM4500 NO3-F for NO2-N. This report can be used to quickly check the status of each of those analyses since the laboratory is required to report data within 72 hours of sample collection.
56	OCWD RL Exceeds DLR Report.pdf	California has a Detection Limit for Reporting (DLR) for many analytes and requires that reporting limits are above this value for compliance samples. Reporting limits are increased when samples are diluted, so this report helps ensure that samples are not over-diluted in relation to the DLR.

Section O-4 Reports for Proficiency Testing

In 2025, the lab decided to store data from Proficiency Testing (PT) vendors and California ELAP (the laboratory's accrediting body) in LIMS to cross-reference that data with the laboratory's method and analyte data for Proficiency Testing samples. This system is used to ensure all required PTs are performed and to report PT data electronically to the PT sample vendors.

#	Report	Description
57	OCWD PT FOA Check Report.pdf	This report displays stored data from California ELAP (the laboratory's accrediting body) of all the analytes and methods that the laboratory is accredited for. ELAP has their own numbering and naming conventions for each analyte and method as well as calling out specific method versions that must be used to maintain accreditation. This report checks that PT samples have been logged into LIMS to meet each accredited analyte/method combination.
58	OCWD PT Part Number Checklist Report.pdf	This report displays vendor part numbers and names for proficiency testing analytes and samples ordered by the laboratory each year. The vendors have their own naming conventions that are different from each other, the laboratory, and ELAP. This report ensures that the PT samples logged in match what was ordered and that they will cover all of the ELAP requirements.

59	OCWD PT Data Review Report.pdf	A post-analysis data review report to ensure all data has been input into LIMS and is ready to be reported to the PT vendor.
60	OCWD PT Electronic Report Phenova.pdf	An output of PT data using the PT vendor and ELAP's naming conventions in a format suitable to submit data back to the PT vendor.

EXHIBIT F

EXAMPLES OF LAB REPORTS

Due to the size of the document, Exhibit F is linked here:

EXHIBIT F: EXAMPLES OF LAB REPORTS

ATTACHMENT NO.1

RFP SUBMITTAL CHECKLIST

ATTACHMENT NO.1

Request for Proposals (RFP) Submittal Checklist

The following submittals shall be completed and submitted with each Proposal package (see table below for the "Required Submittal Checklist."). This table has been provided as a convenience for proposers to use as a reference only. Ultimately, it is the Proposer's sole responsibility to ensure that their proposal complies with all requirements of the RFP and all the required submittals are included in the Proposal package before it is formally submitted to OCWD. Proposals may be deemed nonresponsive if they do not respond to all areas specified in the RFP.

Item No.	Required Submittal Checklist	Check (√)
1	Signed Proposal package including:	
2	Title Page	
3	Cover Letter	
4	Table of Contents	
5	Project Overview and Approach	
6	Project Team Qualifications	
7	Record of Success On Recent Similar Project	
8	Additional Services	
9	Price Proposal and Rate Sheet	
10	OCWD Standard Contract: • A statement accepting the requirements stated in Section 7.8 of the RFP.	
11	Statement of Insurance Compliance • A statement accepting the requirements stated in Section 7.9 of the RFP.	
12	Billing and Payment Terms • A statement accepting the requirements stated in Section 7.10 of the RFP.	
13	Conflict of Interest	
14	Equal Employment Opportunity and Affirmative Action Requirements	
15	Addenda Acknowledgement Forms (if applicable)	